

## JACK SCHEMATICS

**Circuit Types:** Jacks normally have through circuits, shunt circuits, and/or isolated switching circuits, either individually or in various combinations. The chart below shows schematics of 39 common jacks - many more combinations are possible, but these are the most commonly used. A basic description of the switching action of each jack accompanies each schematic.

**Military Identification:** Military specifications covering phone jacks use a special code to describe jack functions. Jack schematic descriptions are coded J-1 through J-13 (as appropriate) to coincide with Federal Item Identification Guides for Supply Cataloging. One or more groups of suffix numbers/letters identify isolated switching circuits used. Suffixes identify the switching by industry recognized notation, i.e., 1-A, 1-B, 1-C, 1-D, etc. See chart below.

Notation	Meaning
1-A	One, SPST switching circuit. Also known as NO (normally open) or "make" circuit.
1-B	One, SPST switching circuit. Also known as NC (normally closed) or "break" circuit.
1-C	One, SPDT switching circuit. Also known as transfer or "break" before "make" circuit.
1-D	One, SPDT switching circuit. Also known as "make" before "break" circuit.

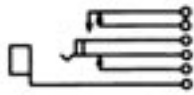
**NOTE:** Number indicates the quantity of circuit - 2-A means 2, A circuits. Terminals locations shown on jack schematics do not necessarily coincide with physical locations on jacks. Not all circuit types available on all jacks.

Single open circuit. (J1.)	Single closed circuit, sleeve common. (J3).	Single closed circuit. (J4).	Double open circuit. (J2).	Single open circuit. Isolated switching "make" circuit. (J1-1-A).
Transfer circuit. (J5).	Tip closed, ring open. (J10).	Tip closed, ring open (common to sleeve). (J6).	Single open circuit. Isolated switching "break" circuit. (J1-1-B).	Double closed circuit, ring common to sleeve. (J13).
Single closed. Isolated switching "make" circuit. (J4-1A).	Double closed circuit. (J7).	Single closed circuit. Isolated switching transfer circuit. (J4-1C).	Double closed circuit. Isolated switching "break" circuit. (J7-1B).	Double open circuit. Isolated switching transfer circuit. (J2-1C).
Double open circuit. Isolated switching—separate "break" and make circuits (J2-1A-1B).	Single closed circuit Isolated switching "break" circuit. (J4-1B).	Single closed circuit—"make" before "break". (J8).	Single open circuit. Isolated switching transfer circuit. (J1-1C).	Double open circuit. Isolated switching "make" circuit. (J2-1A).
Double open circuit. Isolated switching—separate "make" circuits on both tip and ring. (J2-2A).	Double closed circuit. Isolated switching "make" circuit on ring spring. (J7-1A).	Single closed circuit plus "make" before "break". Isolated switching—"make" before "break" circuit. (J8-1D).	Single open circuit. Isolated switching—separate transfer and "make" circuits. (J1-1A-1C).	Single closed circuit. Isolated switching "break" circuit. Sleeve common to isolated switching circuit throw. (J4-1B).

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

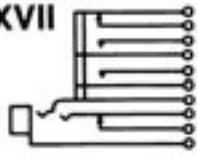
## JACK SCHEMATICS

XXVI



Single closed circuit. Isolated switching—"make" before "break" circuit. (J4-1D).

XXVII



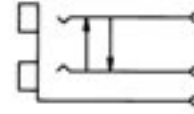
Tip closed; ring open circuits. Isolated switching—two "make" circuits and one "break" circuit. (J10-2A-1B).

XXVIII



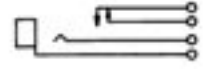
Single open (tip) circuit and single closed (ring) circuit. (J9).

XXIX



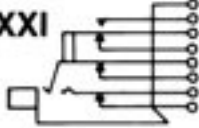
Double jack, 2-conductors on each side. Tip circuits cross shunted; common sleeve. (J12).

XXX



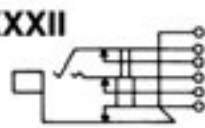
Single open circuit—"make" before "break". (J11).

XXXI



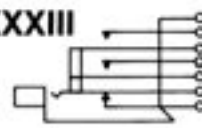
Tip closed; ring closed circuits. Isolated switching—"break" before "make" circuit.

XXXII



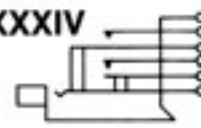
Double closed circuit. Separate sleeve "break" circuit.

XXXIII



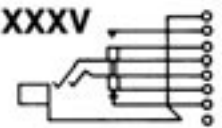
Single closed circuit. Isolated switching—Two "make" circuits.

XXXIV



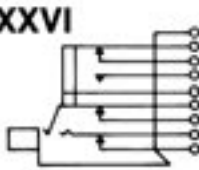
Single open circuit. Isolated switching—Two "make" circuits.

XXXV



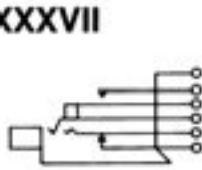
Double open circuit. Isolated switching—One "make" and one "break" circuit.

XXXVI



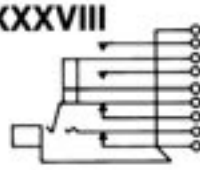
Double closed circuit. Isolated switching—One "make" and one "break" circuit.

XXXVII



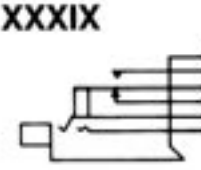
Tip closed; ring open circuits. Isolated switching—One "make" circuit.

XXXVIII



Double closed circuit. Isolated switching—Two "make" circuits.

XXXIX



Double open circuit. Isolated switching—"break" before "make" circuit.

## WIRE-WRAPPING TERMINATIONS

Switchcraft can build complete Jack Panel Assemblies with jacks, lamp jacks and switches with wire-wrapping terminals. If desired, components with solder lugs and wire-wrapping terminals can be installed in the same assembly.

### WIRE-WRAPPING TERMINAL DESIGN

Jack springs with integral wire-wrapping terminals are made of special copper alloy for maximum work-life with excellent resistance to corrosion. Shank of terminal accommodates a maximum of three wire connections. Tini-Telephone® phone jacks, lamp jacks and switches with wire-wrapping terminals have slightly higher stack due to greater spacing required for wrapping tool access. Actuator springs and ground lug terminals are .704" long by .060" wide.

## WIRE-WRAPPING CONNECTIONS

Use the chart below as a guide to recommended tools to be used with varying terminal thickness and wire gauges.

Terminal Thickness (Inches)	Wire Gauge	Recommended Wire-Wrapping Tool (Gardner-Denver Co. Part Numbers)	
		Use with 14B1-A Wrapping Bit	Wrapping Tool Sleeve
.020 thru .032	22 & 24	500131	18840
.016	24	500131	18840
.016 thru .032	26	37006	17611-2

**SPECIFYING NOTE:** Due to assembly variations containing components (solder lugs, wire-wrapping terminals, or both), these Jack Panel Assemblies are available on special order only. Contact Switchcraft.

## JACK MATING DATA

**NOTE:** See tables for jack/plug mating data

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## 1/4" LONG FRAME TELEPHONE JACKS

### JACK MATERIALS

The complete Switchcraft line of standard size panels, jacks, plugs, switches and accessories are rugged, premium quality devices...hand-crafted by experts...100% inspected... and carefully adjusted to meet the traditionally high quality demands of the telephone industry and the military. Tightly controlled incoming inspection, manufacturing methods, and QC procedures assure you of long-life, reliable components. Typical applications where Switchcraft components have been specified for more than five decades are: telephone central office equipment, switchboards, jackfields, test and patch panels, and station equipment; TV and radio broadcasting consoles; PA and communication consoles; telegraph systems and apparatus; multichannel video and audio patching; and data processing equipment, such as computers, telemetry, I/O devices and facsimile.

**FRAMES** – Jack frames are heavy steel, formed and press welded for added strength. Side member adds to frame rigidity and resistance to shock and vibration. Both "A" and "C" type frames can be supplied. (See next page.)

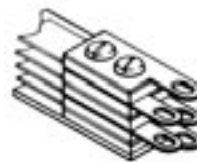
**SPRINGS** – A special copper alloy is used for leaf springs because it offers excellent mechanical and electrical characteristics, and good corrosion resistance. The spring alloy has special hardness and ductility, and springs are produced from custom-designed dies. Although normally adjusted to mate with telephone (and MIL-type) plugs, springs can be adjusted to mate with commercial phone plugs.

**BUSHINGS** – Bushings are copper alloy (except insulated jacks), drilled to accept either a standard (.250" diameter finger) plug or a popular smaller (.206" diameter finger) plug. Series M Hi-D Jax® have a threaded brass bushing, or a molded thermoplastic bushing for insulated mounting.

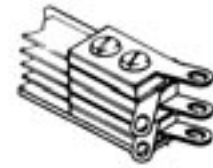
**CONTACTS** – Jack design includes "wiping" action of contacts for low resistance connections. The contacts supplied depend on the jack selected. Gold or silver plating is normally offered as an option on tip, ring and/or sleeve springs. Several precious metals and shapes are used on jacks.

Material	Shape	Description
Palladium	Welded Crossbar	Best overall combination of life, current carrying, and resistance to environment. Also known as WEco #2.
Fine silver	Riveted, button-type	Carries higher current than palladium.
Gold alloy Crossbar	Welded switching.	Recommended for dry circuit. Excellent resistance to corrosion and contamination. Also known as WEco #1.
Fine silver (Large)	Riveted, button-type	Heavy currents.
Gold or Silver	Plating	For lower contact resistance (used on through circuit springs).

**SOLDER LUGS TERMINALS** – Lugs project out directly from rear of jack and are solder-coated for easy wiring and soldering. Offset lugs can be supplied on special order (except standard on MT-Jax®). Jacks with offset ground lugs are particularly suitable for bussing connections on jack panels. Contact Switchcraft for special order lug requirements.



STRAIGHT  
SOLDER LUGS



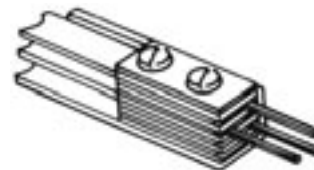
OFFSET  
SOLDER LUGS

**WIRE-WRAPPING TERMINALS** – Wire-wrapping eliminates the need for soldering. Each terminal accepts up to three wrapped wires (22 or 24 gauge, 5 wraps each), applied with standard wire-wrapping tools. Terminal base has standoff shoulder which prevents first wrapped wire from accidentally sliding down and shorting against another terminal or adjacent spring. Terminal tips are radiused to facilitate positioning of wire-wrapping tool over terminals. See page 80 for wire-wrapping data.



WIRE-WRAPPING  
TERMINALS

**PRINTED CIRCUIT TERMINALS** – Components can be supplied with printed circuit terminals on special order. Terminals can be specified in various lengths to accommodate different thicknesses of single and double sided boards, as well as multilayers, and flat flexible cable and circuitry.



PRINTED CIRCUIT  
TERMINALS  
(SPECIAL)

**OTHER TERMINALS** – Many other special terminal styles are possible. For example, where mounting permits, jacks can be supplied with stacks having right-angle terminals. Contact Switchcraft for special terminals.

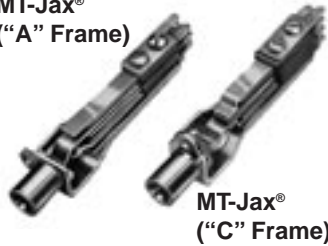
### CUSTOM COMPONENTS

Only the most popular types of jacks are listed.

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

### LONG FRAME TELEPHONE JACKS

MT-Jax®  
("A" Frame)



MT-Jax®  
("C" Frame)

XMT-Jax®, Number  
XMT-332A

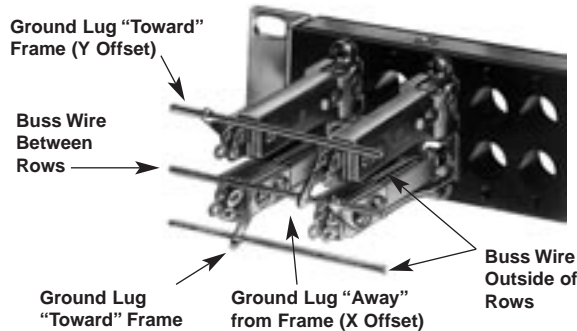


WMT-Jax®, Number  
WMT-332B



YMT-Jax®, Number  
YMT-332B

Details of Typical Buss Wiring of Jacks  
with Offset Ground Lugs



Long frame jacks are designed especially for high quality communication equipment, and to meet exacting MIL specifications, as well as telephone and communication systems. Many jacks have WEco equivalent types. MT-Jax® phone jacks are offered in four styles: MT-Jax®, WMT-Jax®, XMT-Jax® and YMT-Jax®. Rugged steel frames are produced in specially designed dies, press welded to provide rigidity and dimensional stability required by telephone and communication jack panels - and to meet MIL frame strength tests. "A" and "C" frame styles are available.

**TERMINALS** – Solder Lug: All MT-Jax® have solder lug terminals. Wire-Wrapping Terminals: WMT-Jax® have wire-wrapping terminals. Offset Ground Lugs: XMT-Jax® and YMT-Jax® have ground lugs, which simplify production line wiring time. A single row of jacks can be installed with a single buss wire connected to all ground lugs in a row, or when double rows are mounted on .625" vertical centers with lugs oriented between rows, holes in ground lugs line up so a single buss wire provides connections for both rows. XMT-Jax® have ground lugs oriented away and YMT-Jax® are oriented toward jack frame. See illustration.

**MIL STANDARDIZATION** – MIL jack types listed have been adjusted for use with plugs specified in Amendment No. 1, MIL-P-642, usually M642/1-1, M642/1-2, M642/2-1, M642/2-2, M642/4-1 or M642/4-2. When applicable, specify the plug you will use; we will adjust with that plug where the item is not a MIL-type. NOTE:

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

MT-Jax® jacks Numbers ◊MT-342B and ◊MT-344B have shorter bushings, 0.5" long with a hold inside diameter of .21". They will mate with MIL plug M642/5-1 or M642/8-1. M642/5-1 plug (Switchcraft 480) cannot be used with ◊MT-342B or ◊MT-344B if these jacks are mounted on standard .625" thick panels. The short jack bushings are recessed .125", and the M642/5-1 is too wide to fit in the panel recess. Use plug M642/8-1 (Switchcraft 484) with a narrower diameter to fit in the recess and mate properly.

**CONTACTS** – Contacts on shuts and isolated switching circuits are welded crossbar palladium. Welded crossbar gold alloy contacts (WEco #1) are available on special order for dry circuit applications.

### SPECIFICATIONS

**Frame and Stack Screws:** Plated steel, with iridescent iridite finish.

**Springs:** Copper alloy, spring tempered. Solder lugs are tinned.

**Bushings:** Plated copper alloy standard. Natural brass finish optional.

**Insulation:** Rigid plastic spacers (MIL-type PBE-P per Specification LP-513). One piece molded through stack.

**Contacts:** Welded crossbar palladium contacts in shunt and isolated switching circuits are standard. Gold alloy (WEco #1) and fine silver are available on special order.

### MECHANICAL

**Life:** Commercial jacks: 10,000 insertion/withdrawal cycles, minimum. Military Jacks: 20,000 insertion/withdrawal cycles, minimum.

**Mechanical Shock:** Military Jacks – Per MIL-STD-202, method 213, Test Condition H (75g).

**Vibration:** Military Jacks – Per MIL-STD-202, method 213, (10-55 Hz).

### ELECTRICAL

**Contact Resistance:** Commercial Jacks – .030 ohms maximum (initial), .050 ohms maximum (after humidity, durability exposure). Military Jacks – .010 ohms maximum (initial), .020 ohms maximum (after life), .10 ohms maximum (after salt spray).

**Insulation Resistance:** Commercial Jacks – 10,000 MΩ minimum (initial), 1,000 MΩ minimum (after humidity). Military Jacks – 10,000 MΩ minimum (initial), 1,000 MΩ minimum (after humidity, durability exposure).

**Dielectric Withstanding Voltage:** 500 V, 60 Hz (rms) AC.

### ENVIRONMENTAL

**Thermal Range:** Commercial Jacks – -55°C to +85°C (non-operating); -20°C to +65°C (operating). Military Jacks – -55°C to +85°C (non operating); -40°C to +65°C (operating).

**Thermal Shock:** Commercial Jacks – Per MIL-STD-202, method 107. Military Jacks – Per MIL-STD-202, method 107.

**Humidity:** Commercial Jacks – Per MIL-STD-202, method 106. Military Jacks – 0% to 95% operating and non-operating.

**Salt Spray:** Commercial Jacks – Per MIL-STD-202, method 101. Military Jacks – Per MIL-STD-202, method 101 (48 hours).

**Moisture Resistance:** Military Jacks – Per MIL-STD-202, method 106 (240 hours).

**ORDERING** – Order jacks by part number. Additional variations in jacks are available on special order. Special circuitry, frames, contacts, natural brass bushings, as other terminals are available.



## 1/4" LONG FRAME TELEPHONE JACKS

MT-JAX® (with WEco Equivalent Jacks)<sup>2</sup>

Switchcraft Part Number	WEco Equiv.	MIL Type <sup>1</sup>	Schematic Circuit*	Dim. "X" maximum Inch (mm)	Mating Plug <sup>3</sup>
<b>2-CONDUCTOR 2</b>					
MT331	233A, 221E3	M641/2-8	I	.438 (11.1)	M642/4-1 M642/4-2 or M642/4-3
◊CMT331	223C	—	I	.438 (11.1)	
◊WMT331	223AM	—	I	.438 (11.1)	
◊WCMT331	223CM	—	I	.438 (11.1)	
◊MT332	232A, 544A4	—	II	.5 (12.7)	
◊CMT332	232C	—	II	.5 (12.7)	
MT332A	218A	M641/2-3	III	.5 (12.7)	
◊CMT332A	218C	—	III	.5 (12.7)	
◊MT332C	303A	M641/2-1	XVIII	.562 (14.3)	
MT333	215A	M641/2-6	V	.469 (11.9)	
◊CMT333	215C	—	V	.469 (11.9)	
◊MT333E	237A	—	IX	.625 (15.9)	
◊CMT333A	237C	—	IX	.625 (15.9)	
MT334A	225A, 234A	—	XI	.562 (14.3)	
◊CMT334A	225C, 234C	—	XI	.562 (14.3)	
MT334C	216A	M641/2-5	XVII	.625 (15.9)	
◊CMT334C	216C, 484C5	—	XVII	.625 (15.9)	
MT334E	217A	M641/2-7	XXV	.562 (14.3)	
◊CMT334E	217C	—	XXV	.562 (14.3)	
◊MT334F	226A	M641/2-4	XIX	.562 (14.3)	
◊CMT334F	226C	—	XIX	.562 (14.3)	
◊MT335	236A	—	XIII	.562 (14.3)	
◊CMT335	236C	—	XIII	.562 (14.3)	
◊MT336E <sup>10</sup>	438A	—	XXIII	.75 (19.0)	
CMT336E	438C	M641/1-2	XXIII	.75 (19.0)	
◊MT337 <sup>10</sup>	411A	M641/2-9	XXIV	.75 (19.0)	
◊CMT337	411C	M641/1-1	XXIV	.75 (19.0)	
◊CMT351C	394C	—	XXXIII	.812 (20.6)	
◊MT352A	218J	—	III	.5 (12.7)	
◊CMT354F	361C	—	XXXIV	.75 (19.0)	

\*Refer to page 79 and 80 for schematics.

◊ Special order only; contact Switchcraft.

- Many jacks are offered with MIL specifications. Other jacks are made of MIL-spec materials but do not have MIL approval because no MIL type numbers have been assigned.
- MT-Jax have nickel-plated copper alloy bushing. WEco equivalent jacks have plain copper alloy bushings (except WEco Number 221E, which has nickel-plated copper alloy bushing).
- Mating plugs and patch cords are contained in the catalog.
- Adjust non-short tip-ring.
- Adjusted for plug M642/1-1 or M642/1-2.
- Actuates differently (insulated "A" off ring instead of tip).
- Same as MIL type M641/2-3 except with offset ground lug.
- Same as MIL type M641/3-1 except with offset ground lug.
- Same as MIL type M641/3-2 except with offset ground lug.
- When mounted on "A" frames, stacks are too high to fit in standard panels with .625" horizontal space add prefix "C" to part number to order jacks with "C" frame.

Switchcraft Part Number	WEco Equiv.	MIL Type <sup>1</sup>	Schematic Circuit*	Dim. "X" maximum Inch (mm)	Mating Plug <sup>3</sup>
<b>3-CONDUCTOR</b>					
MT332B	238A	M641/3-1	IV	.562 (14.3)	M642/2-1 or M642/2-2
◊CMT332B	238C	—	IV	.562 (14.3)	
WMT332B	238AM	—	IV	.562 (14.3)	
◊WCMT332B	238CM	—	IV	.562 (14.3)	
MT333B	300A	—	VII	.562 (14.3)	
◊MT334B	239A	M641/3-2	XII	.562 (14.3)	
◊CMT334B	239C	—	XII	.562 (14.3)	
WMT334B	239AM	—	XII	.578 (14.7)	
◊WCMT334B	239CM	—	XII	.578 (14.7)	
◊MT336	241A	M641/3-4	XX	.562 (14.3)	
◊CMT336	241C	—	XX	.562 (14.3)	
◊WMT336 <sup>10</sup>	241AM	—	XX	.625 (15.9)	
◊WCMT336	241CM	—	XX	.625 (15.9)	
◊MT336A <sup>10</sup>	242A	M641/5-5	XIV	.688 (17.5)	
◊CMT336A	242C	—	XIV	.688 (17.5)	
◊WMT336A	242AM	—	XIV	.75 (19.0)	
◊WCMT336A	242CM	—	XIV	.75 (19.0)	
◊MT336B <sup>10</sup>	285A	M641/3-6	XXI	.812 (20.6)	
◊CMT336B	285C	—	XXI	.812 (20.6)	
◊MT336C <sup>10</sup>	240A	M641/3-3	XXII	.688 (17.5)	
◊CMT336C	240C	—	XXII	.688 (17.5)	
◊WMT336C <sup>10</sup>	240AM	—	XXII	.75 (19.0)	
◊WCMT336C	240CM	—	XXII	.75 (19.0)	
◊MT336D <sup>10</sup>	280A	—	XXXI	.75 (19.0)	
◊CMT336D	280C	—	XXXI	.75 (19.0)	
◊WMT336D <sup>10</sup>	280AM	—	XXXI	.938 (23.8)	
◊WCMT336D	280CM	—	XXXI	.938 (23.8)	
◊MT338	267A	—	XXXII	.562 (14.3)	
◊CMT338	267C	—	XXXII	.562 (14.3)	
◊MT339 <sup>10</sup>	284A6	M641/3-7	XXVII	.967 (24.6)	
◊CMT339	384C6	—	XXVII	.967 (24.6)	
◊MT342B	246A	—	IV	.563 (14.3)	M642/5-1

MT-JAX (WITH WECO EQUIVALENT JACKS)<sup>2</sup>

Switchcraft Part Number	WEco Equiv.	MIL Type <sup>1</sup>	Schematic Circuit*	Dim. "X" maximum Inch (mm)	Mating Plug <sup>3</sup>
<b>3-CONDUCTOR 2</b>					
◊WMT342B	246 AM	—	IV	.562 (14.3)	M642/5-1
MT344B	248A	—	XII	.625 (15.9)	
◊MT346	249A	—	XX	.562 (14.3)	
◊CMT346	249C	—	XX	.562 (14.3)	
◊MT354B	248E	—	XII	.625 (15.9)	
◊MT355 <sup>10</sup>	243C	—	XXXV	.812 (20.6)10	M642/5-1 or M642/2-2
◊MT356C <sup>10</sup>	245A	—	XXXVI	.938 (23.8)10	
◊CMT356C	245C	—	XXXVI	.938 (23.8)	
◊MT357 <sup>10</sup>	363A	—	XXXVII	.75 (19.0)10	
◊CMT358	290C	—	XXXVIII	.875 (22.2)	
◊CMT359	326C	—	XXXIX	.75 (19.0)	

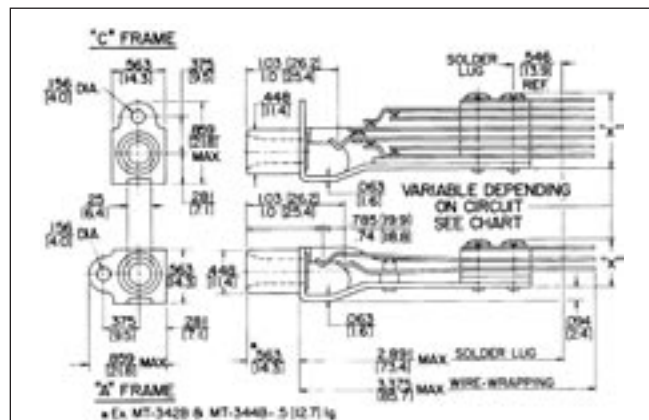
DIMENSIONS ARE FOR REFERENCE ONLY

Inch  
(mm)

## MT-JAX®

(Industry Standard – No WEco Equivalent)

Switchcraft Part Number	MIL Type <sup>1</sup>	Schematic Circuit*	Dim. "X" maximum Inch (mm)	Mating Plug <sup>3</sup>
<b>2-CONDUCTOR<sup>2</sup></b>				
◊WMT332A	—	III	.5 (12.7)	M642/4-1 M642/4-2 or M642/4-3
◊WCMT332A	—	III	.5 (12.7)	
XMT332A	—	III	.5 (12.7)	
◊YMT332A	—	III	.5 (12.7)	
◊CMT332C	—	XVIII	.562 (14.3)	
◊WMT332C	—	XVIII	.5 (12.7)	
◊WMT333	—	V	.469 (11.9)	
◊WCMT333	—	V	.469 (11.9)	
◊MT333A	—	VI	.967 (24.6)	
◊WMT333E	—	IX	.625 (15.9)	
◊WMT334A	—	XI	.562 (14.3)	
◊WMT334C	—	XVII	.562 (14.3)	
◊WMT334E	—	XXV	.562 (14.3)	
◊WMT334F	—	XIX	.641 (16.3)	
◊WMT335 <sup>10</sup>	—	XIII	.688 (17.5)	
◊WCMT335	—	XIII	.688 (17.5)	
MT335A <sup>10</sup>	M641/2-2	XXVI	.75 (19.0)	
◊CMT335A	—	XXVI	.75 (19.0)	
◊WMT335A	—	XXVI	.75 (19.0)	
◊WCMT335A	—	XXVI	.75 (19.0)	
◊WMT336E <sup>10</sup>	—	XXIII	.875 (22.2)	
◊WCMT336E	—	XXIII	.875 (22.2)	
◊CMT341	—	I	.438 (11.1)	



MT-Jax® and WMT-Jax®

## MT-JAX®

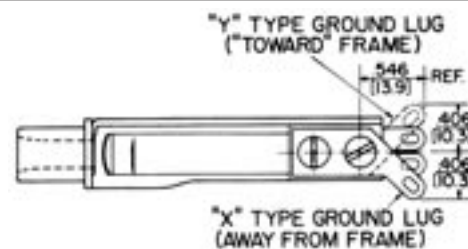
(Industry Standard – No WEco Equivalent)

Switchcraft Part Number	MIL Type <sup>1</sup>	Schematic Circuit*	Dim. "X" maximum Inch (mm)	Mating Plug <sup>3</sup>
<b>3-CONDUCTOR<sup>2</sup></b>				
XMT332B	—	IV	.562 (14.3)	M642/2-1 or M642/2-2
◊YMT332B	—	IV	.562 (14.3)	
◊CMT333B	—	VII	.562 (14.3)	
◊WMT333B	—	VII	.562 (14.3)	
XMT334B	—	XII	.562 (14.3)	
◊YMT334B <sup>10</sup>	—	XII	.562 (14.3)	
◊WMT336B	—	XXI	.812 (20.6)	
◊WCMT336B	—	XXI	.812 (20.6)	
◊MT343B	—	VII	.5 (12.7)	
◊CMT342B	—	IV	.562 (14.3)	
◊CMT344B	—	XII	.625 (15.9)	M642/5-1
◊WMT344B	—	XII	.625 (15.9)	
◊MT346A <sup>10</sup>	—	XIV	.688 (17.5)	
◊MT346B <sup>10</sup>	—	XXI	.812 (20.6)	
◊MT346C <sup>10</sup>	—	XXII	.688 (17.5)	
◊CMT346C	—	XXII	.688 (17.5)	M642/5-1 or M642/2-2 <sup>1</sup>

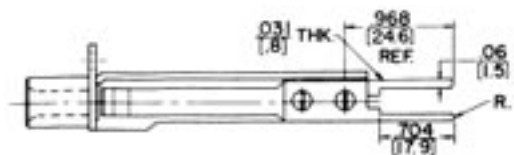
\*Refer to pages 79 and 80.

◊ Special order only; contact Switchcraft.

- Many jacks are offered with MIL specifications. Other jacks are made of MIL-spec materials but do not have MIL approval because no MIL type numbers have been assigned.
- MT-Jax have nickel plated copper alloy bushing. WEco equiv. jacks have plain copper alloy bushings (except WEco No. 221E, which has nickel plated copper alloy bushing).
- Mating plugs and patch cords are contained in this catalog.
- Same as MIL type M641/2-3 except with offset ground lug.
- Same as MIL type M641/3-1 except with offset ground lug.
- Same as MIL type M641/3-2 except with offset ground lug.
- When mounted on "A" frames, stacks are too high to fit in standard panes with .625" horizontal space add prefix "C" to part number to order jacks with "C" frame.



MT-Jax®, Offset Lugs



MT-Jax®, Wire-Wrapping Detail

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## 1/4" LONG FRAME TELEPHONE TWIN JACKS



MT389

MT388

WMT389

High quality telephone jacks are essentially doubled versions of MT-Jax®. Twin-Jax® are used in Switchcraft Series 2400, 2600 and JP® Jack Panels and other standard jack panels. Twin-Jax® have direct WEco equivalents.

## MT388 AND WMT388

Frame mounting ears are on 1.375" centers, and bushings are on .625" centers. Jacks are double, 2-conductor type with a crossover wiring feature. If a mating plug is inserted in either bushing, crossover contacts are opened (see schematic). MT388 (solder lugs) is equivalent to WEco jack 410A, 410C and 410D. WMT388 (wire-wrapping) is equivalent to WEco 410AM.

## MT389 AND WMT389

Double, 3-conductor jacks with both the tip and ring circuits interconnected (crossover wired) so if a plug is inserted in either jack, common circuits are opened (see schematic). MT-389 (solder lugs) is equivalent to WEco 482A. WMT389 (wire-wrapping) is equivalent to WEco 482AM and 482BM.

## SPECIFICATIONS

**Frame and Stack Screws:** Steel, plated with iridescent iridite finish.

**Springs:** Copper alloy, spring tempered. Solder lugs are solder coated.

**Bushings:** Nickel-plated copper alloy.

**Contacts:** Welded crossbar palladium in shunt circuits.

**Insulation:** Rigid plastic (MIL-type PBE-P, per MIL Specification LP-513C). Extruded plastic insulating tubing through stack.

## ORDERING

Order by part number from table.

Part Number <sup>1</sup>	Adjusted for Plug	Dim. "X" max. Inch (mm)
<b>MT388</b>	WEco types 298B and 347B MIL types M642/9-1 and M642/1-1	.562 (14.3)
<b>WMT388</b>	Switchcraft types 411, 412, 413, 420	.562 (14.3)
<b>MT389</b>	WEco type 310 MIL types M642/2-1 and M642/2-2	.594 (15.1)
<b>WMT389</b>	Switchcraft types 414 and 482	.562 (14.3)

◆ Special Order only; contact Switchcraft.

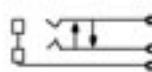
1. Number MT388 is equivalent to MIL-type M641/11-1

2. Complete data for telephone and MIL-type plugs are contained in this section.

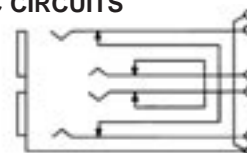
**Mounting Screws:** #6-32, Part Number P10725, can be ordered separately.

Contact Switchcraft. (Screws not supplied with jacks).

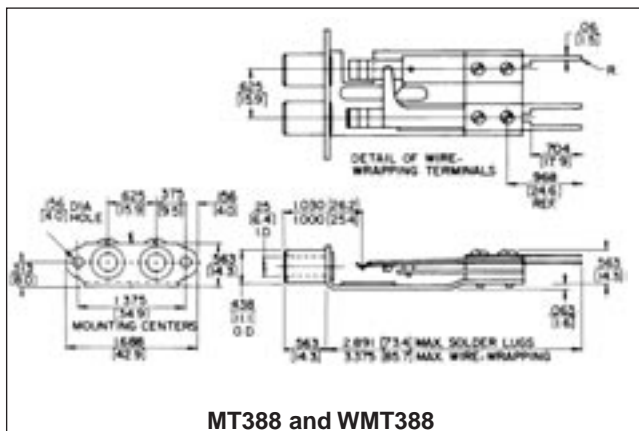
## SCHEMATIC CIRCUITS



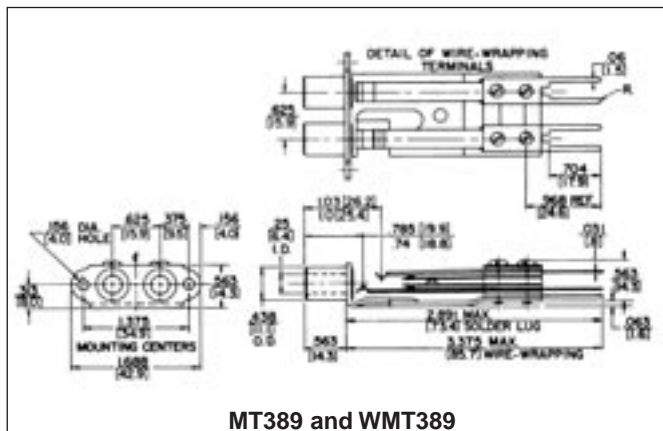
## MT388 and WMT388



### MT389 and WMT389



## MT388 and WMT388



### MT389 and WMT389

DIMENSIONS ARE FOR REFERENCE ONLY Inch  
(mm)

## 1/4" JACK BLOCKS

### DUAL-JAX BLOCK®



Dual-Jax Blocks are ideal where limited jack connections are needed but larger jack panels are not required. Designed for broadcasting, intercom and PA systems, switchboards, and commercial, industrial and military communications equipment. Dual-Jax Blocks mount in panels or chassis, either singularly or in multiples. Four countersunk holes accommodate four #8-32 screws (not supplied) for block mounting. Blocks can be supplied without jacks, or with MT-Jax® installed. Many other jacks including, T-Jax®, T-Switch® switches and lamp jacks can be installed. Jacks with wire-wrapping terminals or offset lugs can also be supplied. By drilling additional holes, Twin-Jax® may also be used. Contact Switchcraft for any special order items.

### SPECIFICATIONS

**Block:** Molded black thermoplastic.

**Screws:** #6-20 plated steel, QQ-P-416, Type II, Class 2 (for jack mounting).

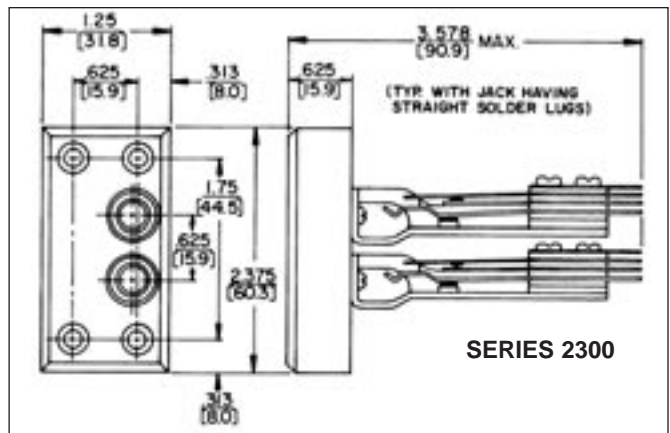
### ORDERING

Order by part number from table.

Part Number	Description
<b>2300</b>	Block, without jacks.
<b>2331</b>	Two, MT331 MT-Jax installed.
<b>2332A</b>	Two, MT332A MT-Jax installed.
<b>2332B</b>	Two, MT332B MT-Jax installed.
◇ <b>2333</b>	Two, MT333 MT-Jax installed.

◇ Special order only; contact Switchcraft for price and delivery.

**Mounting Screws:** #6-20, P1544, can be ordered separately, contact Switchcraft.



DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$



## TT-JAX® (.173") TELEPHONE JACKS BANTAM TYPE®



**TT36**  
STEEL FRAME



**TT32BDC**  
DIE-CAST FRAME  
(special order only)



**TT36FM**  
FRONT MOUNT



**WTT636C**  
THREADED BUSHING

## FEATURES

- Steel (standard) or die-cast frames (special order).
- 2-or 3-conductors.
- Palladium crossbar welded contacts are standard in switching circuits. Fine silver or gold alloy contacts are available on special order.
- Series TT30, TT30FM and TT600 - solder lugs; Series WTT-30, WTT30FM and WTT600FM -wire-wrapping terminals. Bussing solder lugs are available on special order.
- Series TT30 and WTT30 jacks mounts in Series 1600, A1600, B1600 and C1600 jacks panels.
- Series TT30FM and WTT30FM jacks mount in Series TT51, TT52, TT55 and TT56 jack panels.
- Series TT600 and WTT600 jacks mount in .25" diameter holes in panels up to .281" thick. Mounting centers: .438".
- Add "N" for nickel-plated frame and "Y" or for offset solder lugs.

## SWITCHCRAFT VS. MIL NUMBERS

Jack Number	MIL Spec. Number
<b>TT32B</b>	641/19-2
<b>TT32BFM</b>	641/19-6
<b>TT34B</b>	641/19-4
<b>TT34BFM</b>	641/19-8
<b>TT36C</b>	641/19-10
<b>WTT32B</b>	641/19-1
<b>WTT32BFM</b>	641/19-5
<b>WTT34B</b>	641/19-3
<b>WTT34BFM</b>	641/19-7
<b>WTT36C</b>	641/19-9

Part Numbers, Jack with Solder Lugs					Schem. <sup>1</sup>	Dim. "X" Max. In (mm) <sup>2</sup>	Cond.	Typical Mating Plug <sup>3</sup>
Series TT30		Series TT30FM		Series TT600				
Steel	Die Cast	Steel	Die Cast	Steel				
TT31	◇TT31DC	TT31FM	◇TT31FMDC	TT631	I	.422 (10.7)	2	TT251
TT32A	◇TT32ADC	TT32AFM	◇TT32AFMDC	TT632A	III	.406 (10.3)	2	TT251
TT32B	◇TT32BDC	TT32BFM	◇TT32BFMDC	◇TT632B	IV	.578 (14.68)	3	TT253
TT32C	◇TT32CDC	◇TT32CFM	◇TT32CFMDC	◇TT632C	XVIII	.422 (10.7)	2	TT251
TT33	◇TT33DC	TT33FM	◇TT33FMDC	◇TT633	V	.578 (14.7)	2	TT251
◇TT33B	◇TT33BDC	◇TT33BFM	◇TT33BFMDC	◇TT633B	VII	.484 (12.3)	3	TT253
TT34A	◇TT34ADC	◇TT34AFM	◇TT34AFMDC	◇TT634A	XI	.547 (13.9)	2	TT251
TT34B	◇TT34BDC	TT34BFM	◇TT34BFMDC	TT634B	XII	.578 (14.68)	3	TT253
TT34C	◇TT34CDC	TT34CFM	◇TT34CFMDC	◇TT634C	XVII	.547 (13.9)	2	TT251
TT34F	◇TT34FDC	-	-	-	XIX	.609 (15.5)	2	TT251
TT35	◇TT35DC	◇TT35FM	◇TT35FMDC	◇TT635	XIII	.609 (15.5)	2	TT251
TT36	◇TT36DC	◇TT36FM	◇TT36FMDC	◇TT636	XX	.609 (15.5)	3	TT253
TT36A	◇TT36ADC	TT36AFM	◇TT36AFMDC	TT636A	XIV	.625 (15.9)	3	TT253
TT36B	◇TT36BDC	-	-	-	XXI	.703 (17.9)	3	TT253
TT36C	◇TT36CDC	TT36CFM	◇TT36CFMDC	◇TT636C	XXII	.625 (15.9)	3	TT253

Part Numbers, Jack with Wire Wrapping Terminals					Schem. <sup>1</sup>	Dim. "X" Max. In (mm) <sup>2</sup>	Cond.	Typical Mating Plug <sup>3</sup>
Series WTT30		Series WTT30FM		Series WTT600				
Steel	Die Cast	Steel	Die Cast	Steel				
WTT31	◇WTT31DC	WTT31FM	◇WTT31FMDC	WTT631	I	.422 (10.7)	2	TT251
WTT32A	◇WTT32ADC	WTT32AFM	◇WTT32AFMDC	WTT632A	III	.406 (10.3)	2	TT251
WTT32B	◇WTT32BDC	WTT32BFM	◇WTT32BFMDC	WTT632B	IV	.578 (14.68)	3	TT253
◇WTT32C	◇WTT32CDC	◇WTT32CFM	◇WTT32CFMDC	◇WTT632C	XVIII	.422 (10.7)	2	TT251
WTT33	◇WTT33DC	WTT33FM	◇WTT33FMDC	◇WTT633	V	.578 (14.7)	2	TT251
◇WTT33B	◇WTT33BDC	◇WTT33BFM	◇WTT33BFMDC	◇WTT633B	VII	.484 (12.3)	3	TT253
◇WTT34A	◇WTT34ADC	◇WTT34AFM	◇WTT34AFMDC	◇WTT634A	XI	.547 (13.9)	2	TT251
WTT34B	◇WTT34BDC	WTT34BFM	◇WTT34BFMDC	WTT634B	XII	.578 (14.68)	3	TT253
-	-	-	-	◇WTT634C	XVII	.547 (13.9)	2	TT251
◇WTT35	◇WTT35DC	◇WTT35FM	◇WTT35FMDC	◇WTT635	XIII	.609 (15.5)	2	TT251
◇WTT36	◇WTT36DC	◇WTT36FM	◇WTT36FMDC	◇WTT636	XX	.609 (15.5)	3	TT253
◇WTT36A	◇WTT36ADC	◇WTT36AFM	◇WTT36AFMDC	◇WTT636A	XIV	.625 (15.9)	3	TT253
WTT36C	◇WTT36CDC	WTT36CFM	◇WTT36CFMDC	◇WTT636C	XXII	.625 (15.9)	3	TT253

◇ Special order only.

1. See schematic diagrams.

2. "X" dimension of die cast frame jacks may be slightly greater.

3. See Mating Plugs Section.

DIMENSIONS ARE FOR REFERENCE ONLY

Inch  
(mm)

## TT-JAX® (.173") TELEPHONE JACKS BANTAM TYPE®



## SPECIFICATIONS

**Frame:** Plated (steel or zinc diecast).

**Stack Screws:** Steel plated.

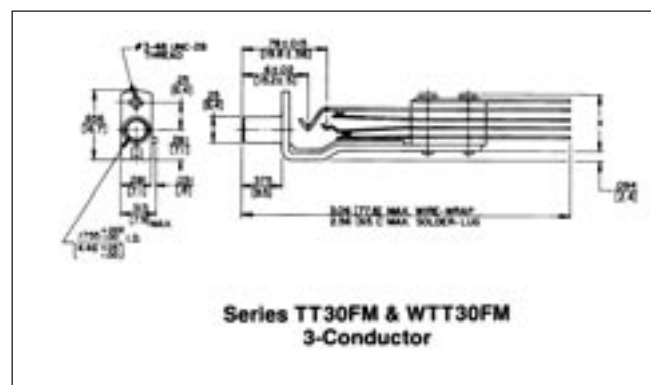
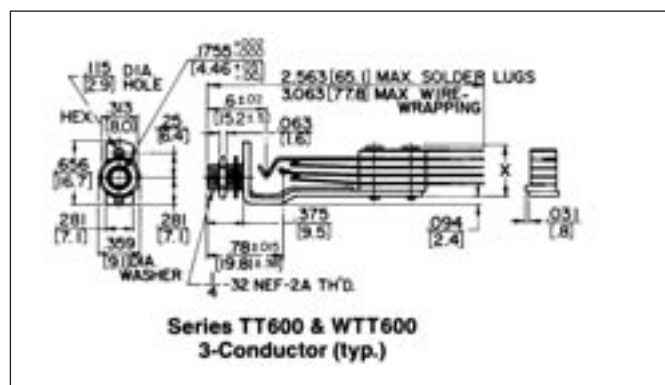
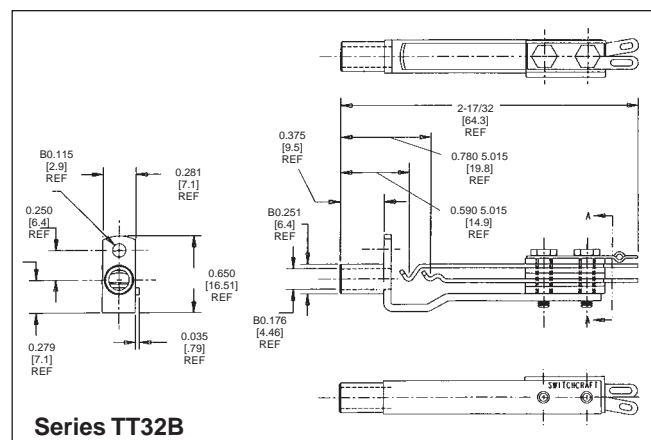
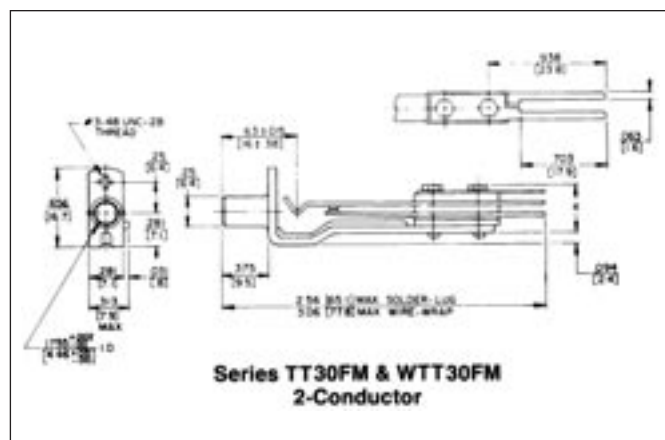
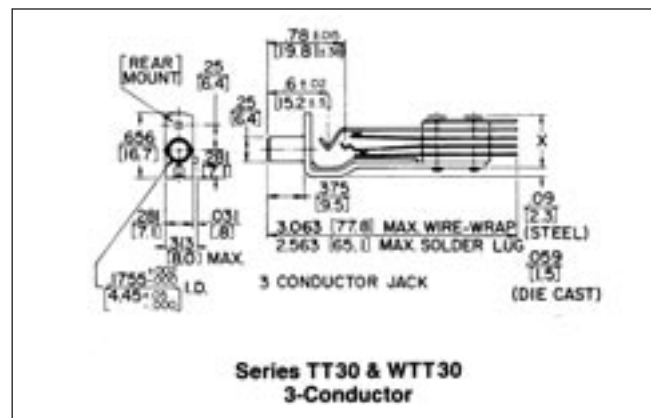
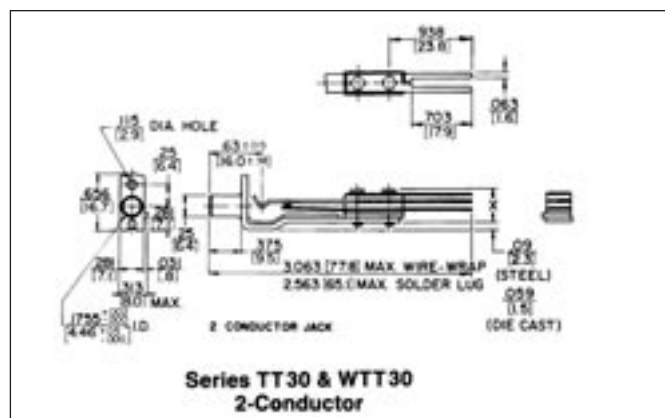
**Bushing:** Plated (brass or steel).

**Tip and Ring Springs:** Copper alloy.

**Contact Spring:** Copper alloy.

**Contacts:** Welded crossbar palladium. Other alloys in various sizes available on special order.

**Insulation:** Rigid plastic with plastic tubing through stack assembly.



DIMENSIONS ARE FOR REFERENCE ONLY Inch  
(mm)

## TT-JAX® (.173") TELEPHONE TWIN JACKS BANTAM TYPE®



## FEATURES

- Steel or die-cast frames. (Special order only).
- Twin, 3-conductor jacks on .312" centers, inter-connected so circuit is opened when a mating plug is inserted in one side of the jack. Palladium welded crossbar contacts are standard in switching circuits.
- Solder lugs or wire-wrapping terminals.
- TT89, TT89C, WTT89 and WTT89DC jacks mount in Series 1700 jack panels.
- TT89FM, TT89FMDC, WTT89FM and WTT89FMDC jacks mount in Series TT59, TT60, TT61 and TT62 jack panels.

## SPECIFICATIONS

**Frame:** Plated (steel or diecast zinc).

**Stack Screws:** Steel-plated.

**Bushing:** Plated (steel or copper alloy).

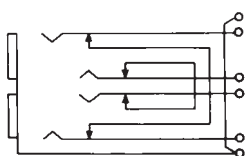
**Tip, Ring and Contact Springs:** Copper alloy.

**Contacts:** Welded crossbar palladium. Other alloys in various sizes available on special order.

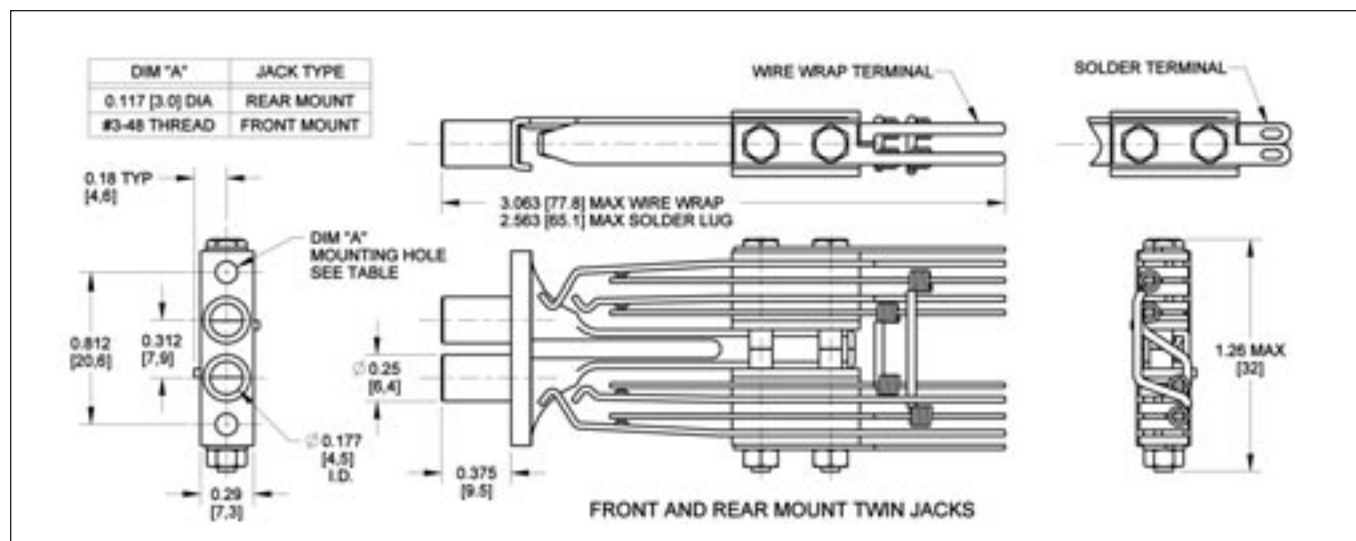
**Insulation:** Rigid plastic with plastic tubing through stack assembly.

**Mounting Hardware:** #3-48 x 1/4" mounting screws, P10834, can be ordered separately for TT89, TT89DC, WTT89 and WTT89DC jacks. Two mounting screws, P25424, are supplied with TT89FM, TT89MDC, WTT89FM and WTT89FMDC jacks.

**NOTE:** Dimensional drawings show panels with steel frame jacks. Overall dimensions for steel or die-cast frame jacks are the same.



TT89  
SCHEMATIC



Solder Lugs		Wire-Wrapping Terminals		Conductors	Typical Mating Plug <sup>1</sup>
Steel	Die Cast	Steel	Die Cast		
TT89	◇TT89DC	WTT89	◇WTT89DC	Twin 3-conductor	TT263
TT89FM	◇TT89FMDC	WTT89FM	◇WTT89FMDC		TT263

1. See Mating Plugs Section.

◇ Special order only

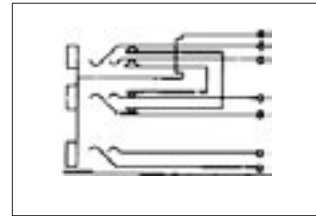
DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

# TT-JAX® (.173") TELEPHONE TRIPLE JACKS BANTAM TYPE®

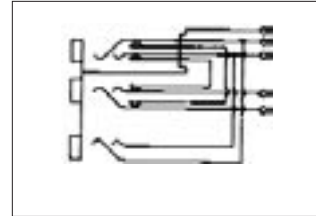


## FEATURES

- Steel or die-cast frames.
- **TT95 Tri-Jax® Jacks:** three, 3-conductor jacks on one frame. Twin jacks, (on .312" centers, LINE & EQUIPMENT functions), have strapped shunts installed. The third jack (MONITOR) is unwired. See TT95 schematic.
- **TT96 Tri-Jax Jacks:** Same as TT95 jacks, except third jack (MONITOR) has tip and ring springs, respectively, jumpered to tip and ring springs of top (LINE) jack.
- Selection of solder lugs or wire-wrapping terminals.
- Palladium welded crossbar contact are standard in switching circuits.
- TT95, TT95DC, WTT95 and WTT95DC jacks mount in Series B1700 jack panels.
- TT95FM, TT95FMDC, TT96FM, TT96FMDC and wire-wrapping versions mount in Series TT53, TT54, TT57 and TT58 jack panels.



TT95 SCHEMATIC



TT96 SCHEMATIC

Solder Lugs		Wire-Wrapping Terminals		Conductors	Schematic	Typical Mating Plug¹
Steel	Die Cast	Steel	Die Cast			
TT95	◊TT95DC	WTT95	◊WTT95DC	3 Plus Twin-3	TT95	TT253 and TT263
TT95FM	◊TT95FMDC	WTT95FM	◊WTT95FMDC		TT95	
TT96FM	◊TT96FMDC	WTT96FM	◊WTT96FMDC		TT96	

◊ Special order only

## SPECIFICATIONS

**Frame:** Plated (steel or diecast)

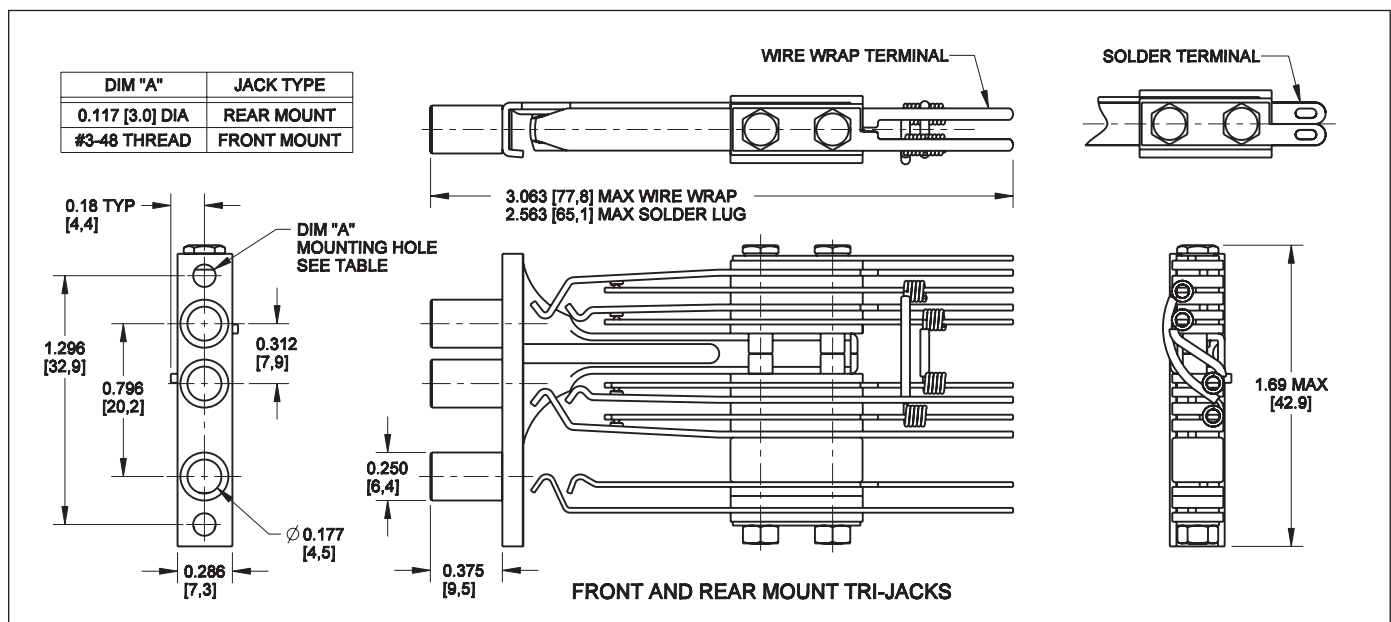
**Stack Screws:** Stainless Steel Plated.

**Bushings:** Plated (steel or copper alloy).

**Contact Springs:** Copper alloy.

**Contacts:** Welded crossbar palladium. Other precious metal alloys in various sizes available on special order.

**Mounting Hardware:** #3-48 x 1/4" mounting screws, P10834, can be ordered separately for rear mount jacks. Two mounting screws, P25424, are supplied with front mount jacks.



DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$



## MINIATURE TELEPHONE JACKS, RIGHT ANGLE, PC MOUNT

RTT34B02  
COVER P286302CLOSE-UP OF  
"Snap-In"  
TERMINALRTT8702  
COVER P286402

Right-angle miniature phone jacks provide low-profile packaging. Single and twin 3-conductor jacks provide plug-jack access to communication circuits for patching and/or testing. Tips and rings are shunted. These jacks mate with Switchcraft miniature TT® plugs and patch cords.

Jacks are designed for right-angle mounting on .062" (1.6 mm) maximum thickness PC boards. Snap-on covers in colors are available and can be installed or removed in the field without special tools. Covers and jacks may be ordered in different colors for color coded circuits.

**SPECIFICATIONS**  
**ELECTRICAL**

**Dielectric Withstanding Voltage:** 500 V AC

**Contact Resistance:** .020  $\Omega$  maximum (initial),  
.030  $\Omega$  maximum (after life test).

**Insulation Resistance:**  $10^{10}$   $\Omega$  at 500 V DC (initial).

**MECHANICAL**

**Shock:** MIL-STD 202 Method 213.

**Vibration:** MIL-STD 202 Method 201.

**Insertion Force:** 7 pounds maximum (31.14 N).

**Withdrawal Force:** 1.5 pounds minimum (6.67 N).

**Life:** 10,000 cycles.

**MATERIALS**

**Housing:** Thermoplastic UL 94V-0.

**Springs:** Copper alloy, plated.

**Contacts:** Gold alloy (WEco #1) crossbar.

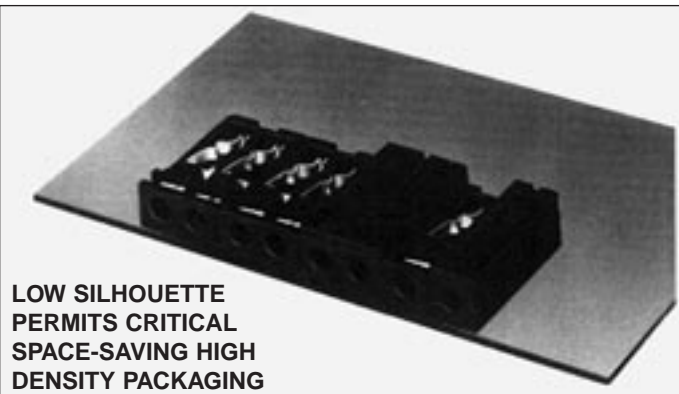
**ENVIRONMENTAL**

**Temperature Limits:** -55°C to +85°C  
(non-operating).

**Thermal Shock:** MIL-STD 202 Method 107.

**Salt Spray:** MIL-STD 202 Method 101.

**Humidity:** MIL-STD 202 Method 106, less  
steps 7A and 7B.

LOW SILHOUETTE  
PERMITS CRITICAL  
SPACE-SAVING HIGH  
DENSITY PACKAGING**ORDERING INFORMATION**

Jack Part No.	Cover Part No.	Color	Schem.	Cond.	Typical Mating Plug <sup>2</sup>
RTT34B01	◇P286301	Red	XII	3	TT-253
RTT34B02	P286302	Black			
RTT34B04	◇P286304	Blue			
RTT34B05	P286305	White			
◇RTT34B07	◇P286307	Orange			
◇RTT34B08	◇P286308	Yellow			
RTT8701	◇P286401	Red	Twin XII	Twin 3	TT-263
RTT8702	P286402	Black			
RTT8704	◇P286404	Blue			
RTT8705	P286405	White			
◇RTT8707	◇P286407	Orange			
◇RTT8708	◇P286408	Yellow			

1. See schematic diagrams on pages 79 and 80.

2. See Mating Plugs Section.

◇ Special order only; contact Switchcraft for price and delivery.

**ORDERING**

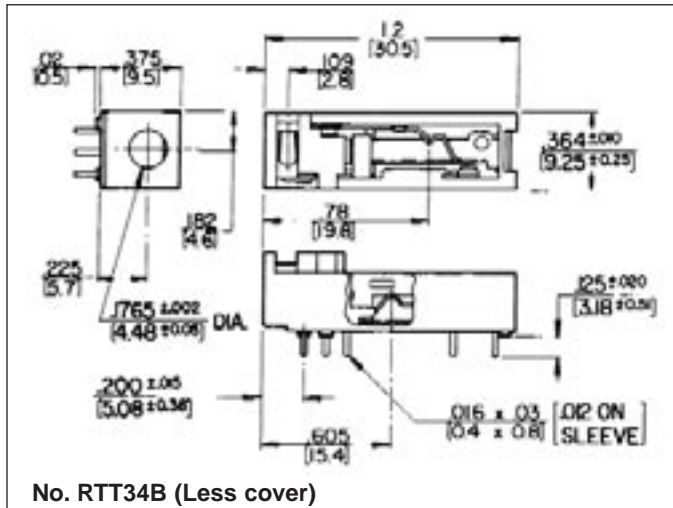
1. Order jacks and covers separately from table.
2. Covers can be ordered assembled on special order.
3. To order RTT jack with cover installed, add the letter C after RTT in part number. Special order only.
4. To order RTT jack with Snap-in terminals, add the letter S to the end of the part number. Special order only.
5. For all special orders items, contact Switchcraft.

**RTT JACK PART NUMBERING SYSTEM**

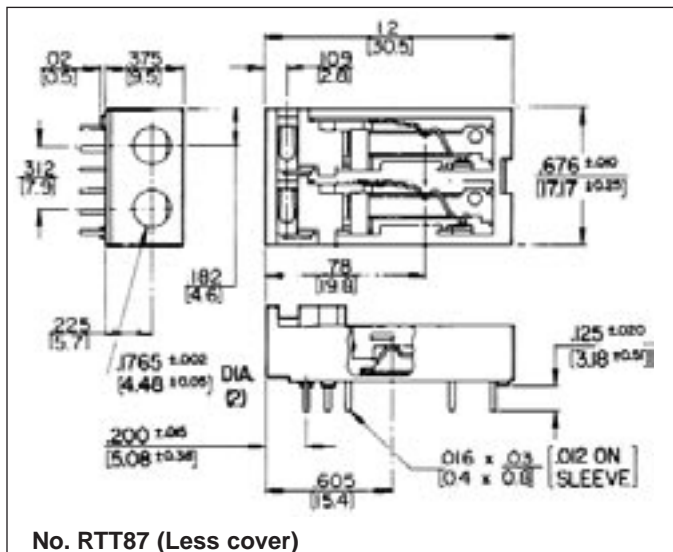
Series	Cover Option	Circuitry	Jack Color
RTT Right Angle TT Jack	Blank- No Cover Standard	34B- XII	01- Red
	C- Cover Supplied	87- Two XII Circuits	02- Black
			04- Blue
			05- White
			07- Orange
			08- Yellow

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

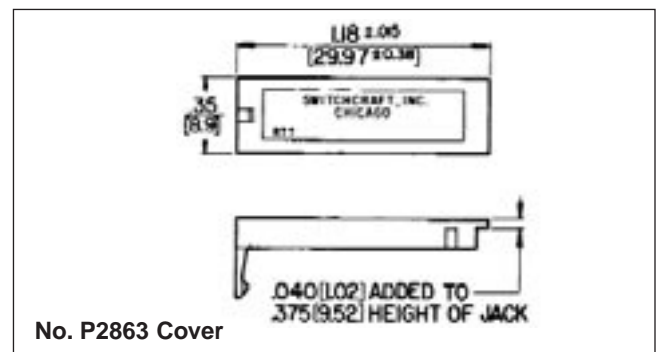
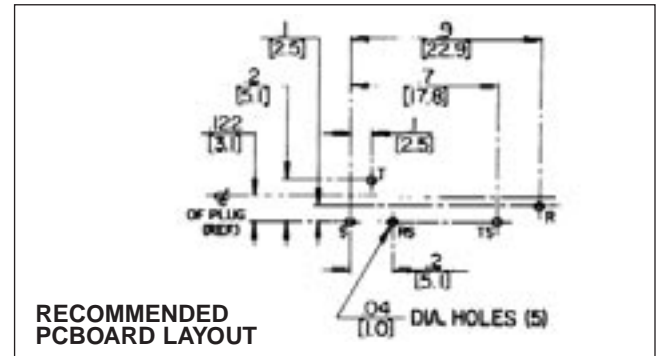
### MINIATURE TELEPHONE JACKS, RIGHT ANGLE, PC MOUNT (continued)



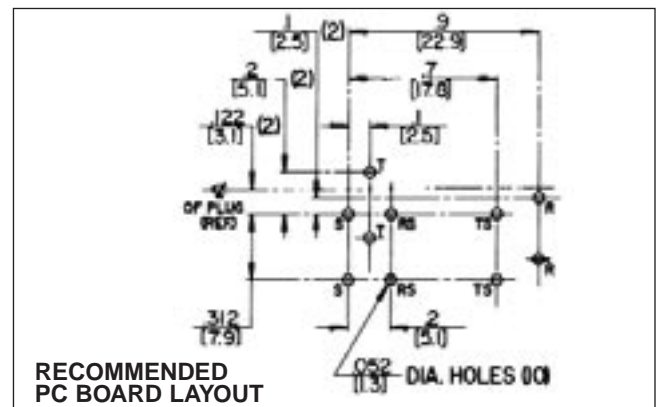
No. RTT34B (Less cover)



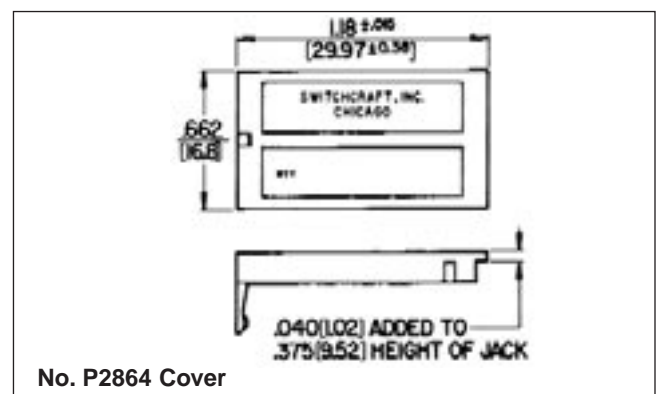
No. RTT87 (Less cover)



No. P2863 Cover



RECOMMENDED PC BOARD LAYOUT



No. P2864 Cover

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## .177" ENCLOSED JACKS

Two- and 3-conductor Unijax® jacks have advanced features of Hi-D Jax® jacks including chassis/panel and PC mounting and .177" bushing that mates with a variety of tini-telephone® plugs and patchcords. Bushing diameter is .281" inside diameter; panel thickness is .125". Mounts in rows or arrays on .469" centers.

### SPECIFICATIONS

#### MECHANICAL

**Insertion/Withdrawal:** 2-conductor, 1.25 pounds nominal, 3 pounds maximum insertion. 3-conductor, 1.5 pounds nominal, 3 pounds maximum insertion. 2-conductor, 3 pounds nominal, 1.5 pounds minimum withdrawal. 3-conductor, 3 pound nominal, 1.5 pounds minimum withdrawal.

**Life:** 10,000 insertion/withdrawal cycles minimum.

#### ELECTRICAL

**Contact Resistance:** .10 ohms maximum.

**Insulation Resistance:** 1,000 MΩ minimum.

**Dielectric Withstanding Voltage:** 500 V AC maximum.

#### MATERIAL

**Housing:** Thermoplastic.

**Mounting Bushing:** Nickel-plated copper alloy.

**Tip and Ring Springs:** Copper alloy, silver-plated.

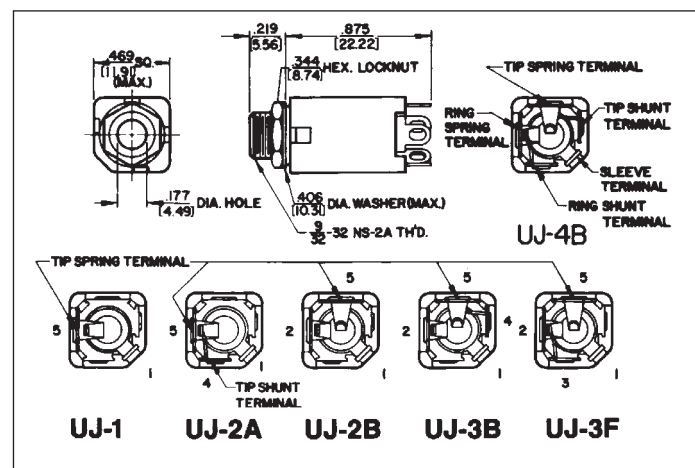
Integral contacts.

**Shunt Springs:** Copper alloy, silver-plated integral contacts.

**Sleeve Terminal:** Steel, tin-plated.

**Hardware:** Supplied with one, Number P2060 nickel-plated copper alloy locknut, and one, Number P2061 nickel-plated copper alloy washer.

UJ4B



### TWO CONDUCTOR PART NUMBERS

Part Number	Description	Jack Schematic <sup>1</sup>	Typical Mating Plug <sup>2</sup>
UJ1	Open circuit	I	TT251
UJ2A	Single closed circuit	III	TT251

### THREE CONDUCTOR PART NUMBERS

UJ2B	Double Open circuit	IV	TT253
UJ4B	Double closed circuit	XII	TT253

1. See jack schematics on pages 79 and 80.

2. See Mating Plugs Section.

DIMENSIONS ARE FOR REFERENCE ONLY

Inch  
(mm)

## 1/4" PHONE JACKS



### LITTEL-JAX® COMMERCIAL PHONE JACKS 2- AND 3-CONDUCTOR

Littel-Jax phone jacks mate with standard commercial phone plugs and are available with .25" and .21" inside diameter bushings.

### MIL LITTEL-JAX® PHONE JACKS 2- AND 3-CONDUCTOR MIL-SPEC, MIL-J-641 (E)

MIL jacks mate with MIL-type phone plugs with .25" (6.35mm) or .21" (5.34mm) diameter bushings. Numbers C11 and C12B have a non-turn locating pin which keys the jack to the mounting surface. For low contact resistance applications, jack number C12A has fine silver contacts on shunts and tip springs.

### MOUNTING

**Chassis/Panel:** See Mounting Data drawing below; smallhole is required only for jacks numbers C11 and C12B with non-turn locating pin.

**Maximum Panel Thickness:** .156" (4mm) for standard .276" (7mm) long bushing; .25" (6.35mm) for .375" (9.5mm) long bushing.

**NOTE:** For panels thicker than .25" see Thick Panel Phone Jax.

**Insulated Mount:** See drawing. S1028 flatwasher and Part Number S1029 shoulder washer must be ordered separately for mounting in .437" diameter hole.

**NOTE:** See Hi-D Jax® for jack specifically designed for insulated mounting without additional washers.

**PC Board Mounting:** See Recommended PC Board Layout drawing below for jacks with PC terminals. Recommended PC board thickness is .062".

**Mounting Centers:** 1.188" (30mm) recommended. Centers may vary with jack selected, for example, Number 11 mounts on .813" (20.6mm) and 14B mounts on 1.125" (28.6mm) minimum centers.

PREFIX OPTIONS	SERIES	CIRCUITRY
Blank- 1/4" Commercial Jack	1-Littel Jax®	1- I
C- Accepts Mill Plug		2A- III
FA- .205" Faston Terminals		2B- IV
FAL- .205" Faston Terminals and .375" Long Bushing		3- V
L- .375" Long Bushing		3A- VI
PC- PC Terminals		3B- VII
S- Accepts .206 Diameter Plugs		3E- IX
		4B- XII

### TWO CONDUCTOR PART NUMBERS

Part Number	Description	Jack Schematic <sup>1</sup>	Typical Mating Plug
11	Open circuit	I	250
C11	MIL Number M641/6-1	I	440
FA11	.205 inch FASTON terminal	I	250
FAL11	.375 inch long bushing .205 FASTON terminal	I	250
L11	.375 inch long bushing	I	250
12A	Tip shunt	III	250
C12A	MIL Number M641/12-1	III	440
L12A	.375 inch long bushing	III	250
PC12A	PC board mount	III	250
13	Isolated "make" circuit	V	250
13A	Transfer circuit	VI	250
13E	Isolated "break" circuit	IX	250

### THREE CONDUCTOR PART NUMBERS

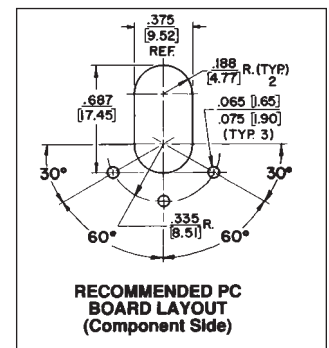
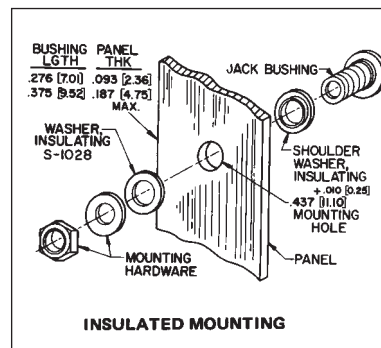
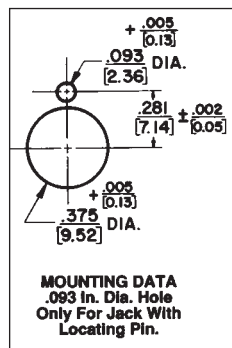
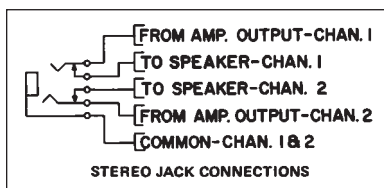
12B	Double open circuit	IV	267
L12B	.375 inch long bushing	IV	267
C12B	MIL number M641/5-1, .250 inch inside diameter	IV	480
13B	Tip shunt	VII	267
14B	Double closed circuit	XII	267

### PART NUMBERS (.210" INSIDE DIAMETER BUSHING)

S11	2 conductor	I	S250
S12A	2 conductor	III	S250
S12B	3 conductor	IV	S267
S13B	3 conductor	VII	S267

1. Refer to jack schematics on pages 79 and 80. Other circuits are available; contact factory.

### STEREO JACK CONNECTIONS



DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$



## 1/4" PHONE JACKS (continued)

LITTEL-JAX® COMMERCIAL PHONE JACKS - 2- AND 3-CONDUCTOR AND  
MIL LITTEL-JAX® PHONE JACKS - 2- AND 3-CONDUCTOR MIL-SPEC, MIL-J-641 (E)

## SPECIFICATIONS

## MECHANICAL

**Life:** Commercial Jacks: 10,000 insertion/withdrawal cycles, minimum. Military Jacks: 20,000 insertions/withdrawals, minimum.

**Mechanical Shock:** Military Jacks: Per MIL-STD 202, method 213, Test Condition H (75g).

**Vibration:** Military Jacks: Per MIL-STD-202, method 213, (10-55 Hz).

**Insertion/Withdrawal Forces:** (see charts below)

## COMMERCIAL JACKS

Plug Diameter (inches)	.210	.250
Insertion (maximum)	7 lb.	7 lb.
Withdrawal (minimum)	1 lb.	1 lb.

## MILITARY JACKS

Part Number	C11	C12A	C12B
Insertion (maximum)	6 lb.	7 lb.	6 lb.
Withdrawal (minimum)	2 lb.	3 lb.	1.5 lb.
Withdrawal (maximum)	7 lb.	7 lb.	5 lb.

## ELECTRICAL

**Contact Resistance:** Commercial Jacks - .030 ohms maximum (initial), .050 ohms maximum (after humidity, durability exposure). Per MIL-STD-202E. Military Jacks - .010 ohms maximum (initial), .020 ohms maximum (after life), .10 ohms maximum (after salt spray).

**Insulation Resistance:** Commercial Jacks - 10,000 MΩ minimum (initial), 1,000 MΩ minimum (after humidity). Military Jacks - 10,000 MΩ minimum (initial), 1,000 MΩ minimum (after humidity, durability exposure).

**Dielectric Withstanding Voltage:** 500 V, 60 Hz (rms) AC.

**Contact Rating:** 1 A, 25 V DC.

## ENVIRONMENTAL

**Thermal Range:** Commercial Jacks; -55°C to +85°C (non-operating); -20°C to +65°C (operating). Military Jacks; -55°C to +85°C (non-operating); -40°C to +65°C (operating).

**Thermal Shock:** Commercial Jacks - Per MIL-STD 202, method 107. Military Jacks - Per MIL-STD 202, method 107.

**Humidity:** Commercial Jacks - Per MIL-STD 202, method 106. Military Jacks - 0% to 95% operating and non-operating.

**Salt Spray:** Commercial Jacks - Per MIL-STD 202, method 101. Military Jacks - Per MIL-STD 202, method 101 (48 hours).

**Moisture Resistance:** Military Jacks - Per MIL-STD 202, method 106 (240 hours).

## MATERIAL

**Mounting Bushing:** Nickel-plated copper alloy.

**Insulation:** Rigid plastic.

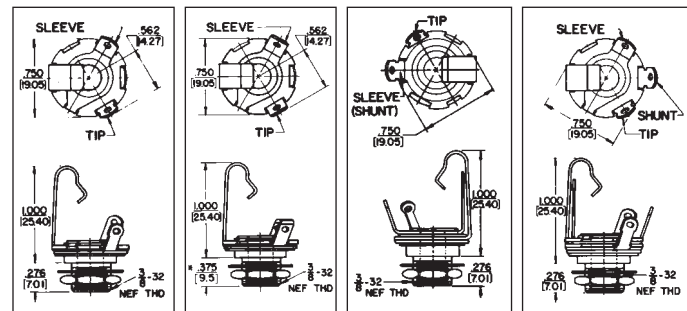
**Springs:** Special copper alloy. Integral contacts are standard in the isolated switching circuits; fine silver contacts in C12A switching circuit.

**Sleeve Terminal:** Copper alloy.

**Hardware:** Supplied with one Number P10001 copper alloy nickel-plated hex nut, and one Number 51022 steel nickel-plated washer - except copper alloy nickel-plated washer Number S10451 supplied on C11, C12A and C12B.

\*Commercial jacks feature integral contacts. Integral contacts should not be used where low contact resistance is a requirement.

## Littel Jax® Jacks

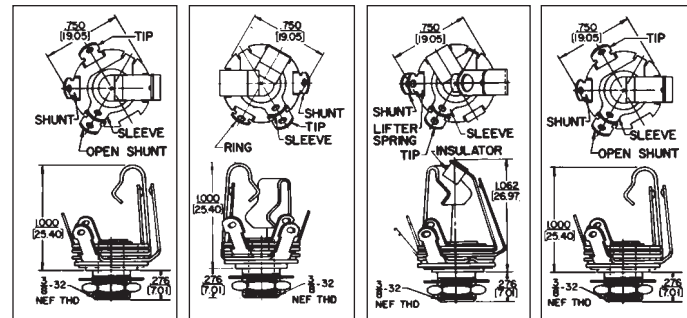


11, L-11, C-11, S-11  
\*.276" for No. FA-11

FA-11, FAL-11  
S-12A, SC-12A

12 12-A, L-12A  
S-12A, SC-12A

12A, L-12A

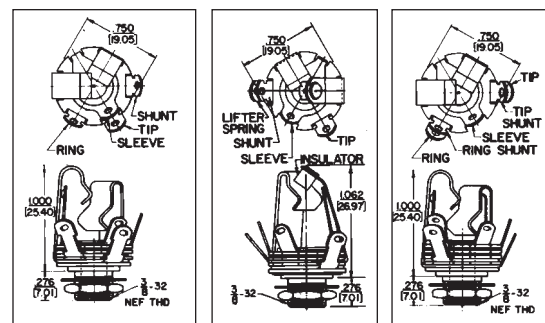


PC-12A

12B, C12B  
S-12B, SC-12B

13

13A



13B, S-13B

13E

14B

DIMENSIONS ARE FOR REFERENCE ONLY

Inch  
(mm)

## 1/4" ENCLOSED TELEPHONE JACKS



Series M11\*



Series MNS11\*



Series MS11\*



Series MN11\*

Compactly constructed jacks permit direct cross-patching with Switchcraft, WEco and MIL-type telephone plugs and patch cords. Series M Hi-D Jax® offer a choice of solder lugs or PC terminals. Both insulated and metal bushings can be specified, as well as .21" inside diameter sleeves for narrow plug fingers. Maximum contact resistance is .1 ohm. Springs are made of a special gold-plated copper alloy. Welded cross bar gold alloy contacts are available on special order.

**SERIES M-11\* HI-D JAX®**

Two- and 3-conductor type mate with .25" diameter finger plugs. Tip and ring springs are gold-plated. Shunts (if used) have welded crossbar palladium contacts. Ring springs (where used with shunts) have welded crossbar palladium contacts. Tip springs (when used) do not have a contact welded to the spring. Bushing has 3/8-32-NEF-2 thread; locknut and flat washer for mounting are supplied.

**SERIES MN-11\* HI-D JAX®**

Same as Series M-11\* except threaded bushing is molded thermoplastic for insulated mounting. Continuous sleeve contact assures positive sleeve connection without exposed metal on front of panel.

**SERIES M113 AND M114 HI-D JAX®**

The versatile 3-conductor M113 and M114 feature springs which accept a wide variety of 1/4" plug designs. Self-aligning PC terminals allow for easier insertion into a printed circuit board. Also feature a metric thread mounting.

**SPECIFICATIONS****MATERIALS**

**Mounting Bushing:** Series M11\*, MS11\* - Nickel-plated copper alloy. Series MN11\*, MNS11\* - Molded thermoplastic.

**Housing:** Molded thermoplastic, UL 94V-0.

**Springs:** Copper alloy.

**Contacts (mil-type):** Tip and Ring Springs are gold-plated. Shuntsprings (where used) are welded crossbar palladium. Welded crossbar gold alloy contacts are available on special order.

**Contacts (commercial):** Tin-plated integral contacts.

**Sleeve Terminal:** Steel, tin-plated.

**Hardware:** Supplied with one **P10001** copper alloy, nickel-plated locknut and one **S10221** steel, nickel-plated washer.

**MECHANICAL**

**Life:** 10,000 insertion/withdrawal cycles, minimum.

**Insertion/Withdrawal Forces:** Nominal plug retention on 2-conductor jack is .75 pounds with .5 pounds minimum. Nominal plug retention on 3-conductor jack is 2 pounds with 1.5 pounds minimum. With double tips, the nominal is 1.5 pounds and 1 pound minimum.

**Maximum Recommended Mounting Torque:** 6" -lb. for thermoplastic bushing.

**Mounting Torque (for Spring Lock PC Terminal):** 8" -pound for thermoplastic bushings.

**ELECTRICAL**

**Contact Resistance:** .020 ohms maximum (initial), .050 ohms maximum (after humidity, durability exposure). Per MIL-STD-202E.

**Insulation Resistance:** 10,000 MΩ minimum (initial), 1,000 MΩ minimum (after humidity).

**Dielectric Withstanding Voltage:** 500 V, 60 Hz (rms) AC.

**Contact Rating:** 0.25, 48 VDC make and break, 3A carry only.

**ENVIRONMENTAL**

**Thermal Range:** -55°C to +85°C (non-operating); -20°C to +65°C (operating).

**Thermal Shock:** Per MIL-STD 202, method 107.

**Humidity:** Per MIL-STD 202, method 106.

**Salt Spray:** Per MIL-STD 202, method 101.

DIMENSIONS ARE FOR REFERENCE ONLY Inch  
(mm)

## 1/4" ENCLOSED TELEPHONE JACKS (CONTINUED)

**SERIES MS11\* HI-D JAX®**

3-conductor with .21" inside diameter sleeve. Mates with plugs having .206" diameter finger. Protects against accidental insertion of .25" diameter finger plugs. Gold-plated tip and ring springs. Welded crossbar palladium contacts on shunt springs standard. Bushing has 3/8-32-NEF-2 thread; locknut and flat washer for mounting are supplied.

**◇SERIES MNS11\* HI-D JAX®**

Same as Series MS11\* except bushing is molded thermoplastic.

**◇TWIN M11\* HI-D JAX®**

Two Series M11\* Hi-D Jax strapped on .625" centers. Mates with Switchcraft® Twin Plugs. 411, 412 and 413. MIL-type Littell-Plug® phone plugs, 420, 430 and 440 (2-conductor) and 482 and 483 (3-conductor) are also recommended for mating with this series.

**ORDERING INFORMATION**

Order by part number from table.

2-CONDUCTOR				
Part Number Solder Lugs	Part Number PC Terms	Description	Sche- matic**	Typical Mating Plug*
M111	—	.25" I.D. sleeve, metal bushing.	I	420
MN111	—	.25" I.D. sleeve, molded thermoplastic bushing.		
◇M112A	◇M112APC	.25" I.D. sleeve, metal bushing.	III	
MN112A	◇MN112APC	.25" I.D. sleeve, molded thermoplastic bushing.		
M113E	—	.25" I.D. sleeve, metal bushing.	IX	
MN113E	—	.25" I.D. sleeve, molded thermoplastic bushing.		

◇ Special Order only; contact Switchcraft.

\* Other mating plugs are contained in this plug section.

\*\* See pages 79 and 80.

3-CONDUCTOR				
Part Number Solder Lugs	Part Number PC Terms	Description	Sche- matic¹	Typical Mating Plug²
M112B	M112BPC	.25" inch I.D. sleeve, metal bushing.	IV	482
ML112B	—	.25" inch I.D. sleeve, .375 inch long metal bushing.		
MN112B	MN112BPC	.25 inch I.D. sleeve, molded thermoplastic bushing.		
MNL112B	—	.25 inch I.D. sleeve, .375 inch long metal bushing.		
M113B	—	.25 inch I.D. sleeve, metal bushing.	VII	482
MN113B	MN113BPC	.25 inch I.D. sleeve, molded thermoplastic bushing.		
	M113BPC1M	.25 inch I.D. sleeve, molded thermoplastic bushing, metric hardware		482

3-CONDUCTOR				
Part Number	Part Number	Description	Sche- matic¹	Typical Mating Plug²
Solder Lugs	PC Terms			
MNL113B	—	.25 inch I.D. sleeve, .375 inch long metal bushing.	VII	482
M114B	M114BPC	.25 inch I.D. sleeve, metal bushing.		XII
	M114BPC1M	.25 inch I.D. sleeve, metal bushing, metric hardware.		
MN114B	MN114BPC	.25 inch I.D. sleeve, molded thermoplastic bushing.		480, 484

◇ Special order only; contact Switchcraft for price and delivery.

¹ See schematics, pages 79 and 80.

² Number(s) specified are not necessarily the only mating plug(s).

See Plugs Section.

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

### 1/4" ENCLOSED PHONE JACKS (continued)

#### HI-D® JAX 2- AND 3-CONDUCTOR



SERIES 11\*

PC TERMINAL VIEW

SERIES N11\*

Hi-D Jax® 2- and 3-conductor enclosed phone jacks are ideal for panel/chassis and PC board mounting. Unitized molded housing protects springs, provides mechanical and electrical reliability, minimizes leakage and provides low capacity between springs. Mounts on .625" minimum centers in rows or arrays. .25" or .21" inside diameter bushing types, metal or thermoplastic bushings (for insulated mounting). Insulated Hi-D Jax® jacks are specifically designed for in-circuit (insulated) mounting from mounting surface and have fully protected enclosed internal sleeve feature. Solder lugs or PC terminals may be selected.

#### MOUNTING

Jacks mount in a single .375" diameter hole on .625" minimum centers. Series 11\*, N11\*, NS11\* and S11\* mount in panels up to .156" thick. Series L11\* and NL11\* (long bushing) mount in panels up to .25" thick. Jacks with PC terminals mount on PC boards up to .094" thick. Formed "shoulders" on each terminal provide stable stand-off mount. Threaded bushing permits mechanical connection to equipment panel. Mounting hardware is supplied. Also available is a grounding spur bushing, which allows for positive grounding of the bushing to the chassis. Contact factory for details.

**SERIES 11\*** - 2- and 3-conductor types, threaded metal bushing .276" long. .25" inside diameter bushings.

**SERIES L11\*** - Same as Series 11\*, except bushing is .375" long for mounting in panels up to .25" thick.

**SERIES N11\*** - Same as Series 11\*, except bushing is molded thermoplastic for insulated mounting.

**SERIES NL11\*** - Same as Series N11\*, except bushing is .375" long for insulated mounting in panels up to .25" thick.

**SERIES S11\*** - Same as Series 11\*, except bushing has .21" inside diameter. Smaller diameter protects against accidental insertion of plugs with .25" diameter fingers.

◇ **SERIES NS11\*** - (SPECIAL ORDER ONLY) - Same as Series N11\*, except bushing is .21" inside diameter.

**113BPC1M AND 114BPC1M** - Versatile, 3-conductor 113BPC1M and 114BPC1M feature springs which accept a wide variety of 1/4" plug designs. Self-aligning PC terminals allow for easier insertion into a printed circuit board. Also feature a metric thread mounting.

#### TWO CONDUCTOR PART NUMBERS

Solder Lug Part Number	PC Terminals Part Number	Description	Jack Schematic <sup>1</sup>	Typical Mating Plug <sup>2</sup>
111	111PC	Open circuit	I	250
N111	N111PC	Insulated bushing	I	250
NL111	-	.375" long insulated bushing	I	250
112A	112APC	Single closed circuit	III	250
L112A	◇L112APC	.375" long bushing	III	250
N112A	N112APC	Insulated bushing	III	250
NL112A	-	.375" long insulated bushing	III	250
113	113PC	Isolated "make" circuit	V	250
N113	-	Insulated bushing	V	250
◇113D	◇113DPC	Transfer circuit (1-C)	VI <sup>3</sup>	250
113E	113EPC	Isolated "break" circuit	IX	250

#### THREE CONDUCTOR PART NUMBERS

112B	112BPC	Double open circuit	IV	267
L112B	-	.375" long bushing	IV	267
N112B	N112BPC	Insulated bushing	IV	267
NL112B	-	.375" long bushing	IV	267
-	S112BPC	.210" inside diameter bushing	IV	S-267
113B	113BPC	Single closed circuit	VII	267
-	113BPC1M	Single closed circuit	VII	-
L113B	-	.375" long bushing	VII	267
N113B	N113BPC	Insulated bushing	VII	267
NL113B	-	.375" long bushing	VII	267
113F	113FPC	Ring circuit closed	XXVIII	267
114B	114BPC	Double closed circuit	XII	267
-	114BPC1M	Double closed circuit	XII	-
L114B	◇L114BPC	.375" long bushing	XII	267
N114B	N114BPC	Insulated bushing	XII	267
NL114B	NL114BPC	.375" long bushing	XII	267

1 Other circuits available; contact factory. Schematics pages 79 and 80.

2 See Plug Section for other options.

3 Two tip springs.

◇ Special order only. Contact Switchcraft.

**SPECIFYING NOTE:** Unless otherwise shown in "Description", jacks have .276" long threaded bushings with .25" inside diameter.

#### SPECIFICATIONS

##### MATERIAL

**Mounting Bushing:** Series 11\*, L11\*, S11\* - Nickel-plated copper alloy.

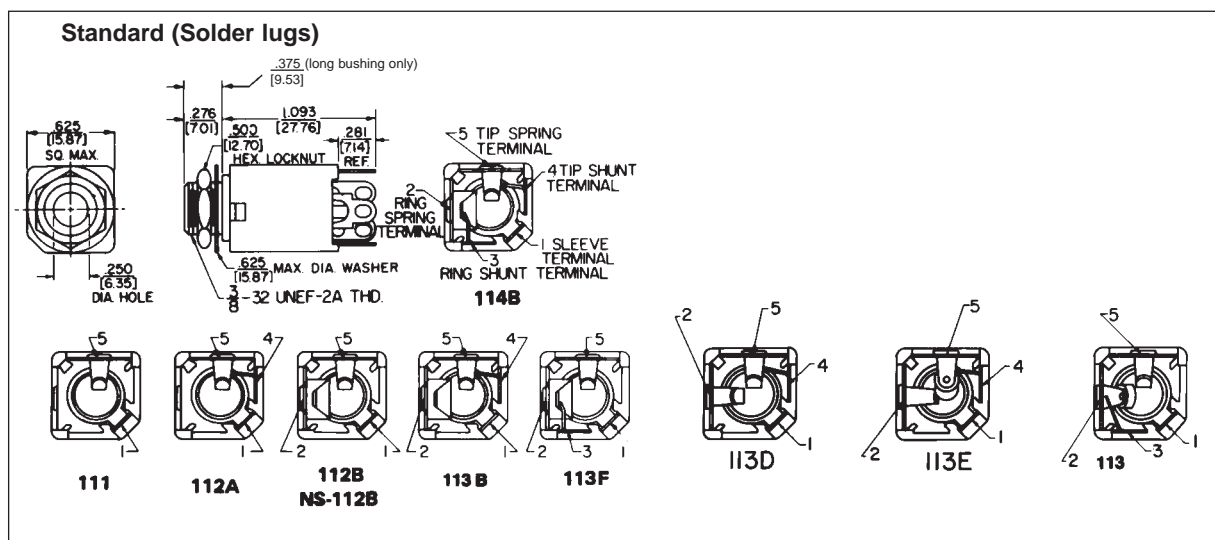
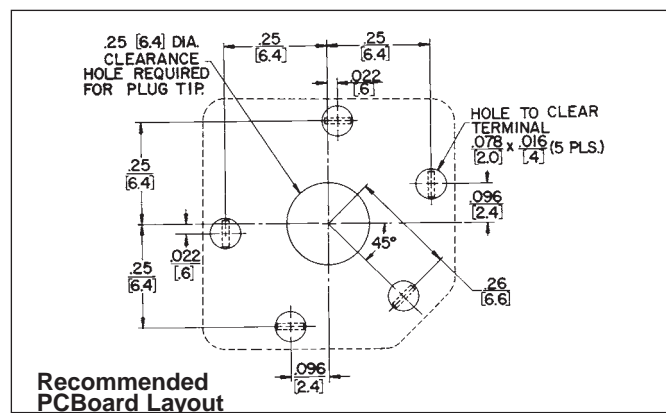
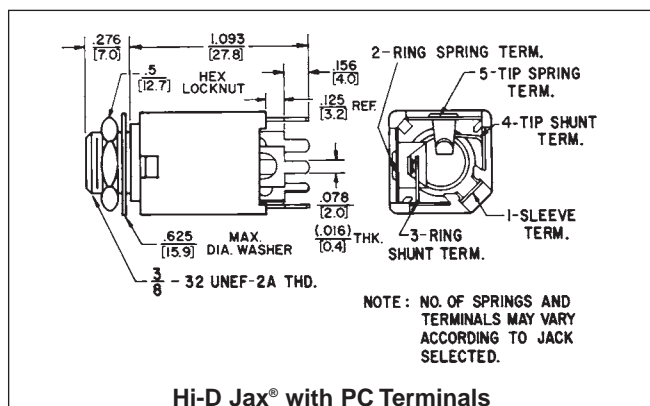
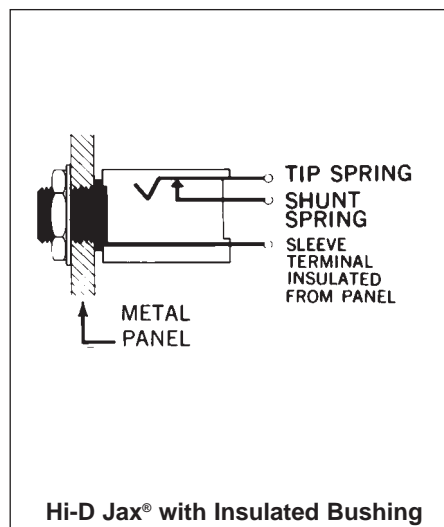
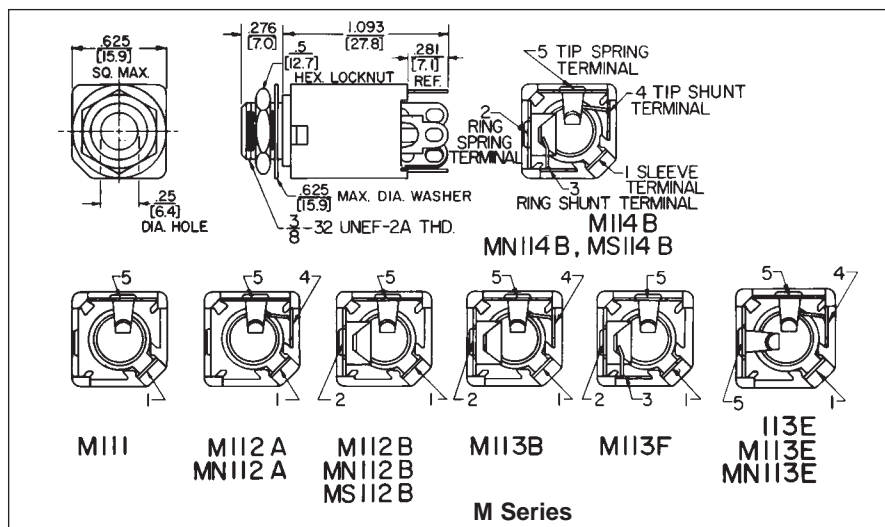
Series N11\*, NL11\*, NS11\* - Molded thermoplastic over nickel-plated copper alloy sleeve.

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$



## 1/4" ENCLOSED PHONE JACKS (continued)

## HI-D JAX® 2- AND 3-CONDUCTOR

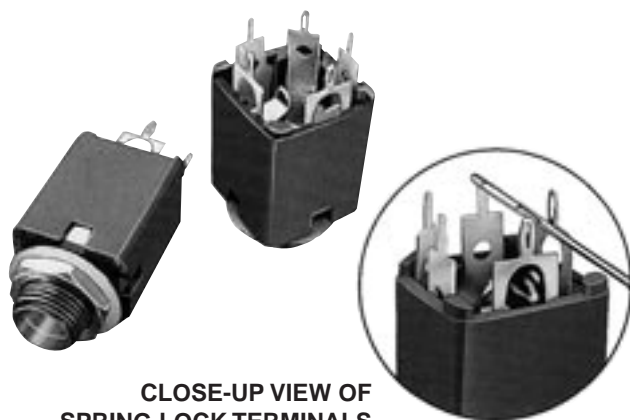


DIMENSIONS ARE FOR REFERENCE ONLY

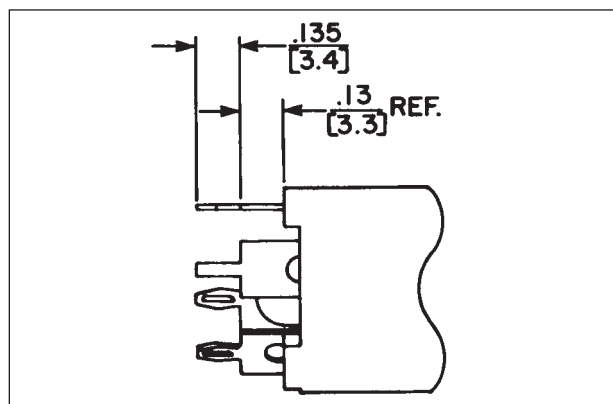
Inch  
(mm)

### SPRING LOCK PC TERMINALS FOR HI-D JAX®

#### HI-D JAX® SHOWING SPRING LOCK PC TERMINALS

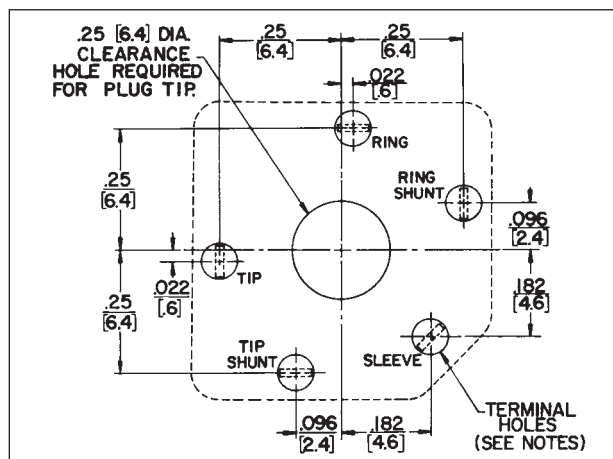


CLOSE-UP VIEW OF  
SPRING LOCK TERMINALS



PARTIAL VIEW SHOWING SPRING LOCK TERMINALS

Tip, ring and sleeve terminals are spring lock type.



RECOMMENDED PC BOARD LAYOUT SPRING LOCK  
TERMINALS (COMPONENT SIDE)

NOTES:

1. SERIES 110PCS—ALL HOLES TO CLEAR .078" X .016" TERMINAL.
2. SERIES 110PCS—TIP, RING & SLEEVE HOLES TO BE .055" DIA. RING SHUNT & TIP SHUNT HOLES TO CLEAR .078" X .016" TERMINAL.

Hi-D Jax® enclosed 1/4" phone jacks offer spring lock PC terminals which close during insertion into PC board. Upon completed insertion, the terminals reopen to securely hold the jack to the PC board during soldering. Solder "fills" the terminals which provides an additional security from loosening. The spring lock terminal is available on all Hi-D Jax® which currently offer PC terminals.

**NOTE:** Tip and ground terminals can be specified with spring lock terminals (also ring terminal on 3-conductor jacks).

#### MOUNTING

Jacks mount in a single .375" diameter hole on .625" minimum centers. Series 11\*, N11\* and S11\* mount in panels up to .156" thick. Series NL11\* (long bushing) mount in panels up to .250" thick. Jacks with PC terminals mount on PC boards up to .094" thick. Spring lock PC terminals hold jack securely to PC board. Threaded bushing permits mechanical connection to equipment panel. Mounting hardware is supplied. See "RECOMMENDED PC BOARD LAYOUT" for further details.

**SERIES 11\*** - 2- and 3-conductor types, threaded metal bushing .276" long. .250 inch inside diameter bushings.

**SERIES N11\*** - Same as Series 11\* except bushing is molded thermoplastic for insulated mounting.

**SERIES NL-11\*** - Same as Series N11\* except bushing is .375" long for insulated mounting in panels up to .250" thick.

**SERIES S11\*** - Same as Series 11\* except bushing has .210" inside diameter Smaller diameter protects against accidental insertion of plugs with .250" diameter fingers.

#### SPECIFICATIONS

##### MATERIAL

**Mounting Bushing:** Series 11\*, S11\*: Nickel-plated copper alloy. Series N11\*, NL11\*: Molded thermoplastic over plated copper alloy sleeve.

#### ORDERING INFORMATION

TWO CONDUCTOR PART NUMBERS			
Part Number	Description	Jack Schematic	Typical Mating Plug <sup>1</sup>
◇111PCS	Open circuit	I	250
◇N111PCS	Insulated bushing	I	250
◇112APCS	Single closed circuit	III	250
◇N112APCS	Insulated bushing	III	250
113PCS	Isolated "make" circuit	V	250
◇113EPCS	Isolated "break" circuit	IX	250
THREE CONDUCTOR PART NUMBERS			
◇112BPCS	Double open circuit	IV	267
◇N112BPCS	Insulated bushing	IV	267
◇S112BPCS	.210" I.D. bushing	IV	S267
◇113BPCS	Single closed circuit	VII	267
◇N113BPCS	Insulated bushing	VII	267
113FPCS	Ring closed circuit	XXVIII	267
◇114BPCS	Double closed circuit	XII	267
◇N114BPCS	Insulated bushing	XII	267
◇NL114BPCS	.375" long bushing	XII	267

<sup>1</sup> See Jack Section for other mating plugs.

◇ Special order only. Contact Switchcraft.

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## 1/4" RIGHT-ANGLE PHONE JACKS

## SERIES SN37, SN49 AND SN70



SN37A14B with cover Number P2993



SN49B12B with cover Number P2994



SN49A12B



SN49C12B



SN70B12A



SN70C14B

These low-profile phone jacks have "snap-in" PC mounting, right-angle plug insertion and available with 2- and 3-conductor circuits and plastic or metal bushings. Ideal for telecommunications, data processing and other high quality audio connecting applications.

**SERIES SN37A** - Right-angle PC mount phone jack with molded plastic housing. Only .375" high, this jack features a plain (non-threaded) bushing and accepts commercial standard phone plugs with .25" diameter finger.

**Jack circuit selection:**

2-conductor • Single open circuit • Shunted tip  
3-conductor • Double open circuit • Shunted tip and ring

Jack housing snaps into PC boards (.062" thick) and features molded tension fingers to provide stable mount. Location pin polarizes mounting for correct insertion every time. Clearance between housing facilitates board cleaning without disturbing internal springs. SN37 without tension fingers available on special order.

Molded housing protects internal parts and allows high density packaging. Supplied with "Snap-On" cover.

**SERIES SN49A** - Similar to Series SN37A, except .492" high and insulated/plain (non-threaded) bushing. "Snap-On" cover available on special order only.

**SERIES SN49B** - Similar to Series SN37A, except .492" high and insulated threaded bushing. Washer and hex nut for bushing mount supplied. "Snap-On" cover available on special order only.

**SERIES SN49C** - Similar to Series SN37A, except .492" high and threaded metal bushing. Washer and hex nut for bushing mount supplied. "Snap-On" cover available on special order only.

**SERIES SN70B** - This series features threaded/insulated bushing and .708" in height. Circuit selection and housing features are same as Series SN49B. "Snap-On" cover not available.

**SERIES SN70C** - Same as Series SN70B, except bushing is threaded metal type.

**SPECIFICATIONS****MECHANICAL**

**Shock:** Per MIL-STD-202, method 213.

**Vibration:** Per MIL-STD-202, method 201.

**Insertion Force:** 8 pounds maximum.

**Withdrawal Force:** 1.5 pounds minimum.

**Life:** 10,000 cycles minimum.

**ELECTRICAL**

**Insulation Resistance:** 2 x 10<sup>6</sup> MΩ at 500 V DC per MIL-STD-202, method 302 (initial).

**Dielectric Withstanding Voltage:** 500 V AC.

**ENVIRONMENTAL**

**Thermal Range:** -55°C (-67°F) to +85°C (+185°F) Non operating. -20°C to +65°C Operating.

**Thermal Shock:** Per MIL-STD-202d, method 107.

**Humidity:** Per MIL-STD-202, method 106, less steps 7A and 7B.

**Salt Spray:** Per MIL-STD-202, method 101.

**MATERIAL**

**Housing and Cover:** Black thermoplastic, UL 94V-O.

**Contact Springs:** Copper alloy with tin-plated terminals.

**Hardware:** Nickel-plated copper alloy.

**Metal Bushing:** Nickel-plated copper alloy.

**ORDERING**

1. Order jacks from tables on page 103.
2. For all special order items, contact Switchcraft.



DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## 1/4" RIGHT-ANGLE PHONE JACKS (continued)

## SERIES - RA and RN



Series RN110



Series RA

**SERIES RA** - 2- and 3-conductor RA Jax® are designed with split terminals which provide two distinct advantages over contemporary jacks:

1. Positive retention of jack in PC board during wave soldering.
2. Split terminal permits additional solder flow paths up the terminal for better mechanical/electrical connection

Tip spring design facilitates positive retention of differing mating plug tip shapes (industry standard and others).

**SERIES RN** - Right-angle Hi-D Jax® permits space-saving mounting on PC boards. Available in 2- and 3-conductor types with or without shunt circuits, which can mate with .25" diameter COMMERCIAL or TELEPHONE/MIL plug fingers. Right-angle jack permits tip of mating plug to be inserted parallel with PC board. Can be mounted on PC boards or combined PC board and panel/chassis.

Mounted through .375" diameter holes (locknut and washer supplied) in panels and chassis up to .141" thick. Minimum mounting centers are .625". If insulated mount is desired, mounting with flat, non-conductive washer (not supplied) is recommended.

PC terminals mount on boards up to .125" thick, and hand dip or wave soldering, is recommended. Three separate standoffs fit through board to provide stable mounting. Threaded bushing permits optional fastening to panel or chassis.

**SERIES RN110** - 2- and 3-conductor right-angle types mount in PC boards or panel/chassis. Bushing is .278" long.

## SPECIFICATIONS

**Housing:** Thermoplastic.

**Bushing:** Integral with housing.

**Springs:** Copper alloy, silver-plated (also available with selectively gold-plated contact points and selectively tin-plated terminals).

**Contacts:** Integral, part of shunt springs.

**NOTE:** Specifications for Mechanical, Electrical and Environmental are the same for Hi-D® Jax. (page 98)

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$



## 1/4" RIGHT-ANGLE PHONE JACKS (continued)

## ORDERING INFORMATION

SERIES SN Part Numbers	Description	Jack <sup>2</sup> Schematic	Typical Mating Plug <sup>3</sup>
SN37A11 <sup>1</sup>	2-cond., open circuit	I	250
SN37A12A <sup>1</sup>	2-cond., single closed circuit	III	
SN37A12B <sup>1</sup>	3-cond., double open circuit	IV	267
SN37A14B <sup>1</sup>	3-cond., double closed circuit	XII	
SN49A11 <sup>1</sup>	2-cond., open circuit	I	250
SN49A12A <sup>1</sup>	2-cond., single closed circuit	III	
SN49A12B <sup>1</sup>	3-cond., double open circuit	IV	267
SN49A14B <sup>1</sup>	3-cond., double closed circuit	XII	
SN49B11 <sup>1</sup>	2-cond., open circuit	I	250
SN49B12A <sup>1</sup>	2-cond., single closed circuit	III	
SN49B12B <sup>1</sup>	3-cond., double open circuit	IV	267
SN49B14B <sup>1</sup>	3-cond., double closed circuit	XII	
SN49C11	2-cond., open circuit	I	250
SN49C12A	2-cond., single closed circuit	III	
SN49C12B	3-cond., double open circuit	IV	267
SN49C14B	3-cond., double closed circuit	XII	
SN70B11	2-cond., open circuit	I	250
SN70B12A	2-cond., single closed circuit	III	
SN70B12B	3-cond., double open circuit	IV	267
SN70B14B	3-cond., double closed circuit	XII	
SN70C11	2-cond., open circuit	I	250
SN70C12A	2-cond., single closed circuit	III	
SN70C12B	3-cond., double open circuit	IV	267
SN70C14B	3-cond., double closed circuit	XII	

<sup>1</sup> Series SN37A supplied with Part Number P2993 cover. Series SN49A and SN49B can be supplied with Part Number P2994 cover on special order. Contact Switchcraft.

## ORDERING INFORMATION

SERIES RA Part Numbers	Description	Jack <sup>2</sup> Schematic	Typical Mating Plug <sup>3</sup>
RA49B11	2-cond., open circuit	I	250
RA49B12A	2-cond., single closed circuit	III	
RA49B12B	3-cond., double open circuit	IV	267
RA49B14B	3-cond., double closed circuit	XII	
RA49C11	2-cond., open circuit	I	250
RA49C12A	2-cond., single closed circuit	III	
RA49C12B	3-cond., double open circuit	IV	267
RA49C14B	3-cond., double closed circuit	XII	
RA70B11	2-cond., open circuit	I	250
RA70B12A	2-cond., single closed circuit	III	
RA70B12B	3-cond., double open circuit	IV	267
RA70B14B	3-cond., double closed circuit	XII	
RA70C11	2-cond., open circuit	I	250
RA70C12A	2-cond., single closed circuit	III	
RA70C12B	3-cond., double open circuit	IV	267
RA70C14B	3-cond., double closed circuit	XII	
SERIES RN Part Numbers			
RN111PC	2-cond., single open circuit	I	250
RN112APC	2-cond., single closed circuit	III	250
RN112BPC	3-cond., double open circuit	IV	267
RN113BPC	3-cond., tip closed, ring open	VII	267
◇RN113FPC	3-cond., tip open, ring closed	XXVIII	267
RN114BPC	3-cond., double closed circuit	XII	267

<sup>2</sup> See pages 79 and 80.

<sup>3</sup> Other mating plugs are available.

◇ Special order only. Contact Switchcraft.

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

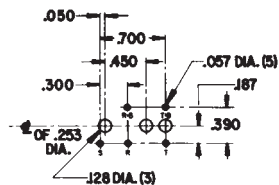
## 1/4" RIGHT-ANGLE PHONE JACKS (continued)

## SERIES SN

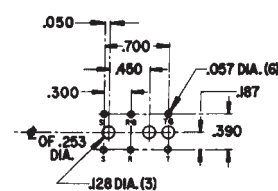
## JACK SCHEMATICS



<p><b>SERIES SN37A</b></p>	<p><b>SERIES SN49A</b></p>	<p><b>SERIES SN49B</b></p>
<p><b>SERIES SN49C</b></p>	<p><b>SERIES SN70B</b></p>	<p><b>SERIES SN70C</b></p>
<p><b>COVERS, PART NO. P-293 &amp; P-2994</b> (No. P-2994, special order only)</p>	<p><b>RECOMMENDED PC BOARD LAYOUT</b> <b>SERIES SN37A, SN49A &amp; SN49B</b> (Component Side)</p>	<p><b>RECOMMENDED PC BOARD LAYOUT</b> <b>SERIES SN49C</b> (Component Side)</p>



**RECOMMENDED PC BOARD LAYOUT**  
**SERIES SN70B**  
(Component Side)

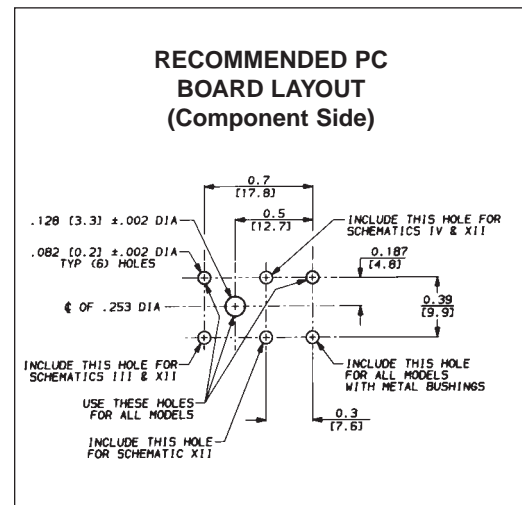
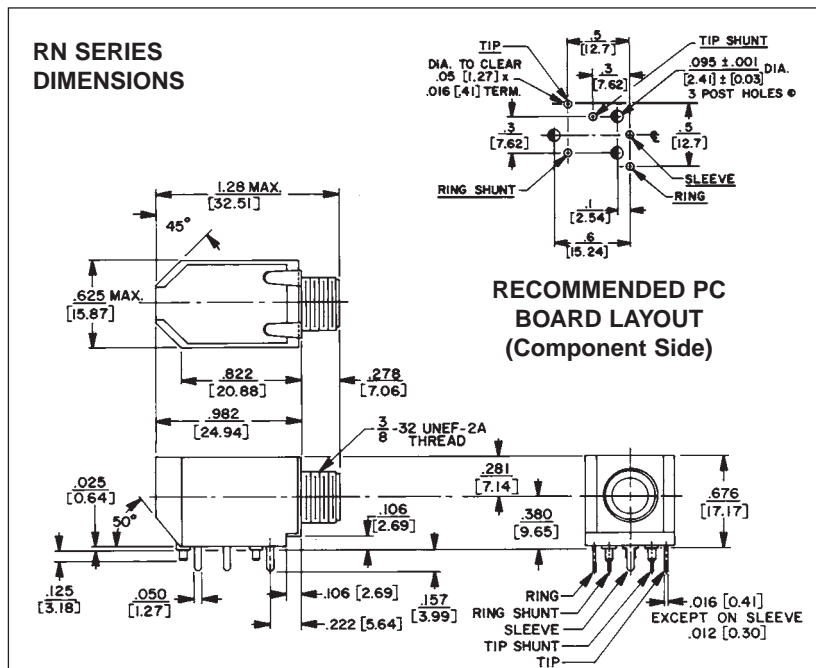
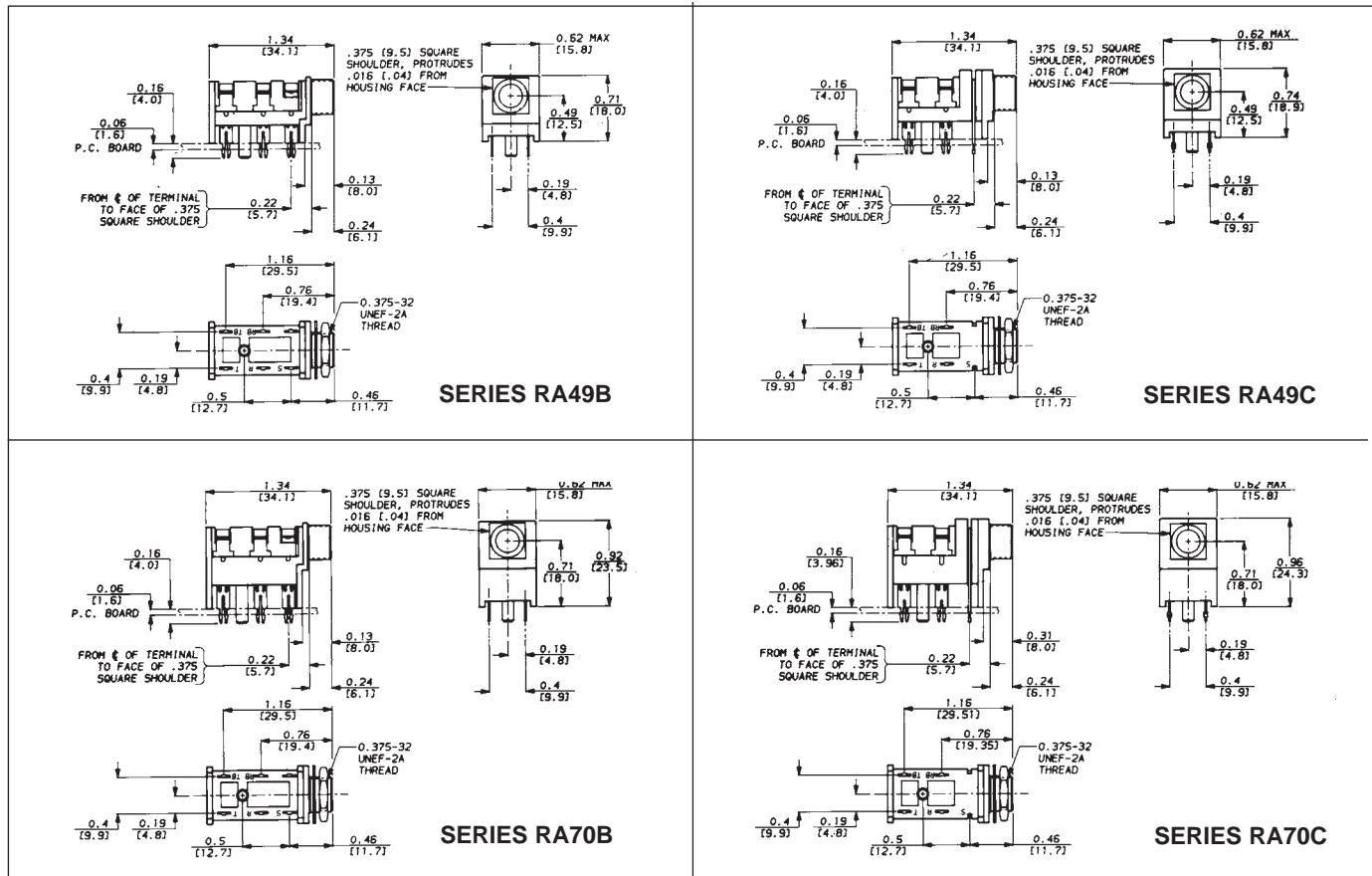


**RECOMMENDED PC BOARD LAYOUT**  
**SERIES SN70C**  
(Component Side)

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

1/4" RIGHT-ANGLE PHONE JACKS (continued)

SERIES RA and RN



DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{\text{mm}}$

## JACK COVERS

Reliable, spring-loaded covers effectively seal front panel bushing openings from dust and dirt when mating plugs are not connected to jack. Series 500 is mounted with conventional threaded bushing jacks. Special locknut (comes with Series 500 jack covers) seals tightly against rubber washer when cover is closed. Series 600 is used with certain type tip jacks. Due to variable jack dimensions, two .031" washers are supplied.

## SPECIFICATIONS

## MATERIAL

**Base and Cover:** Steel per QQ-S-698; finish per MIL-F-14072 (Sig. C), enamel, semi-gloss.

**Axle:** Copper alloy per QQ-W-321, Type 321, composition B. Plated per QQ-P-416, Type II, Class 3.

**Spring:** Stainless steel per QQ-W-432, Type 302.

**Hex Nut:** Copper alloy per QQ-B-626, composition 22. Same plating as axle.

**Gasket:** Synthetic rubber per MIL-R-6855, Type II, 35-40 Durometer.

**Washer (600 only):** Steel per QQ-S-698; plated per QQ-P-416, Type II, Class 3.

**Additional Specifications for Numbers 512 and 612:**

Same as above, except rivet, base, cover and hex nut and washer (Number 612 only) are nickel-plated per QG-N-290.

515

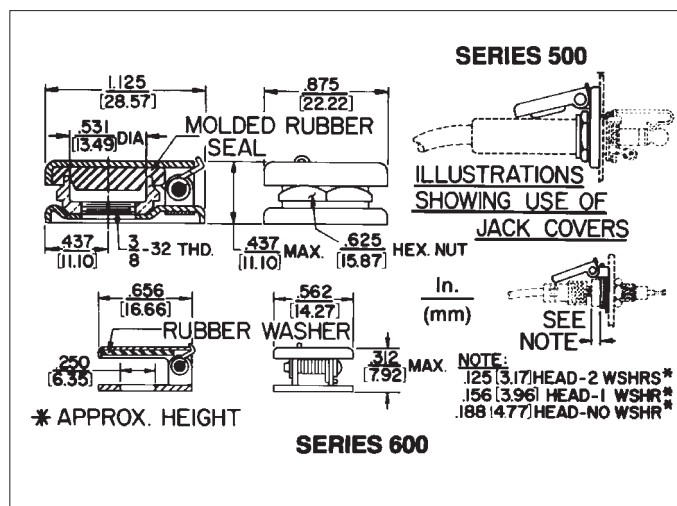


520



Color	Part No.	Part No.	Color	Part No.	Part No.
Olive Drab	510	610	Black	515	615
Bright Nickel	512	612	Navy Gray	520	620

◆ Special order only. Contact Switchcraft.



DIMENSIONS ARE FOR REFERENCE ONLY Inch  
(mm)



## 1/4" PHONE JACKS (continued)

LOCKING  
PHONE JACKS

SERIES E

Series E jacks provide stable, secure connections in panels where shock/vibration or accidental disconnect may occur. Plug locks-in automatically upon insertion; press "PUSH" tab to unlock and remove plug. Series E jacks have the same front panel appearance as Series E Q-G® audio connectors.

## SPECIFICATIONS

## MECHANICAL

Life: 10,000 cycles minimum.

## ELECTRICAL

**Insulation Resistance:** 2 x 106 MΩ at 500 V DC per MIL-STD-202, method 302 (initial).

**Dielectric Withstanding Voltage:** 1,000 V AC (rms).

## ENVIRONMENTAL

**Thermal Range:** -55°C to +85°C (non-operating); -20°C to +65°C (operating).

**Thermal Shock:** Per MIL-STD-202, method 107.

**Humidity:** Per MIL-STD-202, method 106.

**Salt Spray:** Per MIL-STD-202, method 101.

## MATERIAL

**Shell:** Die-cast zinc, with satin nickel-plating. Black chrome over nickel-plating on special order.

**Insert and Latch:** Thermoplastic, UL 94V-O.

**Latch Release:** Nickel-plated die-cast zinc.

**Contact Springs:** Tin-plated copper alloy.

Part Number	Description	Jack Schematic <sup>1</sup>	Typical Mating Plug <sup>2</sup>
E111L	2-cond., open circuit	I	250
E112BL	3-cond., double open circuit	IV	267

1. See Jack Schematics, pages 79 and 80

2. See Plugs Section

## THICK PANEL PHONE JACKS



151

Jacks are standard 2- and 3-conductor phone jacks with extra long threaded bushing for mounting in panels/chassis up to 1.25" thick. Metal bushing virtually eliminates hum pick-up, and is ideal for electric guitar and speaker connections. Jacks mate with standard commercial phone plugs. See plug section for mating plugs. Jacks mount in a single .469" diameter hole. Rugged cable clamp protects connections from twisting and pulling stresses.

## SPECIFICATIONS

## MATERIAL

**Mounting Bushing:** Nickel-plated copper alloy with knurled flange.

**Insulating Spacer:** Rigid plastic.

**Insulator/Spring Mount:** Thermoplastic.

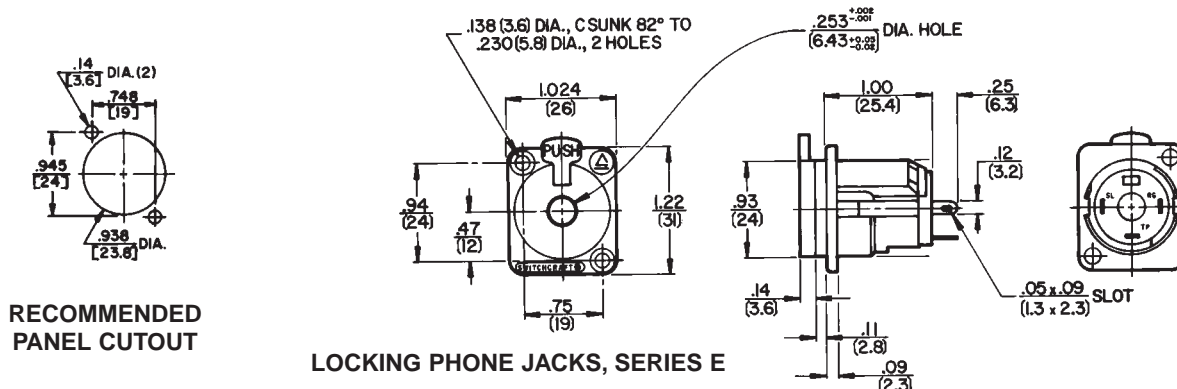
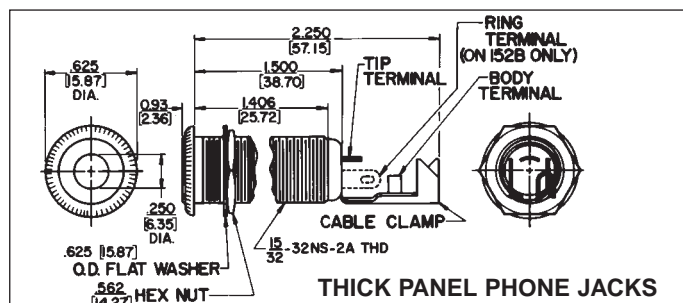
**Springs:** Copper alloy.

**Terminals:** Tip: Copper alloy. Ring: (Number 152B only) copper alloy.

**Sleeve:** Steel, tin-plated.

**Hardware:** Supplied with one, Number P10531 nickel-plated copper alloy hex nut, and one, Number P14761 nickel-plated copper alloy flat washer.

Part Number	Description	Jack Schematic	Typical Mating Plug
151	2-conductor, open circuit, nickel finish	I	280
152	2-conductor, open circuit, brass finish	I	280
152B	3-conductor, double open circuit, nickel finish	IV	297
153	2-conductor, open circuit, gold-plated springs, electro-polish brass finish, 9/16-12 UNC wood threads	I	280
154	3-conductor, double open circuit, gold finish, no cable clamp	IV	297
155	3-conductor, double open circuit, black satin finish, no cable clamp	IV	



DIMENSIONS ARE FOR REFERENCE ONLY

Inch  
(mm)

### 1/4" EXTENSION JACKS (IN-LINE)



Extension Jax® jacks are connected to the end of a cable. 2- and 3-conductor jacks mate with standard commercial phone plugs, and have a sturdy cable clamp strain relief, knurled shielded or molded black plastic handles, and a screw type solder terminal. All internal parts are interlocked. Note: See locking phone plugs section.

#### SPECIFICATIONS

##### MATERIAL

**Body, Sleeve and Shielded Handle:** Nickel-plated copper alloy.

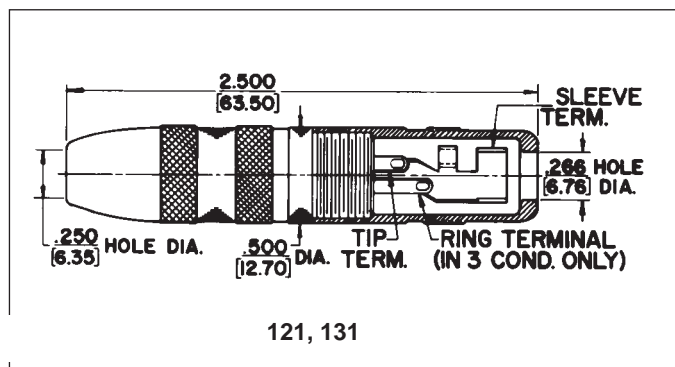
**Plastic Handles:** Molded black thermoplastic.

**Springs:** Special copper alloy.

**Bushing and Flange:** Plated copper alloy.

**Insulation:** Thermoplastic.

**Clamp Terminals:** Tin-plated copper alloy.



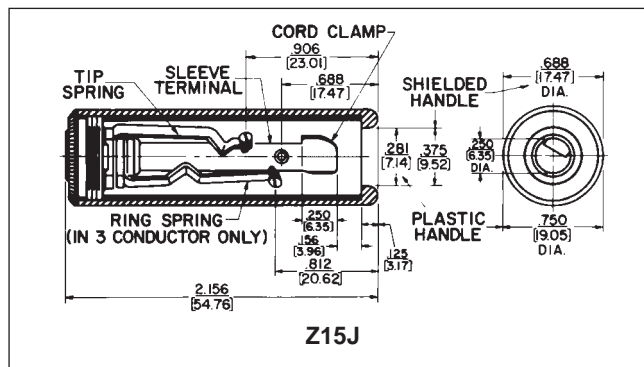
#### TWO-CONDUCTOR PART NUMBERS

Part Number	Description	Mating Plug <sup>1</sup>
80	Black handle; screw terminals	250
88	Black handle; solder lugs	250
120	Shielded handle; screw terminals	250
121	Shielded handle; solder lugs; cable clamp	250
128	Shielded handle; solder lugs	250

#### THREE-CONDUCTOR PART NUMBERS

Part Number	Description	Mating Plug <sup>1</sup>
131	Shielded handle; solder lugs	267
830	Black handle; screw terminals	267
S830	Similar to No. 830 except, .21" I.D. sleeve	480
838	Black handle; solder lugs	267
1230	Shielded handle; screw terminals	267
1238	Shielded handle; solder lugs	267

1. Other mating plugs are available.



### 1/4" SPEAKER JACKS

High power 2-conductor speaker jack carries 15A (continuous) audio speaker current levels. Jack Number **Z15J** has positive detent for plug retention. Terminations are solder lug; wires accepted are up to 10 AWG. Red housing indicates high current rating. Recommended mating plugs: 70, 184, 187 series.

#### SPECIFICATIONS

**Housing:** Glass reinforced thermoplastic, UL 94V-O.

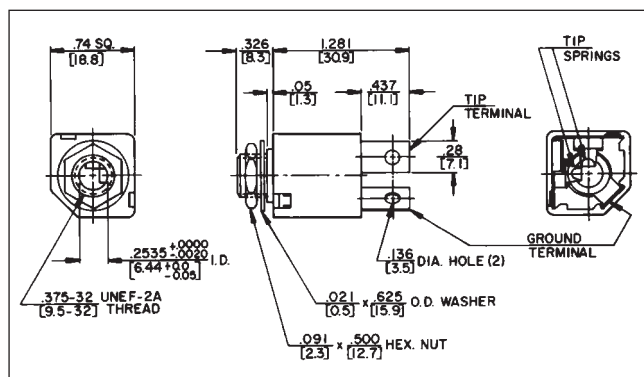
**Tip Spring and Ground Terminals:** Copper alloy.

**Bushing and Hardware:** Nickel-plated copper alloy (hardware supplied).

**Heat Rise:** 30°C with 15 A continuous carry.

**Life:** 10,000 (minimum) with proper plug.

Part Number	Description
Z15J	High power speaker jack

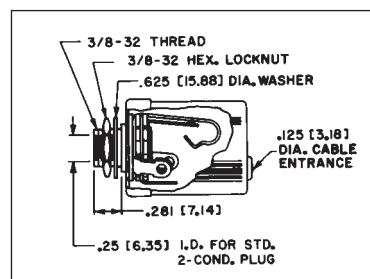


DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## 1/4" SHIELDED PHONE JACKS



CN12A



Shield is assembled as part of the jack; cover "snaps" into place. Shield is designed for Hi Z circuits. Mounting is through a 3/8" diameter hole in chassis/panel up to .156" thick with hex nut and flat washer (supplied). On special order, jacks with .21 inch inside diameter bushing are available.

## SPECIFICATIONS

## MATERIAL

**Cover and Shield:** Copper alloy, nickel-plated.

**Cable Entry Insulation:** Thermoplastic.

## TWO CONDUCTOR PART NUMBERS

Part Number	Description	Jack Schematic <sup>1</sup>
CN11	Uses Number 11 Littell-Jax® jacks	I
◇CN12A	Uses Number 12A Littell-Jax® jacks	III

◇ Special order only. Contact Switchcraft.

## THREE CONDUCTOR PART NUMBERS

CN12B	Uses Number 12B Littell-Jax® jacks	IV
◇CN13B	Uses Number 13B Littell-Jax® jacks	VII

<sup>1</sup> See jack schematics on pages 79 and 80.

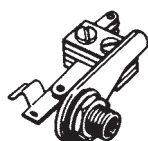
<sup>2</sup> See Plug Section for mating information.

◇ Special order only. Contact Switchcraft.

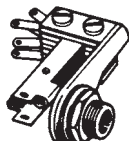
## SF-JAX® SHORT FRAME JACKS

Part No.	Cond.	Schematic Number	Typical Mating Plug	MIL Type	Contacts	Rating	Mounting In. (mm)
24B	3	XII	267	-----	Fine Silver	3A 125V AC	.375 (9.52) hole, mounts in panels up to .156 (3.96) thick
25	2	XIII	250	-----			
◇53B	3	VII	267	-----			
◇54A	2	XI	250	-----			
◇54B	3	XII	267	-----			
◇55	2	XIII	250	-----			
◇C-55B	3	XV	482	JJ-095, M641/14-1			

Long spring design reliability with minimum behind-panel depth. Series 50 same as Series 20, except solder lug location requires more depth, but less panel space. Number C55B has MIL type insulation and finish.



SERIES 20



SERIES 50

## .141" MINIATURE PHONE JACKS



125

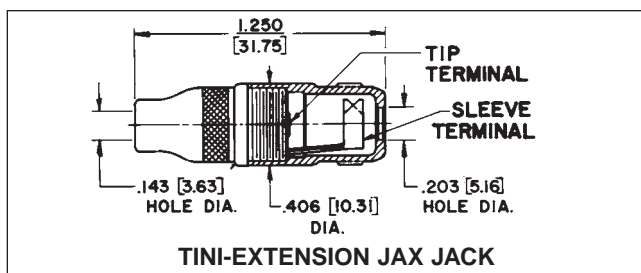
## MINIATURE EXTENSION JACK, PHONE JACK NUMBER 125 (EIA STANDARD)

Cable-mounted Tini-Extension Jax® 2-conductor single open circuit jack has built in cable clamp/sleeve terminal. Mates with Tini-Plug® phone plugs and other plugs with .141" diameter fingers and compatible tip shape. Shielded housing/handle is knurled for positive fingertip grip; solder lug terminals.

**Body and handle:** Nickel-plated copper alloy.

**Insulation:** Rigid plastic.

**Springs:** Plated copper alloy.



Part Number	Description	Jack Schematic	Typical Mating Plug
125	Extension Jack	I	750

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## .141" MINIATURE PHONE JACKS



41



42A



142A



PC142A

**TINI-JAX® MINIATURE PHONE JACKS,  
NUMBERS 41, 42A, 43A**

Tini-Jax 2-conductor phone jacks, (for limited space connecting, mate with miniature phone plugs having .141" diameter fingers and compatible tip shape) are 1/3 the size of Littell-Jax® and weigh less than 1/8 ounce. Notched insulators interlock internal parts. Unique tip spring shape mates with Switchcraft Tini-Plug® phone plugs. Mounting hole: .250" diameter in panels up to .125" thick (mounting hardware supplied). For insulated mount, order two washers separately, Number **S1564** (swedged fiber washer .312" diameter mounting hole) and number **S2207** (flat phenolic washer).

**SPECIFICATIONS  
MECHANICAL**

**Life:** 5,000 insertion/withdrawal cycles, minimum.

**ELECTRICAL**

**Contact Resistance:** .075 ohms maximum.

**Insulation Resistance:** 5,000 MΩ minimum.

**Dielectric Withstanding Voltage:** 250 V AC maximum.

**Contact Rating:** .25A, 48 V DC.

**MATERIAL**

**Mounting Bushing:** Nickel-plated copper alloy.

**Insulating Spacers:** Rigid plastic.

**Springs:** Special copper alloy.

**Sleeve Terminal:** Tin-plated copper alloy.

**Hardware:** Supplied with one, Number **P11501** nickel-plated copper alloy locknut, and one, Number **S17901** nickel-plated steel flat washer.

**TINI-D-JAX® MINIATURE ENCLOSED  
PHONE JACKS, NUMBERS 142A, PC142A**

Tini-D Jax uses Hi-D Jax® construction and mounts on .375" centers. Weight: 3.6 grams. Number 142A mounts through .25" diameter hole in chassis/panel up to .125" thick. Four standoff dimples can be molded into housing to reduce effective length of bushing to .187" (special order). Number **PC142A** has special spring terminals for "snap-in" mounting to PC boards up to .125" thick - ready for hand, wave or dip-soldering.

**SPECIFICATIONS  
MECHANICAL**

**Life:** 5,000 insertion/withdrawal cycles, minimum.

**Insertion/Withdrawal:** 15 ounce minimum, 40 ounce maximum, insertion. 12 ounce minimum, 25 ounce maximum, withdrawal.

**ELECTRICAL**

**Contact Resistance:** .10 ohms maximum.

**Dielectric Withstanding Voltage:** 250 V AC maximum.

**Shunt Tension:** 100 grams minimum.

**MATERIAL**

**Housing:** Molded plastic.

**Mounting Bushing:** Plated copper alloy.

**Tip Spring:** Plated copper alloy, bifurcated.

**Shunt Springs:** Plated copper alloy.

**Sleeve Bracket:** Plated steel.

**Insulator:** Rigid plastic.

**Hardware:** Number **142A** supplied with one, Number **P1975** nickel-plated copper alloy locknut, and one, Number **S3997** nickel-plated steel flat washer.

Part Number	Description	Jack Schematic <sup>1</sup>	Typical Mating Plug <sup>2</sup>
41	Open circuit	I	750
42A	Shunted (closed circuit)	III	750
43A	Special transfer circuit	Note 3	750
142A	Shunted (closed circuit)	III	750
PC142A	Shunted (closed circuit)	III	750

1. See jack schematics, pages 79 and 80.

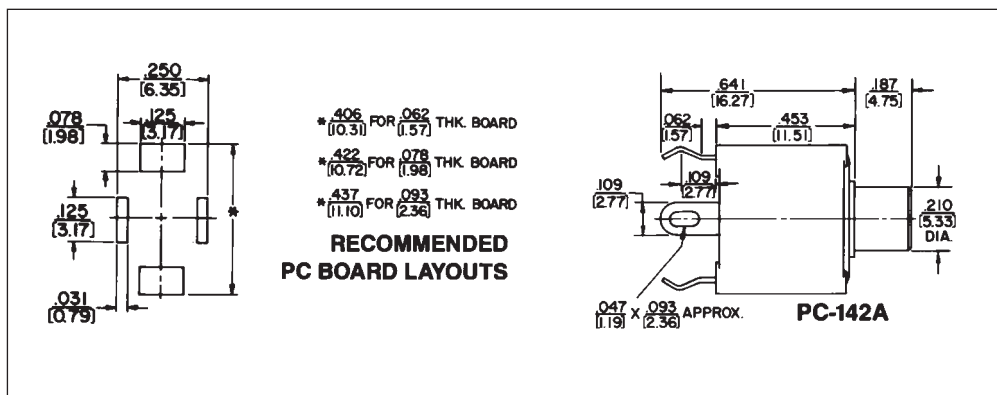
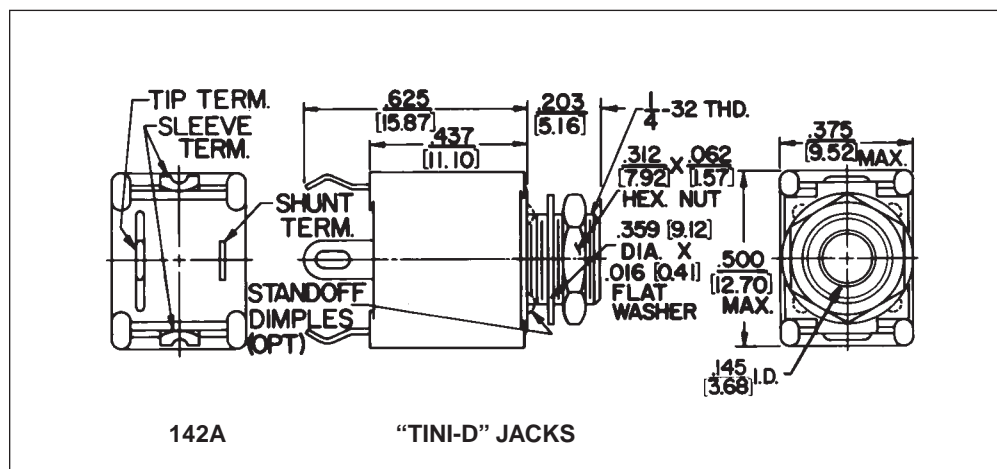
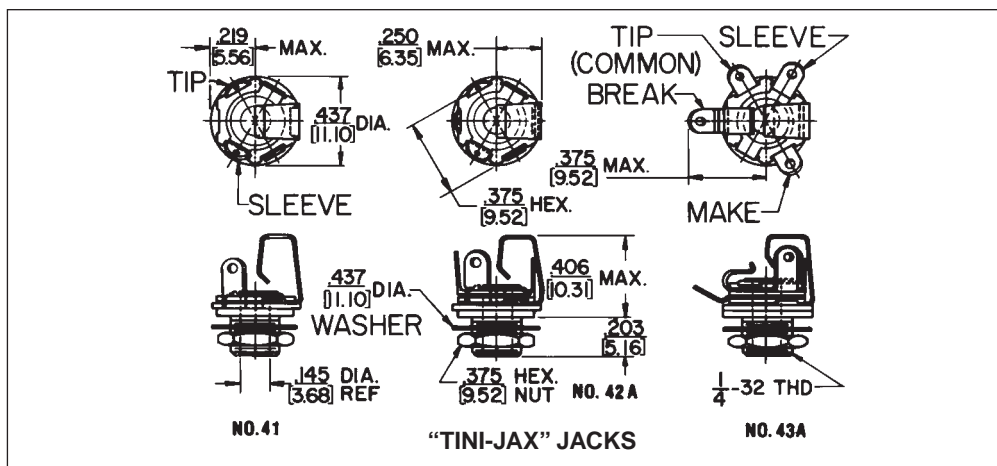
2. See Plugs Section for mating information.

3. When inserted, plug tip contacts "make" tip spring. Further insertion allows tip to short "make" tip spring and tip spring together. Full insertion opens tip shunt circuit.

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

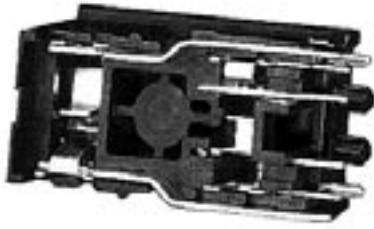


## .141" MINIATURE PHONE JACKS (continued)



DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## 3.5MM DUAL STEREO JACK



UNSHIELDED - 35RAPC7J



SHIELDED - 35RAPC7JS

### FEATURES

- 3-conductor, miniature phone jack mates with 3.5 mm finger plugs.
- Saves board space...two jacks in a single vertical mount footprint.
- Ideally suited for infra-red and convection oven soldering 235°C (455°F).
- Board retention pins accommodate PC board thickness range of .050" to .080".
- Single-screw panel mounting hole is standard.
- EMI-RFI shield, optional.
- Housing UL 94V-0 rated against flammability.

### APPLICATIONS

- Multi-media workstations
- Headphones/microphone sets
- Interactive TV
- Audio
- Telecommunications
- Medical
- Computer
- Instrumentation

### MATERIALS

**Housing:** Thermoplastic.

**Tip and Ring Springs:** Silver-plated copper alloy.

**Shunt Terminals:** Silver-plated copper alloy.

**Sleeve Terminals:** Silver-plated copper alloy.

**Shield:** Pre-tinned copper alloy.

### PERFORMANCE SPECIFICATIONS

**Insertion/Extraction Forces, initial:** 0.8 to 6 pounds.

**Dielectric Withstanding Voltage:** 500 VAC.

**Insulation Resistance, initial:** 100 Megaohms, min.

**Contact Resistance:** Between plug and jack:  
50 milliohms, maximum Between springs and shunts:  
30 milliohms, maximum.

**Life:** 5000 cycles, minimum.

### ORDERING INFORMATION

**Part Number:**

Shielded - **35RAPC7JS**

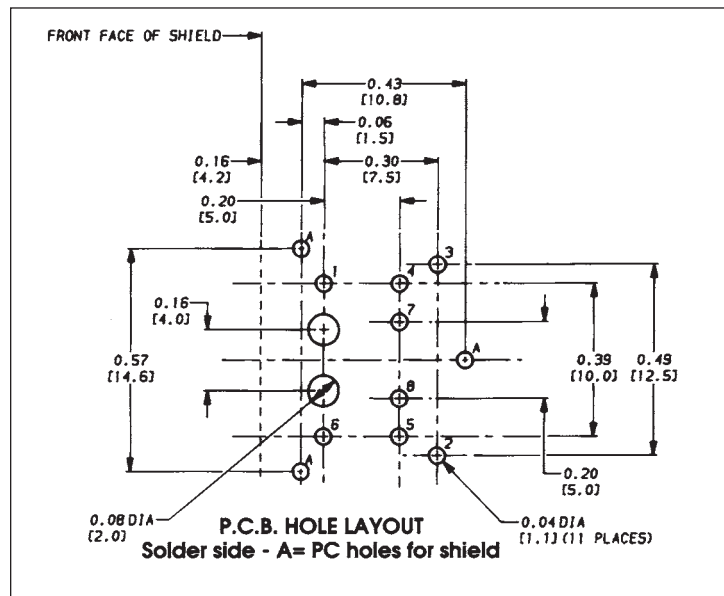
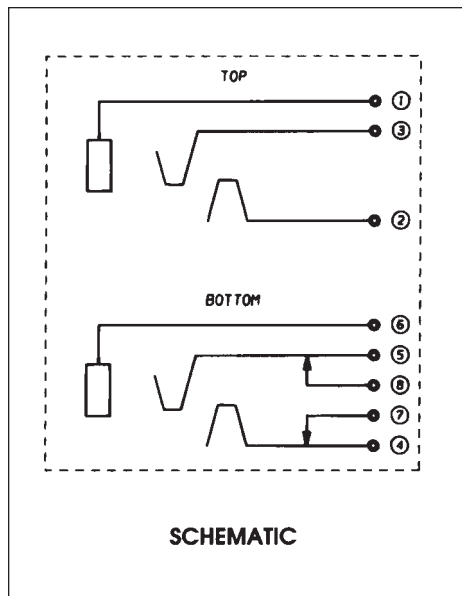
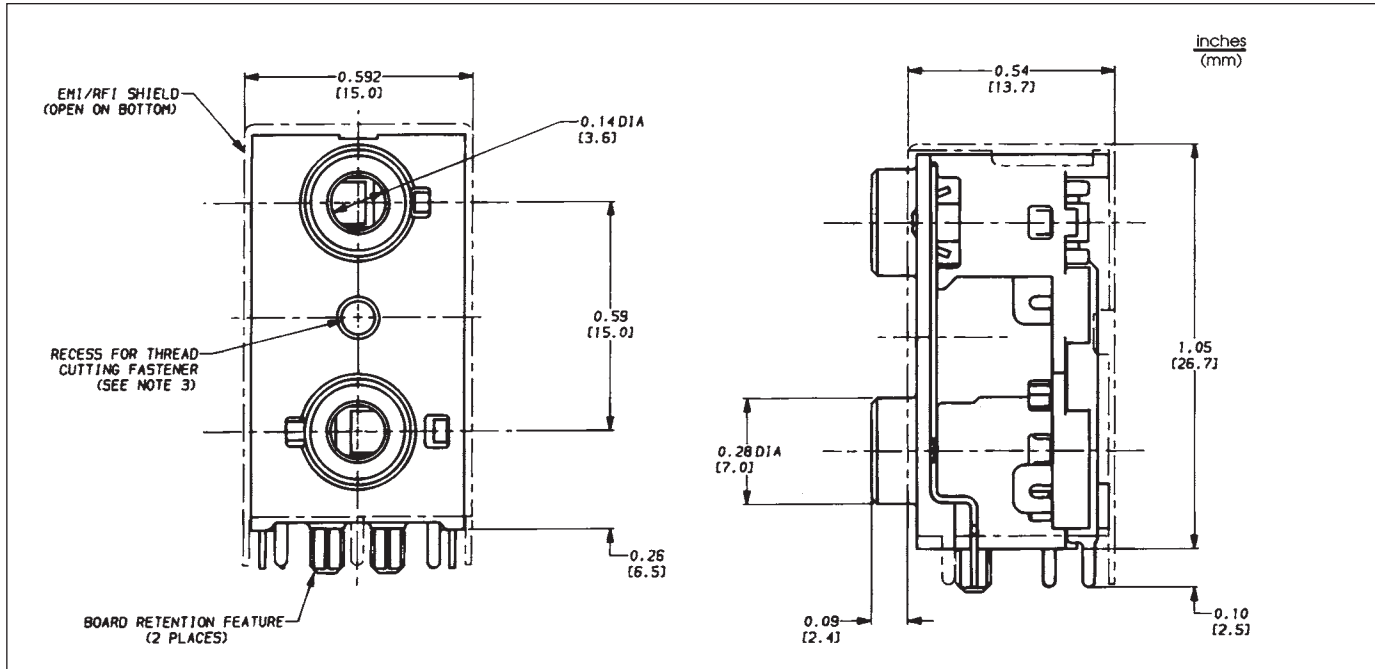
Unshielded - **35RAPC7J**

1. Order by part number.

2. Contact Switchcraft for special order information.

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## 3.5MM DUAL STEREO JACK (continued)



## NOTES:

1. Shield isolated from terminals 1 and 6.
2. Width of all terminals = 0.032" (0.814 mm).
3. Use Camcar Textron S25 T8 TORX pan head "Duro-PT" thread cutting fastener of appropriate length or equivalent.

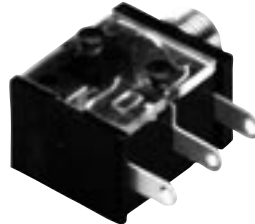
DIMENSIONS ARE FOR REFERENCE ONLY

Inch  
(mm)

### 3.5MM SINGLE MONO AND STEREO JACKS



35RAPC4BV4



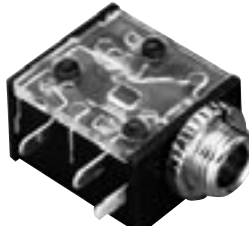
35RAPC2AV



35RAPC2BHN2



35RAPC4BH3



35RAPC2BV4



35RAPC2BH3

#### FEATURES

- 2 and 3 conductor 3.5mm phone jacks
- Right angle PC mount, true SMT versions, and open frame panel mounts
- Wide variety of circuits available
- Mates with all 3.5mm plugs Right angle PC mount available in low profile, horizontal styles

#### MATERIALS

**Housing:** Thermoplastic, UL94V-1  
**Terminals:** Silver-plated, copper alloy  
**Bushing:** Nickel-plated, copper alloy  
**Performance Specifications:**  
**Contact Resistance:** < 50 milliohms  
**Insulation Resistance:** 100 milliohms min.  
**Dielectric Withstanding Voltage:** 250 VAC (35RAPC2BHN2- 500 VAC)  
**Open Frame Versions Materials:**  
**Housing (35PM2BV2):** Thermoplastic, 94V-1  
**Life:** 5000 cycles, min.  
**Bushing:** Nickel-plated, copper alloy

**Insulating Washers:** Rigid Plastic

**Springs:** Copper alloy

**Sleeve Terminal:** Tin-plated, copper alloy

**Hardware:** Supplied with one, P11501

nickel-plated brass locknut, and one, S17901 nickel-plated steel flat washer

**Performance Specifications:**

**Contact Resistance:** .075 ohms max.

**Insulation Resistance:** 5,000 Mohms min

**Dielectric Withstanding Voltage:**

250 VAC Life: 5000 cycles, min

#### ORDERING INFORMATION

Part numbers which include the letter "N" designate non-threaded bushings.  
 Part numbers without the letter "N" designate threaded bushing.

Part Number	Description	Height vs. Width	Bushing
35RAPC2AV	mono	vertical	threaded <sup>3</sup>
35RAPC2AHN2	mono	horizontal	non-threaded
35RAPC2AHN3	mono	horizontal	non-threaded
35RAPC2BHN2	stereo	horizontal	non-threaded
35RAPC2BHN3	stereo	horizontal	non-threaded
35RAPC3BHN2	stereo	horizontal	non-threaded
35RAPC3BHN3	stereo	horizontal	non-threaded
35RAPC4BHN2	stereo	horizontal	non-threaded
35RAPC4BHN3	stereo	horizontal	non-threaded
35RAPC2AH3	mono	horizontal	threaded <sup>3</sup>
35RAPC2BH3	stereo	horizontal	threaded <sup>3</sup>
35RAPC3BH3	stereo	horizontal	threaded <sup>3</sup>

Part Number	Description	Height vs. Width	Bushing
35RAPC4BH3	stereo	horizontal	threaded <sup>3</sup>
35RAPC2AV4	mono	vertical	threaded <sup>3</sup>
35RAPC2BV4	stereo	vertical	threaded <sup>3</sup>
35RAPC3BV4	stereo	vertical	threaded <sup>3</sup>
35RAPC4BV4	stereo	vertical	threaded <sup>3</sup>
35RAPC2AVN4	mono	vertical	non-threaded
35RAPC2BVN4	stereo	vertical	non-threaded
35RAPC3BVN4	stereo	vertical	non-threaded
35RAPC4BVN4	stereo	vertical	non-threaded

Replacement Knurl Nut P3345

1. Order by part number
2. Contact Switchcraft for special ordering information
3. Mounting hardware included.

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$



## 3.5MM SINGLE, MONO AND STEREO JACKS (continued)

## 35RAPC2AV – MONO, VERTICAL, THREADED

## MATERIALS

Coil Spring: Steel wire.

Bushing: Nickel-plated copper alloy.

Terminal: Silver-plated copper alloy.

Tip Spring: Silver-plated copper alloy.

Shunt Terminal: Plated copper alloy.

Cover: Thermoplastic, transparent UL 94V-2.

Body: Thermoplastic, UL 94V-1 black color.

## PERFORMANCE SPECIFICATIONS

Contact Resistance: 20 milliohms maximum.

Insulation Resistance:

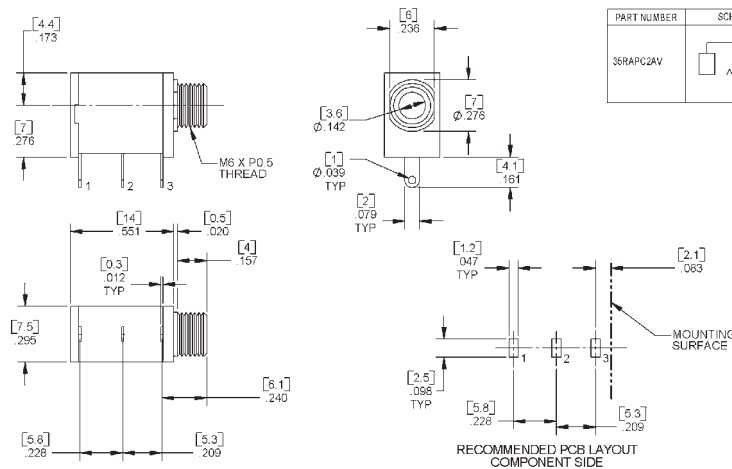
100 milliohms minimum at 250V DC.

Dielectric Withstanding Voltage: 250V AC.

Life: 5000 cycles, minimum.

Insertion Force: 0.88 pounds - 3.5 pounds.

Withdrawal Force: 0.88 pounds - 2.64 pounds.



## 35RAPC2AV4, 35RAPC2BV4, 35RAPC3BV4, 35RAPC4BV4 - STEREO, VERTICAL, THREADED

## MATERIALS

Coil Springs: Steel Wire.

Ring Spring: Copper alloy strip, tin alloy plating.

Ground Terminal: Copper alloy strip, tin alloy plating.

Bushing: Nickel-plated copper alloy.

Cover: Thermoplastic, UL 94V-0 black color.

Body: Thermoplastic, UL 94V-0 black color.

## PERFORMANCE SPECIFICATIONS

Contact Resistance: 20 milliohms maximum,

initial 50 milliohms maximum, after life.

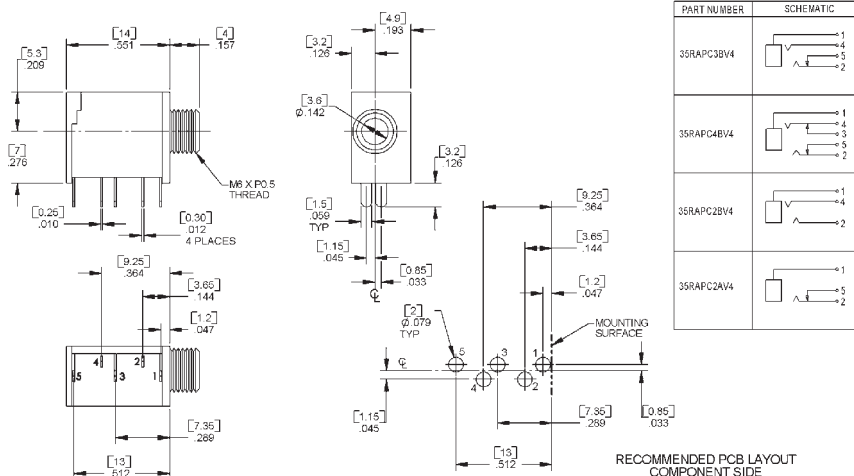
Insulation Resistance: 50 megohms minimum at 500V DC.

Dielectric Withstanding Voltage: 250V AC.

Life: 5,000 cycles, minimum.

Insertion Force: 0.88 lbs. to 3.50 lbs.

Withdrawal Force: 0.88 lbs. to 3.10 lbs.



DIMENSIONS ARE FOR REFERENCE ONLY

Inch  
(mm)

### 3.5MM SINGLE, MONO AND STEREO JACKS (continued)

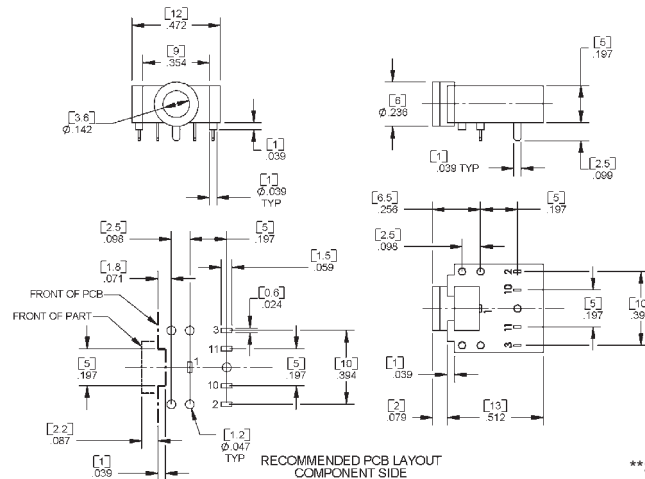
35RAPC2AHN2, 35RAPC2BHN2, 35RAPC3BHN2, 35RAPC4BHN2 - STEREO, HORIZONTAL, NON-THREADED

#### MATERIALS

**Cover:** Thermoplastic, UL 94V-1 black color.  
**Ring Spring:** Copper alloy.  
**Tip Spring:** Silver-plated copper alloy.  
**Ground Terminal:** Silver-plated copper alloy.  
**Metal:** Copper alloy, nickel plating.  
**Body:** Thermoplastic, UL 94V-0 black color.

#### PERFORMANCE SPECIFICATIONS

**Contact Resistance:** 30 milliohms maximum, initial  
 100 milliohms maximum, after life.  
**Insulation Resistance:** 100 megohms minimum  
 at 500V DC.  
**Dielectric Withstanding Voltage:** 500V AC.  
**Life:** 5000 cycles, minimum.  
**Insertion Force:** 0.88 pounds - 6.6 pounds.  
**Withdrawal Force:** 0.88 pounds - 6.6 pounds.



PART NUMBER	SCHEMATIC
35RAPC3BHN2	
35RAPC4BHN2	
35RAPC2BHN2	
35RAPC2AHN2	

\*\*Same drawing for jack with non-threaded bushing.

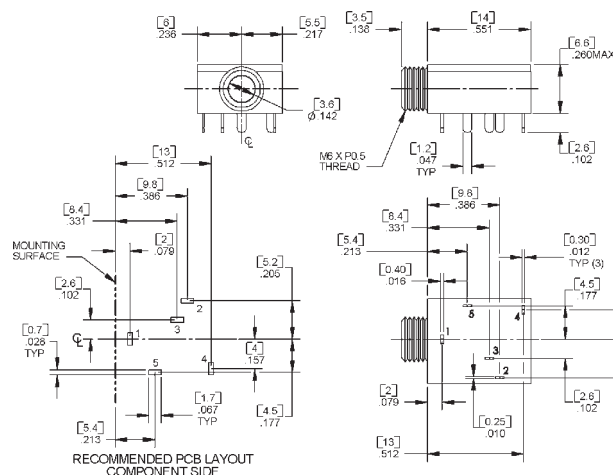
35RAPC2AH3, 35RAPC2BH3, 35RAPC3BH3, 35RAPC4BH3 - STEREO, HORIZONTAL, THREADED

#### MATERIALS

**Coil Springs:** Steel wire.  
**Tip Spring:** Silver-plated copper alloy.  
**Ring Spring:** Silver-plated copper alloy.  
**Ground Terminal:** Silver-plated copper alloy.  
**Bushing:** Nickel-plated copper alloy.  
**Cover:** Thermoplastic, transparent UL 94V-2.  
**Body:** Thermoplastic, UL 94V-1 black color.

#### PERFORMANCE SPECIFICATIONS

**Contact Resistance:** 20 milliohms maximum, initial  
 100 milliohms maximum, after life.  
**Insulation Resistance:** 100 megohms minimum.  
**Dielectric Withstanding Voltage:** 250V AC.  
**Life:** 5000 cycles, minimum.  
**Insertion Force:** 0.88 lbs. - 3.50 lbs.  
**Withdrawal Force:** 0.88 lbs. - 3.10 lbs.



PART NUMBER	SCHEMATIC
35RAPC3BH3	
35RAPC4BH3	
35RAPC2BH3	
35RAPC2AH3	

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## 3.5MM SINGLE MONO AND STEREO JACKS

Switchcraft introduces a new series of 3.5mm jacks. These low profile jacks come in a wide variety of circuits, both 2 and 3 conductor versions. Circuits include mono closed, stereo open, stereo tip closed and ring open, and stereo closed. The 35RASMT Series is available on tape and reel only. Contact Switchcraft for exact dimensions of the reels. They're designed for use in today's electronic equipment that features remote speakers, headsets, and headphones. While they are more compact than commonly used PC mount phone jacks, they are still extremely durable. Jacks come on tape and reel, 1K per reel.

## FEATURES AND BENEFITS

- SMT mounting
- Tape and reel packaging
- Wide variety of circuits

## APPLICATIONS

- Computer
- Video Cameras
- Personal/Portable Audio Devices
- Multimedia

## SPECIFICATIONS

**Electrical Current Rating:** 3A

**Contact Resistance:** <50 mohms

**Insulation Resistance:** 100 mohms (min.)

**Dielectric Withstanding Voltage:** 250VAC @ 1 minute

## MECHANICAL

**Lifecycles:** 5,000

**Operating Temperature:** -25°C to +85°C

## MATERIAL

**Housing:** Black thermoplastic

**Sleeve, Ring and Tip Terminals:**

Copper Alloy, silver-plated

**Shunt Terminal:** Copper Alloy, Silver-plated



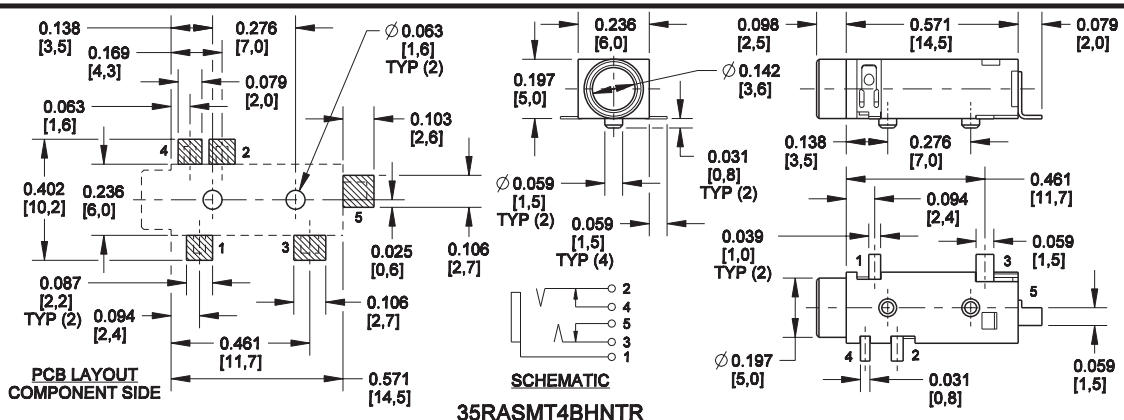
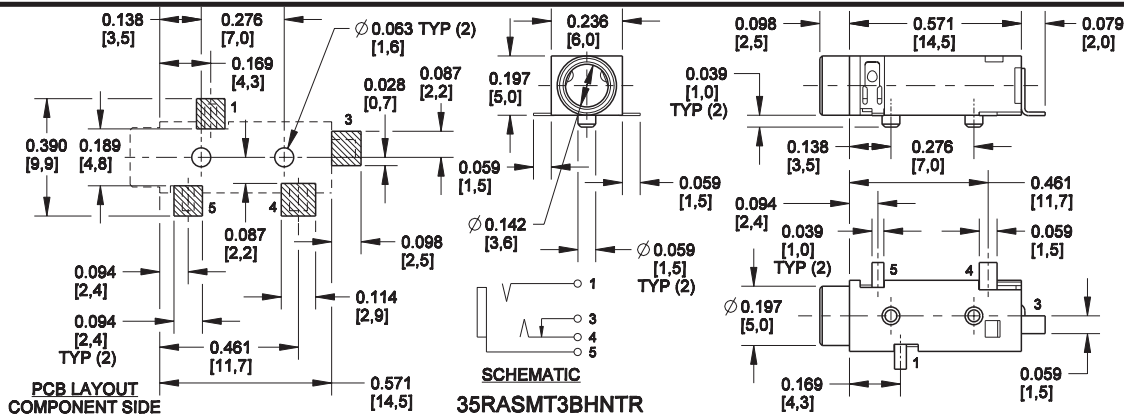
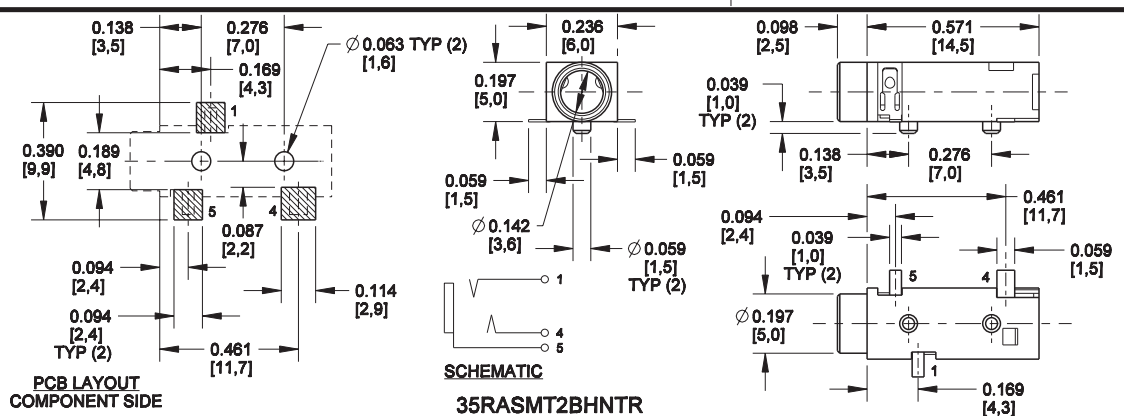
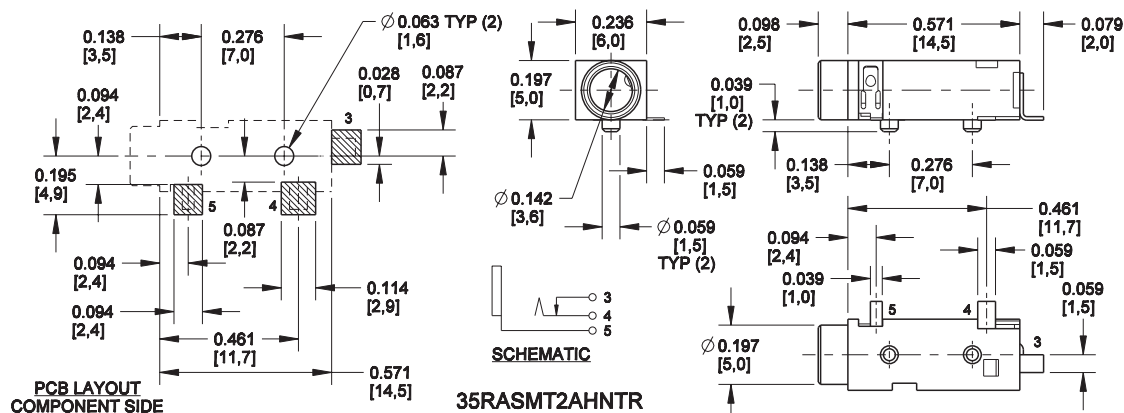
35RASMT

3.5MM SINGLE MONO  
AND STEREO JACKS

Part Number/Description
<b>35RASMT2AHNTR</b> Mono, closed circuit, on tape and reel
<b>35RASMT2BHNTR</b> Stereo, dual open circuit, on tape and reel
<b>35RASMT3BHNTR</b> Stereo, tip closed and ring open circuit, on tape and reel
<b>35RASMT4BHNTR</b> Stereo, dual closed circuit, on tape and reel

(See next page for drawings.)

### 3.5MM SINGLE MONO AND STEREO JACKS (continued)



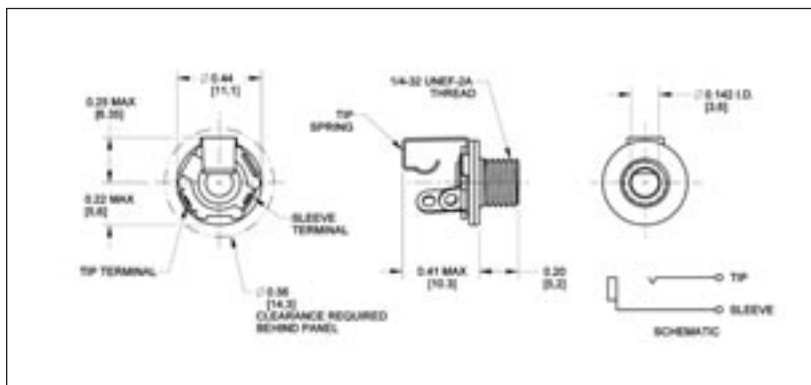
DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$



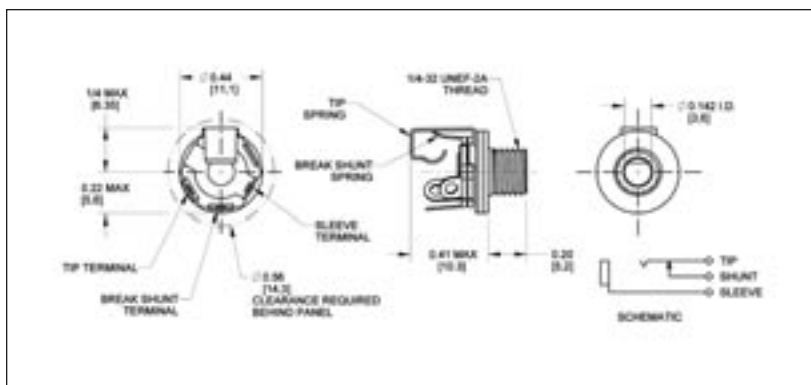
## 3.5 mm SINGLE MONO JACKS



35PM1



35PM2A



## FEATURES

- 2-conductor phone jacks similar to Littel-Jax® phone jacks, but smaller.
- For connecting in limited space
- Mate with 3.5 mm phone plugs
- Notched insulators interlock internal parts
- Mounting hole: .250" diameter in panels up to .125" thick (mounting hardware supplied)
- For insulated mount, order two washers separately, Number S1564 (swedged fiber washer .312" diameter mounting hole) and number S2207 (flat phenolic washer)

## SPECIFICATIONS

## MECHANICAL

**Life:** 5,000 insertion/withdrawal cycles, minimum

## ELECTRICAL

**Contact Resistance:** .075 ohms maximum

**Insulation Resistance:** 5,000 MΩ minimum

**Dielectric Withstanding Voltage:** 250V AC maximum

**Contact Rating:** .25A, 48V DC

## MATERIAL

**Mounting Bushing:** Nickel-plated copper alloy.

**Insulating Spacers:** Rigid plastic.

**Springs:** Copper alloy.

**Sleeve Terminal:** Tin-plated copper alloy.

**Hardware:** Supplied with one, Number P11501 nickel-plated brass locknut, and one, Number S17901 nickel-plated steel flat washer.

PART NUMBER	DESCRIPTION	JACK SCHEMATIC <sup>1</sup>	TYPICAL MATING PLUG
35PM1	Open circuit	I	750
35PM2A	Shunted (closed circuit)	III	750

1. See jack schematics on pages 79 and 80.

## ORDERING INFORMATION

1. Order by part number.

2. Contact Switchcraft for more information.

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

### 2.5MM SINGLE MONO AND STEREO JACKS

Switchcraft introduces a new series of 2.5mm jacks. These low profile jacks come in a wide variety of circuits, both 2 and 3 conductor versions. Circuits include mono closed, stereo open, stereo tip closed and ring open, and stereo closed. The MDSMT Series is available on tape and reel only. Contact Switchcraft for exact dimensions of the reels. They're designed for use in today's electronic equipment that features remote speakers, headsets, and headphones. While they are more compact than commonly used PC mount phone jacks, they are still extremely durable.

#### FEATURES AND BENEFITS

- SMT mounting
- Tape and reel packaging
- Wide variety of circuits

#### APPLICATIONS

- Computer
- Video Cameras
- Personal/Portable Audio Devices
- Multimedia

#### SPECIFICATIONS

**Electrical Current Rating:** 3A

**Contact Resistance:** <50 mohms

**Insulation Resistance:** 100 mohms (min.)

**Dielectric Withstanding Voltage:**

250VAC @ 1 minute

#### MECHANICAL

**Lifecycles:** 5,000

**Operating Temperature:** -25°C to +85°C

#### MATERIAL

**Housing:** Black thermoplastic

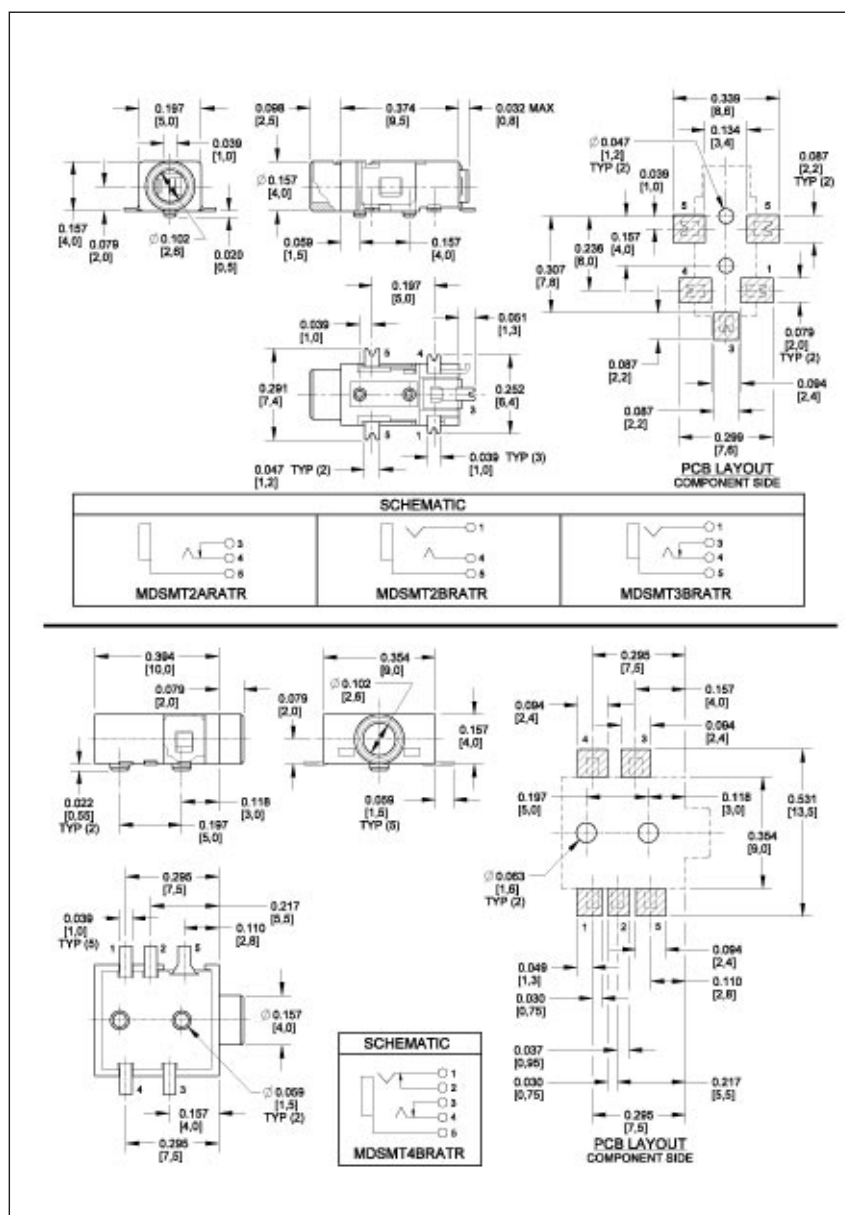
**Sleeve, Ring and Tip Terminals:**

Copper Alloy, silver-plated

**Shunt Terminal:** Copper Alloy, Silver-plated



MDSMT4BRATR



### 2.5MM SINGLE MONO AND STEREO JACKS

Part Number/Description
MDSMT2BRATR Stereo, dual open circuit
MDSMT2ARATR Mono, closed circuit
MDSMT3BRATR Stereo, tip closed and ring open circuit
MDSMT4BRATR Stereo, dual closed circuit

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## .101" SUBMINIATURE PHONE JACKS



TR2A



TR1PC



MDPC2A



MDSL2A



MDSL2ARA



MDPC2ARA

**SUBMINIATURE PHONE JACKS, TR2A AND TR1PC**

Extremely small, rugged, shunted Micro-Jax® 2-conductor jack is 1/4 the size of a standard phone jack and weighs less than 1/20 ounce. Can be wired for open or closed circuit operation. Internally keyed insulators interlock all parts and tip springs grip mating plugs positively. Mates with Switchcraft Micro-Plug® phone plugs. Jacks mount through .190" diameter hole in chassis/panels up to .093" thick. For insulated mounting, a .281" diameter hole and .050" maximum panel thickness applies. Order insulating washer separately. Number **P1617** (flat phenolic washer) and Number **P1618** (swedged fiber washer).

**Number TR1PC:** 2-conductor closed circuit jack with PC terminals. Open frame and enclosed versions available. Mates with Switchcraft® Micro Plug® numbers 850, 855, and 880.

**SUBMINIATURE ENCLOSED PHONE JACKS**

Micro-D Jax® 2-conductor jacks have insulated box construction and subminiature size.

**Number MDPC2A:** 2-conductor closed circuit jack with PC terminals. Mounts to single-, double-sided or multilayer boards either singly or in rows as close as .344" centers (+/- .01 inches). Bushing is .10" inside diameter.

**Number MDSL2A:** Same as MDPC2A except, 1. solder lugs, 2. bushing is #10-48 threaded (nut and washer supplied), and 3. mounting centers are .35" or .313". When mounted on .313" centers, sleeves or adjacent jacks may be in intimate contact. Mounts through a .203" diameter hole in chassis/panels up to .063" thick.

**SUBMINIATURE RIGHT-ANGLE PHONE JACKS**

2-conductor jacks have molded housing which protects all internal parts. Panel/chassis or PC boards mounting in rows, if desired, on .351" centers. PC terminals need only .382" behind-panel clearance.

**Number MDPC2ARA:** PC terminals mount/terminate directly to PC or multilayer boards. Bushing clears a .156" diameter panel hole.

**Number MDSL2ARA:** Right-angle solder lugs and #10-48 threaded bushing for chassis/panel mount. Mounts in .203" diameter hole in chassis/panels up to .063" thick.

**SPECIFICATIONS - MICRO-JAX® ELECTRICAL:**

**Contact Resistance:** .10 ohms maximum (spring to plug).

**Shunt Resistance:** .10 ohms maximum.

**Dielectric Withstanding Voltage:** 250 V AC.

**Shunt Tension:** 60 grams minimum.

**MATERIAL:**

**Mounting Bushing:** Nickel-plated copper alloy.

**Insulating Spacers:** Rigid plastic.

**Springs:** Nickel-plated copper alloy. Integral contacts are plated.

**Tip, Shunt and Sleeve Terminals:** Silver-plated copper alloy.

**Hardware:** Supplied with one, **P15331** nickel-plated copper alloy hex nut, and one **S29571** nickel-plated copper alloy flat washer.

**MATERIAL - TR1PC**

**Threaded Bushing:** Nickel-plated copper alloy.

**Tip Spring:** Copper alloy.

**Sleeve/Ground Terminal:** Copper alloy tin-lead with nickel underplate.

**MECHANICAL - TR1PC:**

**Life:** 10,000 insertion/withdrawal cycles, minimum.

**Insertion/Withdrawal Forces:** 11 ounces insertion, 11 ounce minimum withdrawal.

**ENVIRONMENTAL - TR1PC:**

**Thermal Range:** -55°C to +85°C (non-operating); -20°C to +65°C (operating).

**Thermal Shock:** Per MIL-STD-202, method 107.

**Humidity:** Per MIL-STD-202, method 106.

**Salt Spray:** Per MIL-STD-202, method 101.

**SPECIFICATIONS - MICRO-D JAX****MECHANICAL:**

**Life:** 10,000 insertion/withdrawal cycles minimum.

**Insertion/Withdrawal Forces:** 11 ounce insertion, 11 ounce minimum withdrawal.

**ELECTRICAL:**

**Contact Resistance:** .010 ohms maximum (initial), .020 ohms maximum (after humidity, durability exposure), .10 ohms maximum (after salt spray).

**Insulation Resistance:** 10,000 MΩ minimum (initial), 1,000 MΩ minimum (after humidity, durability exposure).

**Dielectric Withstanding Voltage:** 500 V AC maximum.

**Contact Rating:** .125 A, 125 V AC.

**ENVIRONMENTAL:**

**Thermal Range:** -55°C to +85°C (non-operating); -20°C to +65°C (operating).

**Thermal Shock:** Per MIL-STD-202, method 107.

**Humidity:** Per MIL-STD-202, method 106.

**Salt Spray:** Per MIL-STD-202, method 101.

**MATERIAL:**

**Housing:** Glass reinforced plastic. **Insulation:** Rigid plastic.

**Mounting Bushing (Micro-D):** Nickel-plated copper alloy.

**Mounting Bracket (Right-Angle Micro-D):**

Nickel-plated copper alloy.

**Tip Spring:** Silver-plated copper alloy.

**Shunt Terminal:** Silver-plated copper alloy.

**Sleeve Terminal (Micro-D):** Steel, tin-plated.

**Sleeve Terminal (Right-Angle Micro-D):** Silver-plated copper alloy.

**Hardware (Micro-D):** Same as Micro-Jax (MDSL2A).

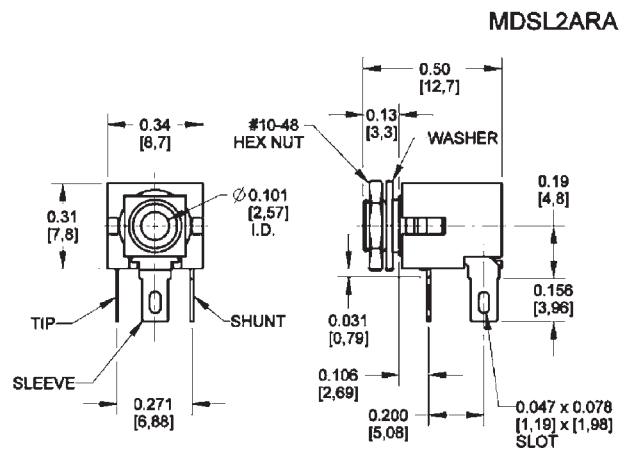
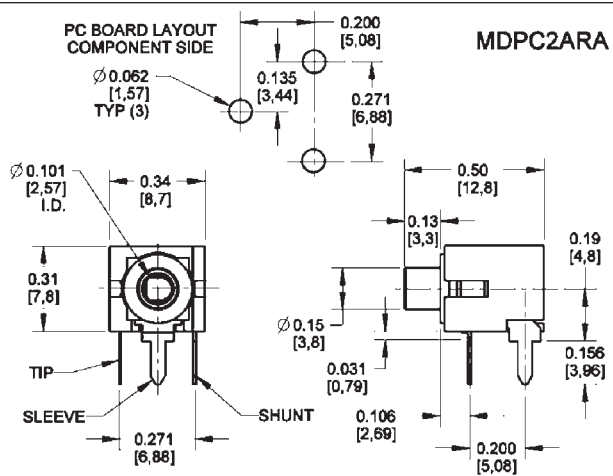
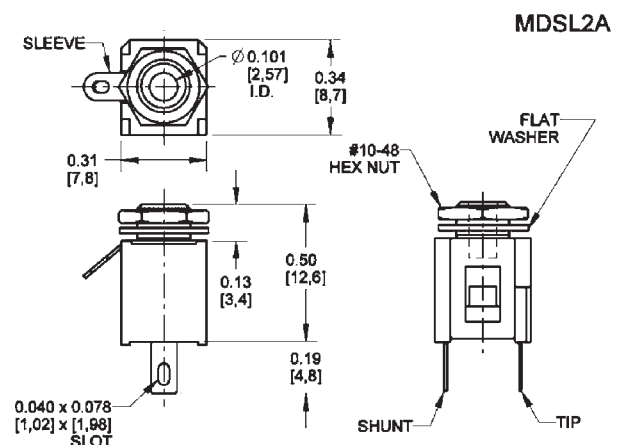
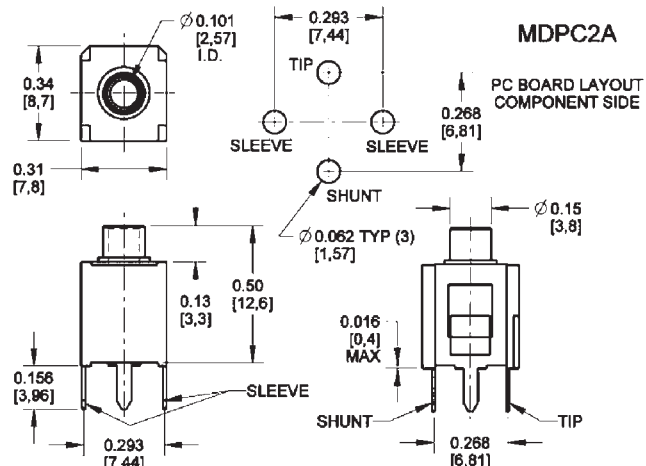
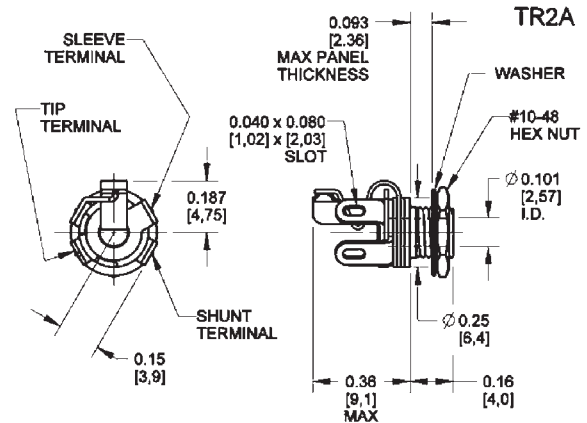
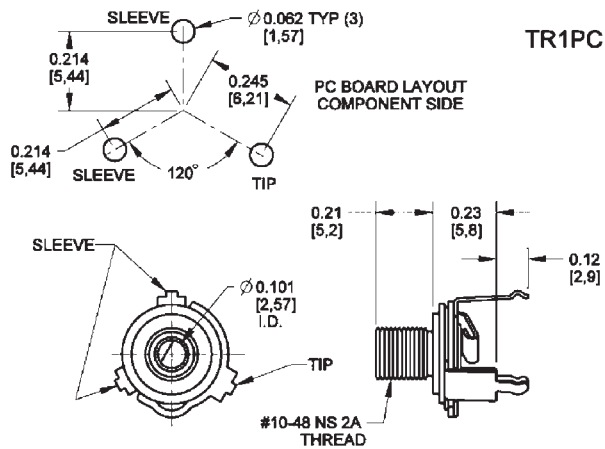
**Hardware (Right-Angle Micro-D):** Hex nut, nickel-plated copper alloy, **Number P15331**; flat washer, nickel-plated copper alloy **S29571**; not supplied with MDPC2A.

Part No.	Jack Schem. <sup>1</sup>	Typical Mating Plug <sup>2</sup>	Part No.	Jack Schem. <sup>1</sup>	Typical Mating Plug <sup>2</sup>
TR2A	III	850	MDSL2A	III	850
TR1PC			MDPC2ARA		
MDPC2A			MDSL2ARA		

All are 2-Conductor (closed circuit). Note 1.: See Jack Schematics page 79 and 80. Note 2.: See Plugs Section for mating information.

DIMENSIONS ARE FOR REFERENCE ONLY  
Inch  
(mm)

## .101" SUBMINIATURE PHONE JACKS

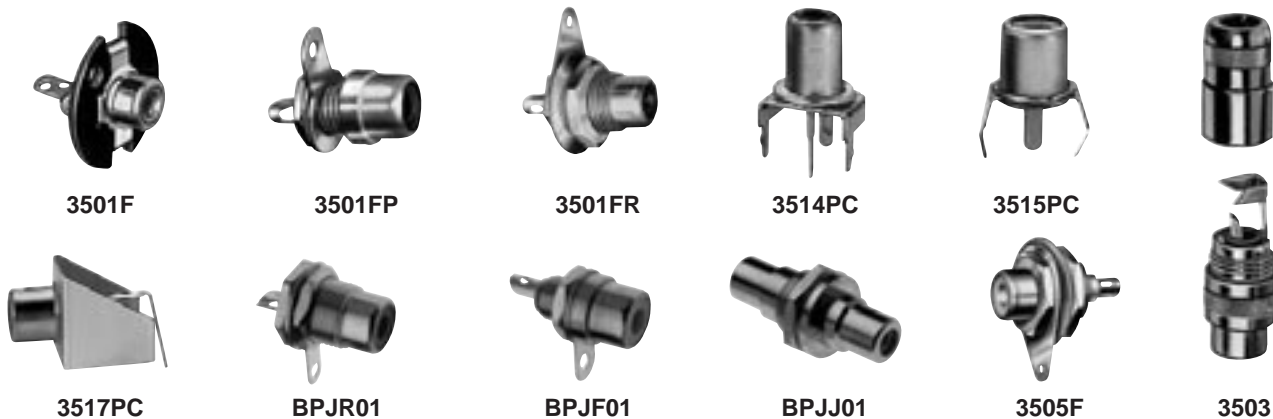


DIMENSIONS ARE FOR REFERENCE ONLY

$\frac{\text{Inch}}{(\text{mm})}$



## BULKHEAD PHONO JACKS



## FEATURES AND BENEFITS

- Front or rear mount configurations
- Durable plated machined brass construction
- All mounting hardware is included

## APPLICATIONS

- Audio
- Video
- General Purpose Electronics

## OPTIONS

- Front or rear mount solder type receptacles
- Jack to jack bulkhead configuration
- Insulator colors
- Gold or nickel plating

(See next page for drawings.)

## SPECIFICATIONS

**Material and Platings Housing:**

Nickel or Gold-plated Brass

**Contact:** Nickel-plated Brass **Insulator:** ABS

**Hardware:** Nickel-plated Brass. Switchcraft introduces a complete line of bulkheadmount phono (RCA) jacks to meet the most critical audio, audio/video, and general-purpose electronic applications. These jacks are offered in front and rear mount solder type as well as jack to jack bulkhead configurations. These jacks are available with black, white, blue, green, red, and yellow insulators and nickel or gold plated bodies. All mounting hardware is included.

**Housing:** Nickel or gold plated, copper alloy  
(3514PC, 3515PC, 3517PC: Nickel plated, steel)

**Terminals:** Nickel plated, copper alloy (3515PC: Tin plated, copper alloy)

**Bushing:** Nickel-plated, copper alloy (3515PC: Ceramic)

**Insulators:** Thermoplastic

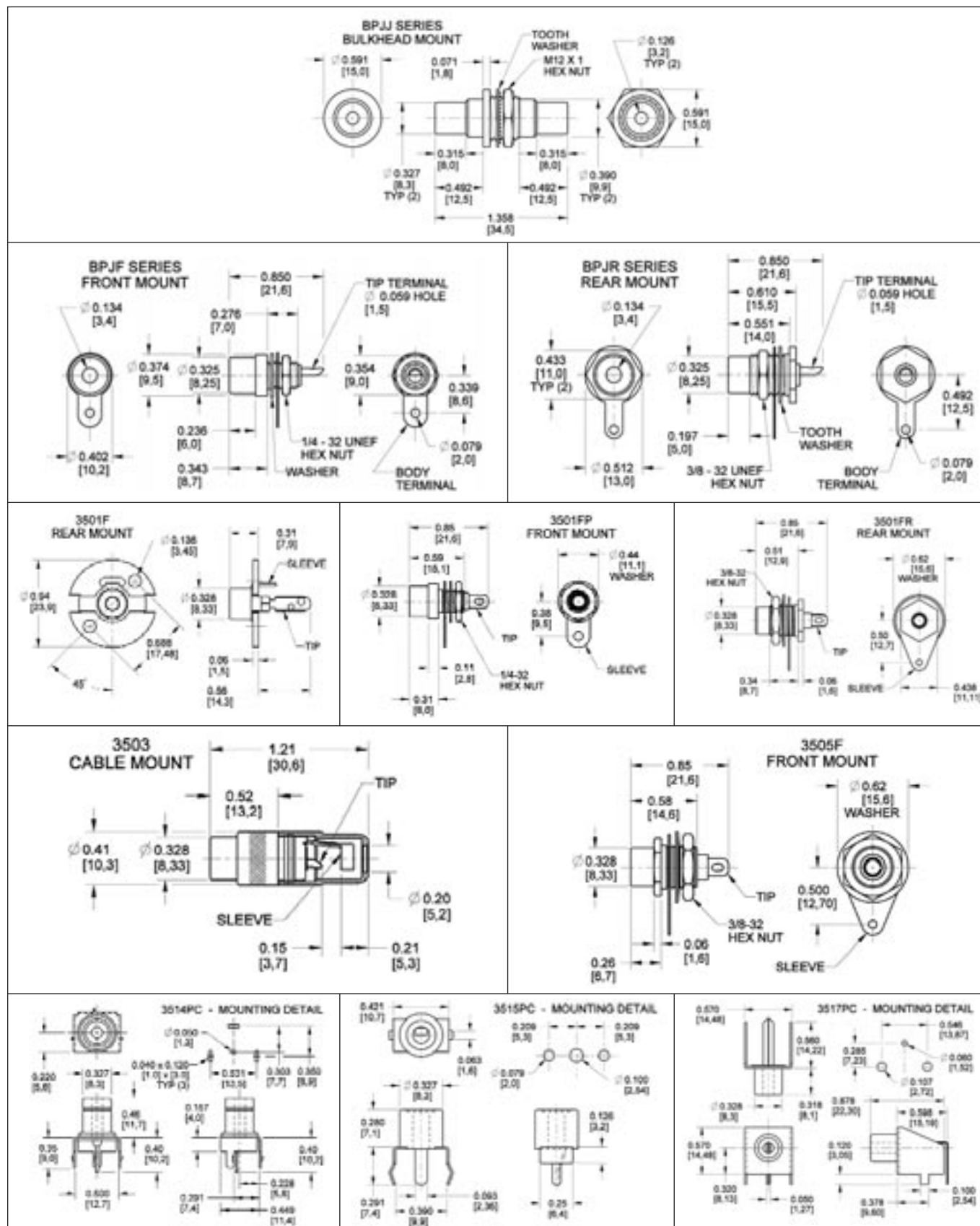
(3517PC: Ceramic and glass filled thermoplastic)

Part Number	Description
BPJR01	Rear mount, black insulator
BPJR01AU	Rear mount, black insulator, gold plated
BPJR02	Rear mount, red insulator
BPJR02AU	Rear mount, red insulator, gold plated
BPJR03	Rear mount, white insulator
BPJR03AU	Rear mount, white insulator, gold plated
BPJR04	Rear mount, yellow insulator
BPJR04AU	Rear mount, yellow insulator, gold plated
BPJR05	Rear mount, blue insulator
BPJR05AU	Rear mount, blue insulator, gold plated
BPJR06	Rear mount, green insulator
BPJR06AU	Rear mount, green insulator, gold plated
3501F	Rear mount, rigid plastic mounting flange
3501FR	Rear mount, natural insulator
For insulated mounting, order S1028 and S1029 insulating washers	
BPJF01	Front mount, black insulator
BPJF01AU	Front mount, black insulator, gold plated
BPJF02	Front mount, red insulator
BPJF02AU	Front mount, red insulator, gold plated
BPJF03	Front mount, white insulator
BPJF03AU	Front mount, white insulator, gold plated
BPJF04	Front mount, yellow insulator
BPJF04AU	Front mount, yellow insulator, gold plated

Part Number	Description
BPJF05	Front mount, blue insulator
BPJF05AU	Front mount, blue insulator, gold plated
BPJF06	Front mount, green insulator
BPJF06AU	Front mount, green insulator, gold plated
3501FP	Front Mount, natural insulator
3505F	RF version, uses low-loss nylon insulation
For insulated mounting, order S2207 and S1564 insulating washers	
BPJJ01	Feed through, black insulator
BPJJ01AU	Feed through, black insulator, gold plated
BPJJ02	Feed through, red insulator
BPJJ02AU	Feed through, red insulator, gold plated
BPJJ03	Feed through, white insulator
BPJJ03AU	Feed through, white insulator, gold plated
BPJJ04	Feed through, yellow insulator
BPJJ04AU	Feed through, yellow insulator, gold plated
BPJJ05	Feed through, blue insulator
BPJJ05AU	Feed through, blue insulator, gold plated
BPJJ06	Feed through, green insulator
BPJJ06AU	Feed through, green insulator, gold plated
3503	Extension jack, shielded handle
3514PC	Vertical PC mount, nickel plated steel bushing
3515PC	Vertical PC mount, ceramic bushing
3517PC	Horizontal PC mount, nickel plated steel bushing

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## PHONO JACKS (continued)



DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## PHONO JACKS AND PHONO JACK SETS



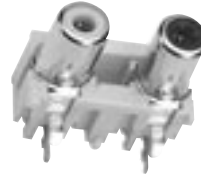
PJRAN1X1U03



PJRAS1X1S04



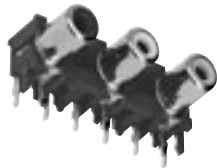
PJRAS1X2S02



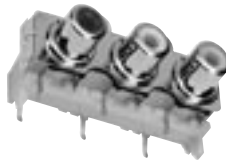
PJRAN2X1U02



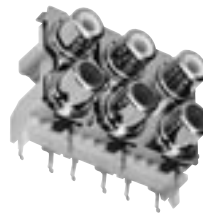
PJRAS2X1S01



PJRAN3X1U03



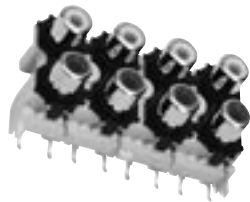
PJRAS3X1S01



PJRAS3X2S01



PJRAS2X2S01



PJRAS4X2U01



PJRAS1X3S01



PJRAN3X1U02



PJRAS1X3U01

Switchcraft, the industry recognized leader in audio-video connectivity, introduces the addition of a comprehensive line of PCB Mount RCA Jacks and Jack Sets. Switchcraft's newest product family addresses the requirements of the most critical audio and audio/video applications. 1, 2, 3, 4, 6, and 8 position jack sets are offered in a variety of color combinations with numerous plating, grounding, shielding, mounting, and justification options.

**FEATURES AND BENEFITS**

- High temperature plastic housings and long life contacts
- Snap fit PCB contacts and housings
- Low profile footprint
- Numerous options and configurations

**APPLICATIONS**

- Audio
- Video
- General Purpose Electronics

**OPTIONS**

- Right angle and straight PCB mount
- Horizontal and vertical justification

- Shielding and grounding
- Bulkhead mounting screw
- Colors
- Plating

**SPECIFICATIONS  
ELECTRICAL**

**Temperature Range:** -25 to +80°C

**Rated Voltage:** 34V DC or AC

**Withstand Voltage:** 500V

**Rated Current:** 2A DC or AC

**Dielectric Strength:** 500V AC @ 1 minute

**Contact Resistance:** <30 mohms

**Insertion Force\*:** <29.4N

**Extraction Force\*:** 1N to 29.4N

\* Depends Upon Mating Plug

**MATERIAL AND PLATINGS**

**Housing:** UL94-HB Rated, ABS

**Insulators:** ABS

**Ground Shell and Terminal:** Nickel or Gold Plated, Copper Alloy

**Terminals:** Tin Plated Copper Alloy

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

### PHONO JACKS AND PHONO JACK SETS (continued)

#### 1 POSITION PCB MOUNT

Part Number	Color
PJРАН1Х1U01	Black
PJРАН1Х1U02	White
PJРАН1Х1U03	Red
PJРАН1Х1U04	Yellow
Call factory	Green
Call factory	Blue
PJРАS1Х1S01	Black
PJРАS1Х1S02	White
PJРАS1Х1S03	Red
PJРАS1Х1S04	Yellow
Call factory	Green
Call factory	Blue

#### 3 POSITION PCB MOUNT

Part Number	Color
PJРАН3Х1U01	Red/Yellow/White
PJРАН3Х1U02	Red/Green/Blue
PJРАS3Х1S01	Red/White/Yellow
PJРАS3Х1U03	Red/Green/Blue
PJРАS1Х3S01	Red White Yellow
PJРАS1Х3S02	Green Blue Red

#### 2 POSITION PCB MOUNT

Part Number	Color
PJРАН2Х1U01	Red/White
PJРАН2Х1U02	White/Red
PJРАS2Х1S01	Red/White
PJРАS2Х1S02	White/Red
PJРАS1Х2S01	Red White
PJРАS1Х2S02	White Red

#### 4, 6, & 8 POSITION PCB MOUNT

Part Number	Color
PJРАS2Х2S01	White x 2 Red x 2
PJРАS3Х2S01	White x 3 Red x 3
PJРАS3Х2S02	Red/White/Yellow Red/White/Yellow
PJРАS4Х2U01	White x 4 Red x 4

#### COMBINATION PHONO AND S-VIDEO PCB MOUNT

Part Number	Color
PJРАН3Х1U02	Red/White/Yellow
PJРАS1Х3U01	Yellow White Red

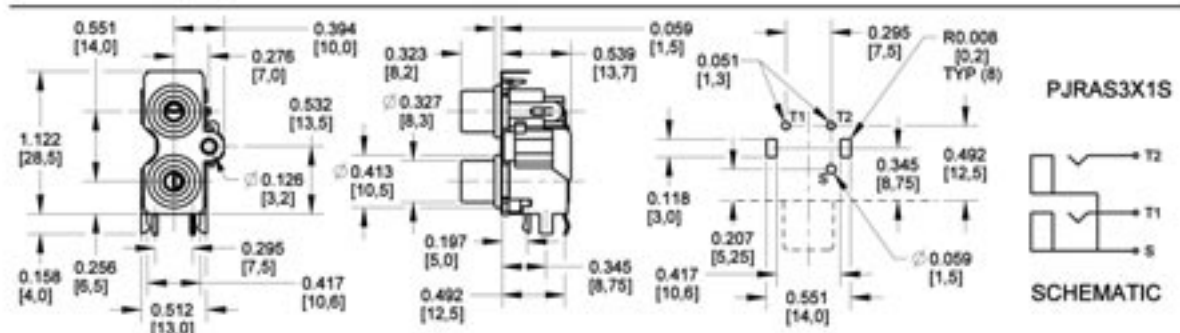
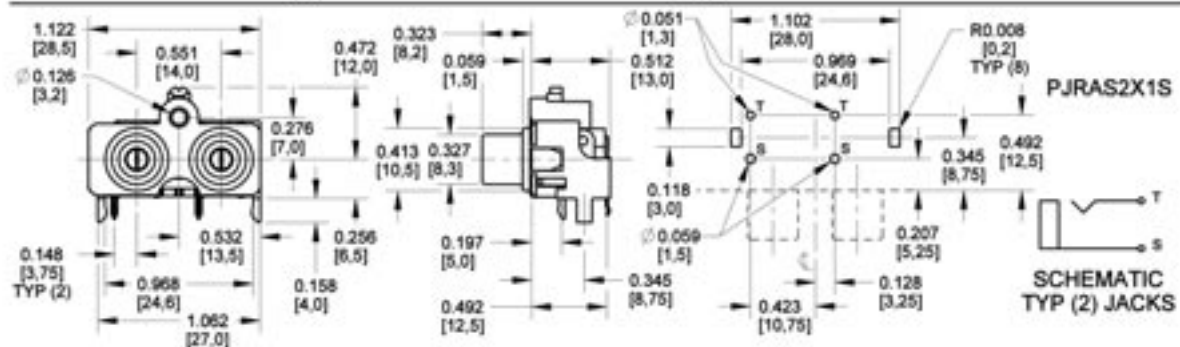
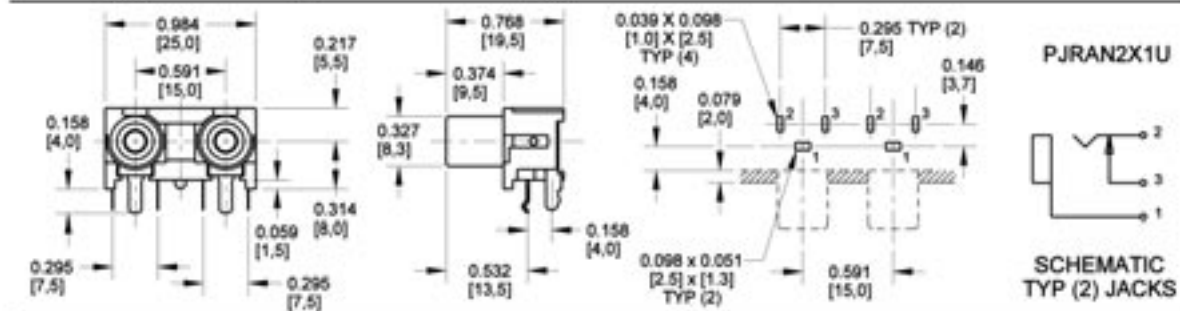
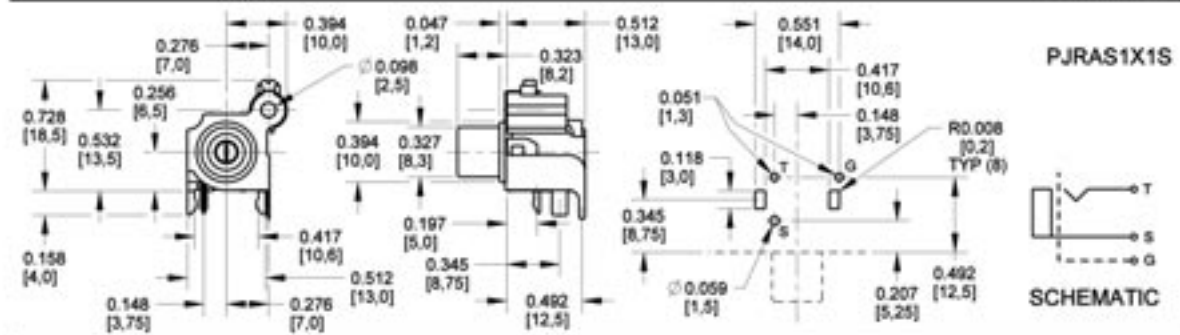
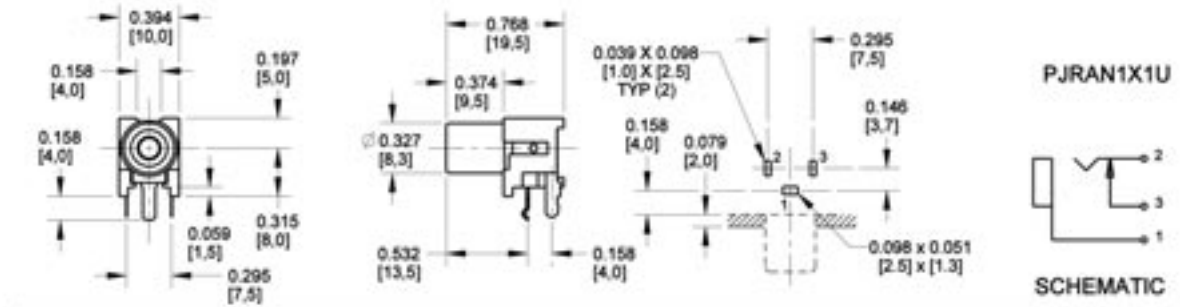
Ordering Information (Contact factory for color, shielding, grounding, justification options.)

PJ	RA	S	#	X	#	S	01	AU
Product Type	Justification	Mounting	Positions Horizontal		Positions Vertical	Shielding	Version	Ground Shell Plating
Phono Jack	RA - Right Angle ST - Straight	S - Screw(s) N - No Screws	1,2,3, or 4	By	1,2, or 3	S - Shielded U - Unshielded		AU/Gold

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$



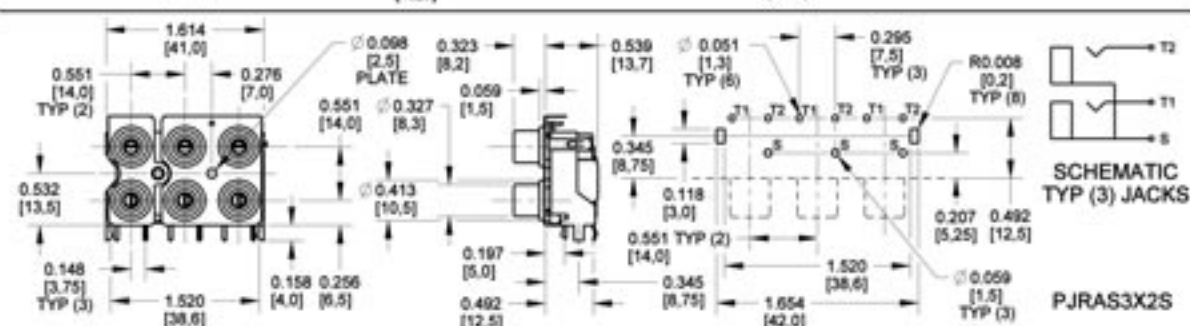
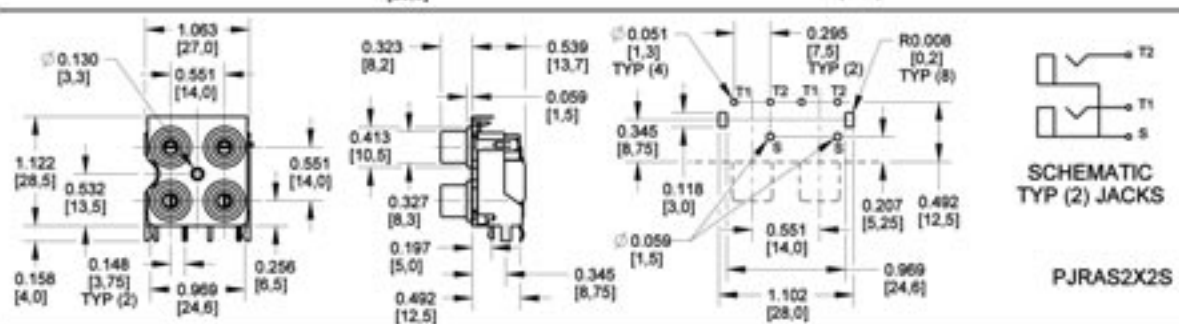
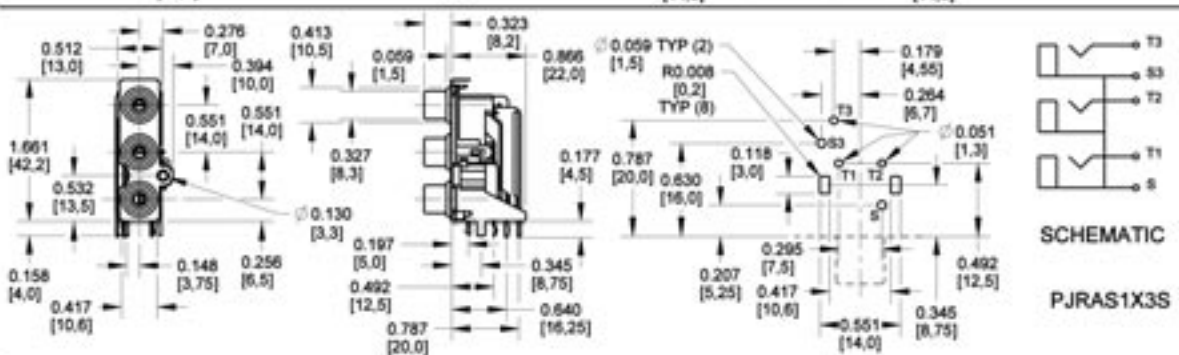
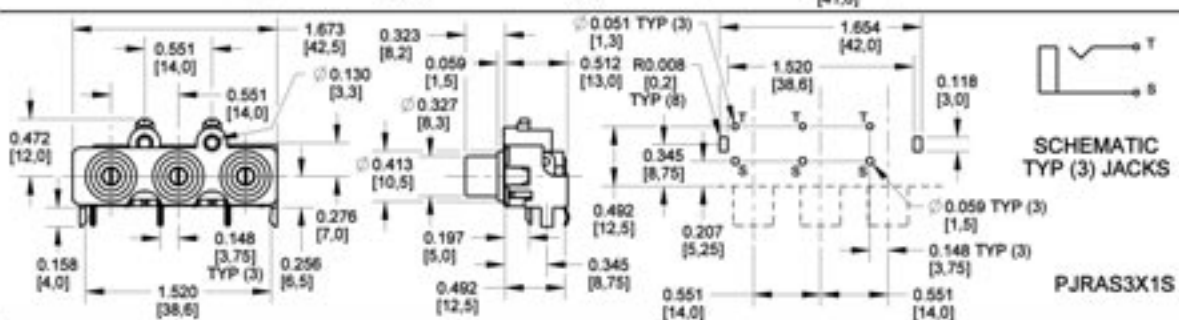
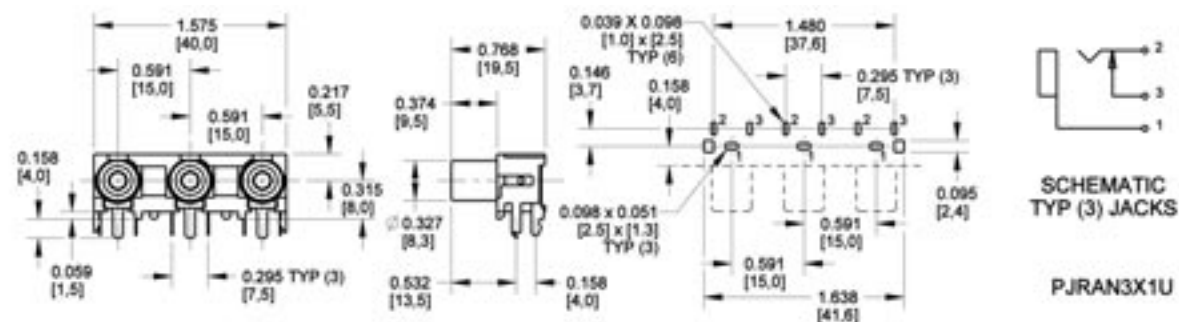
PHONO JACKS AND PHONO JACK SETS (continued)



DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{\text{mm}}$



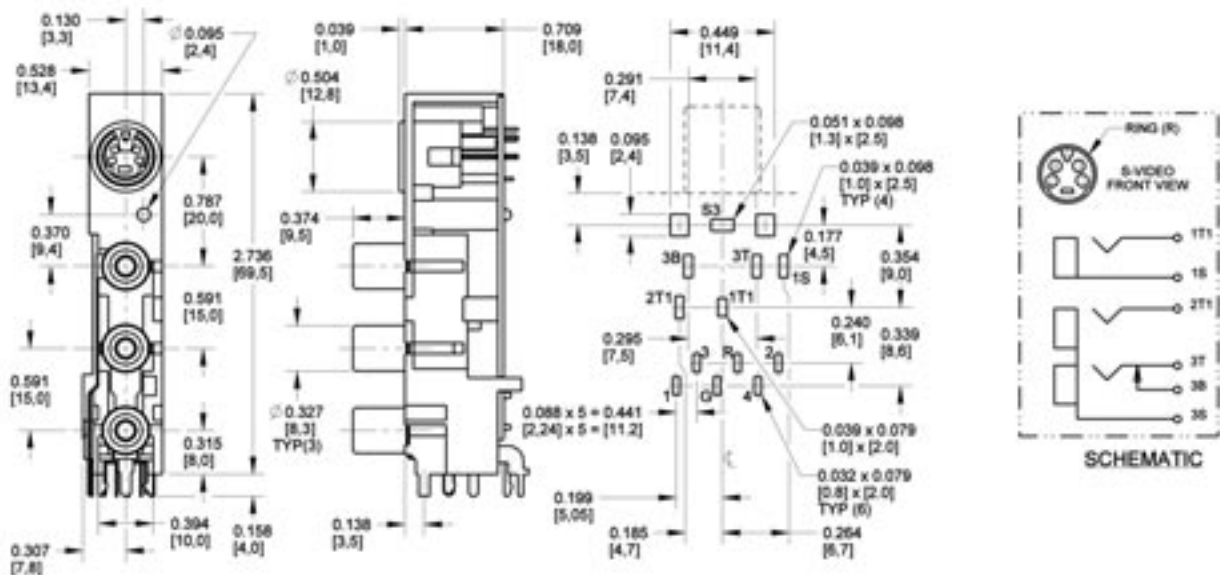
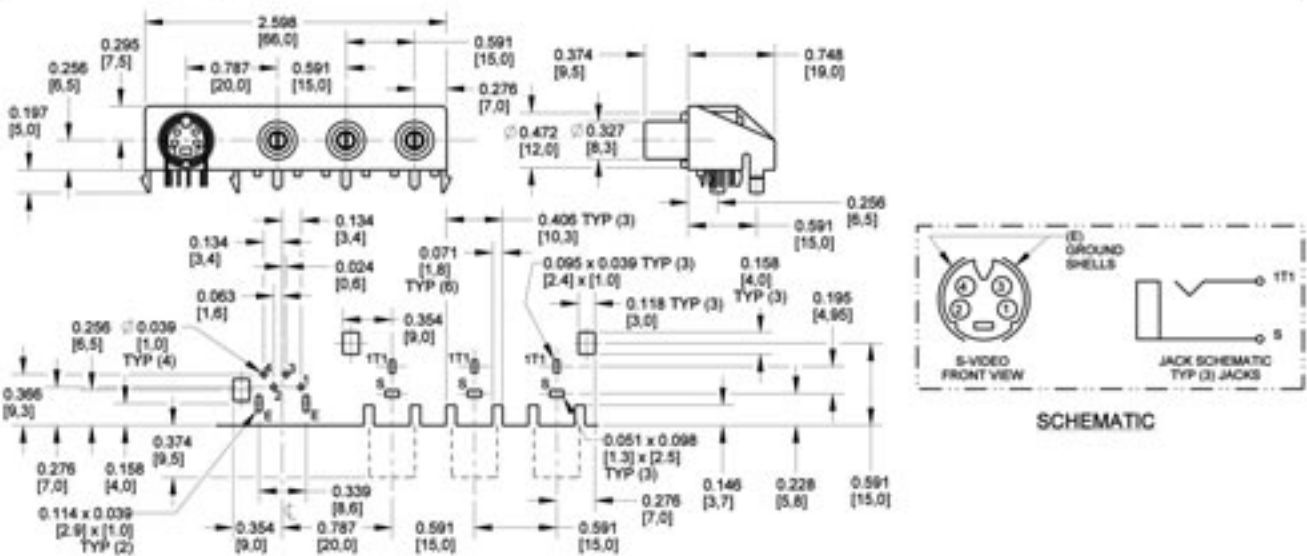
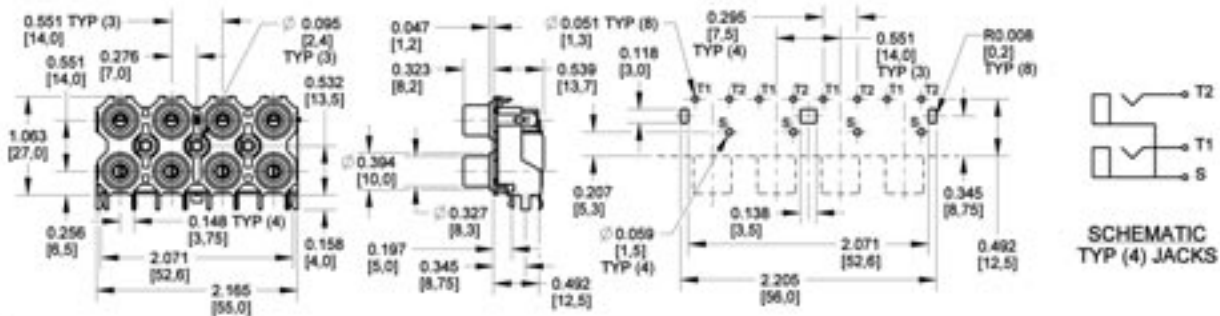
## PHONO JACKS AND PHONO JACK SETS (continued)



DIMENSIONS ARE FOR REFERENCE ONLY

Inch  
(mm)

PHONO JACKS AND PHONO JACK SETS (continued)



DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

### RIGHT ANGLE MINIATURE POWER JACKS



RASM 712



RASM 722



RASM 732P



RAPC732OF



RAPC742



RASM752STR



RASM752TR



RASM742TR

#### SPECIFICATIONS:

**Materials:** Housing: Thermoplastic

**Terminals:**

RAPC700:

**Sleeve:** Silver plated copper alloy

**Tip:** Nickel plated, copper alloy

RAPC742, RASM742TR, RAPC732OF, RAPC742OF, RAPC752, RAPC752S, RASM752TR, RASM752STR:

**Sleeve and tip:** Silver plated tin

**Shunt:** Silver plated copper alloy

RASM700, RASH700:

**Sleeve:** Tin plated copper alloy

**Tip:** Nickel plated copper alloy)

#### ELECTRICAL

**Current Rating:** 3A

(RAPC700, RASH700, RASM700: 5A)

**Contact Resistance:** <50 mohms

**Insulation Resistance:** 100 mohms min.

(RAPC700, RASH700, RASM700: 30 megohms @ 100V DC)

**Dielectric Withstanding Voltage:** 250 VAC@ 1 minute

#### MECHANICAL:

**Lifecycles:** 5,000 min.

Part Number	Pin Size*	Description
RAPC712	0.100"/2.5mm	Right Angle, PC mount
RASH712	0.100"/2.5mm	Right Angle, hybrid mount
RASM712	0.100"/2.5mm	Right Angle, SMT mount
RAPC722	0.080"/2.0mm	Right Angle, PC mount
RASH722	0.080"/2.0mm	Right Angle, hybrid mount
RASM722	0.080"/2.0mm	Right Angle, SMT mount
RAPC732	0.050"/1.3mm	Right Angle, PC mount
RAPC732OF	0.050"/1.3mm	Right Angle, PC mount <sup>1</sup>
RASH732	0.050"/1.3mm	Right Angle, SMT mount
RASM732	0.050"/1.3mm	Right Angle, hybrid mount
RAPC742	0.040"/1.0mm	Right Angle, PC mount
RAPC742OF	0.040"/1.0mm	Right Angle, PC mount <sup>1</sup>
RASM742TR	0.040"/1.0mm	Right Angle, SMT mount <sup>2</sup>
RAPC752	0.025"/0.65mm	Right Angle, PC mount
RAPC752S	0.025"/0.65mm	Right Angle, PC mount <sup>3</sup>
RASM752TR	0.025"/0.65mm	Right Angle, SMT mount <sup>2</sup>
RASM752STR	0.025"/0.65mm	Right Angle, SMT mount <sup>4</sup>

Note: Contact factory for specific information on tape and reel options. \*Pin Size (in/mm) 1. Open Frame 2. Tape and Reel. 3. Shielded 4. Tape and Reel, Shielded.

Note: Available with P locating post as an option.

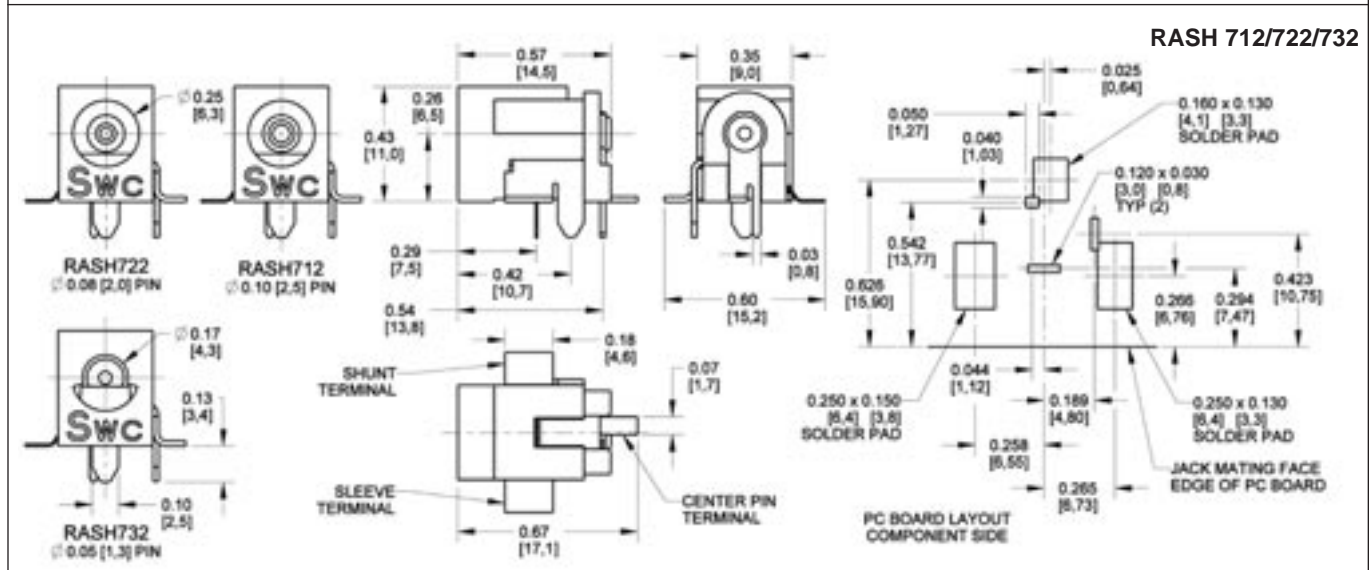
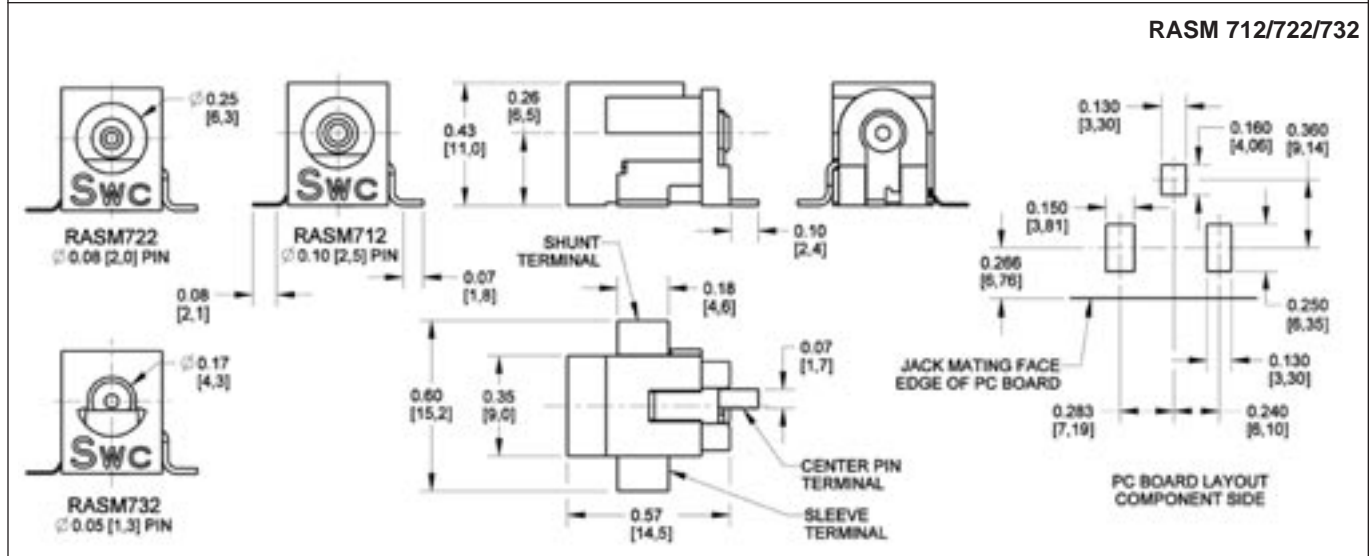
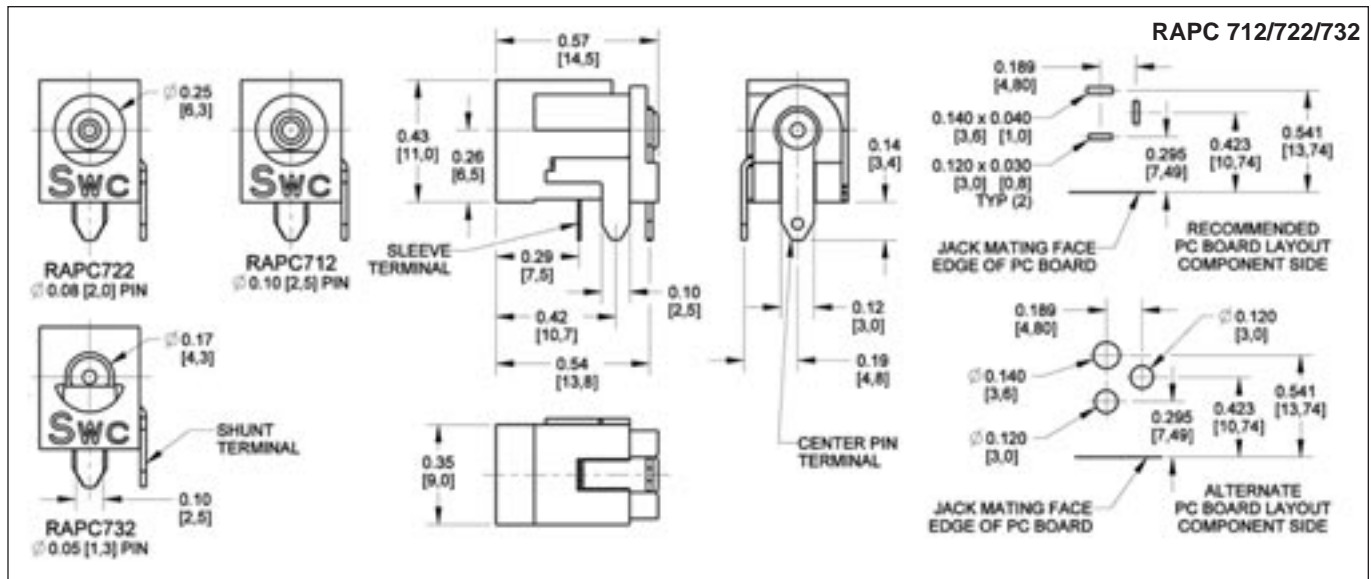
Note: Available with tin-plating as a special order.

Note: Available with Hi-temp material, contact factory for details.

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{\text{(mm)}}$

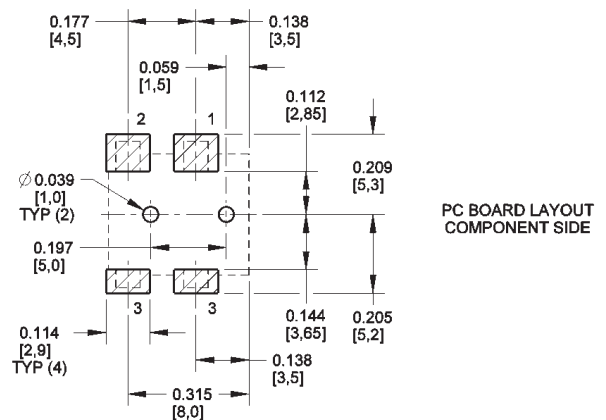
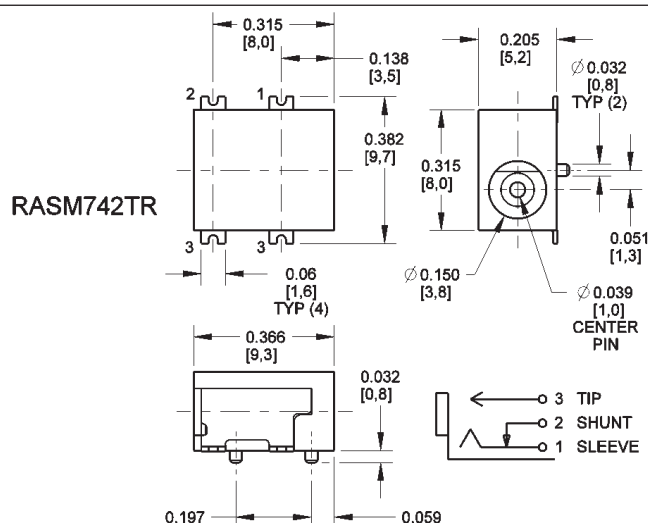
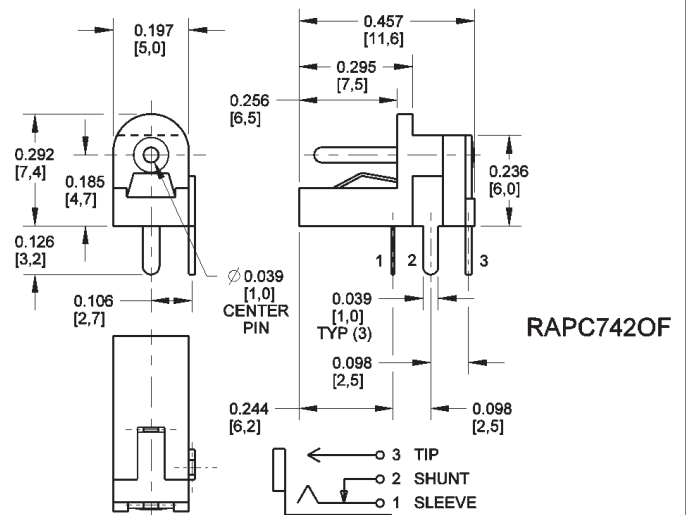
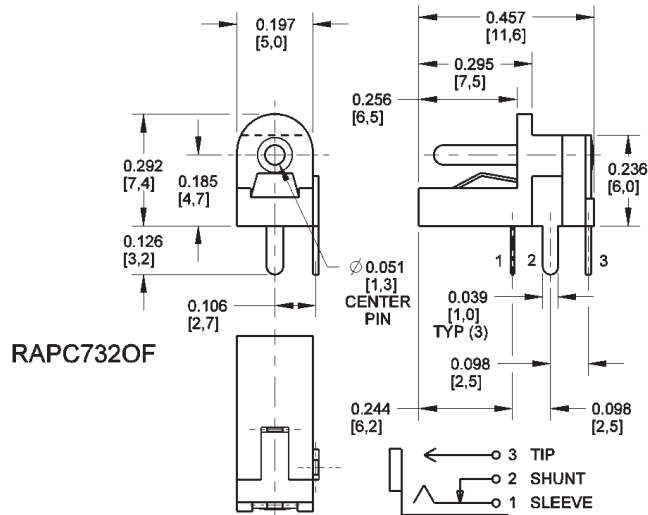
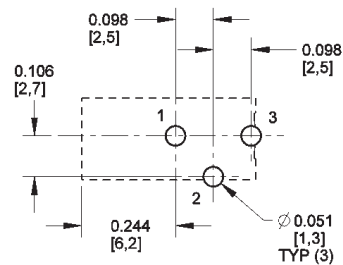
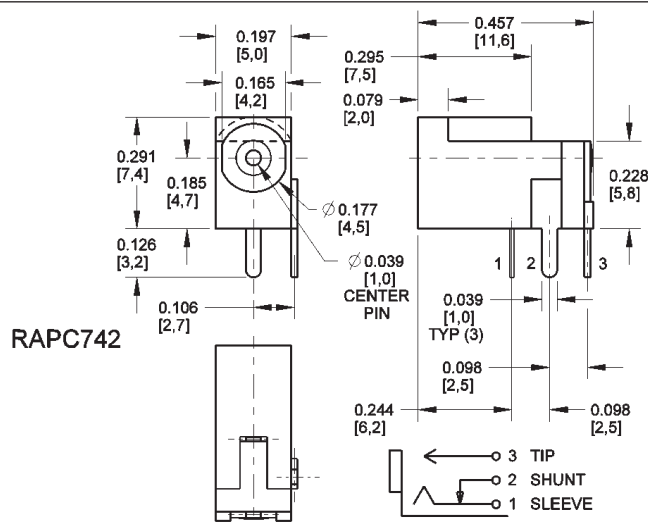


RIGHT ANGLE MINIATURE POWER JACKS (continued)



DIMENSIONS ARE FOR REFERENCE ONLY Inch  
(mm)

### RIGHT ANGLE MINIATURE POWER JACKS (continued)

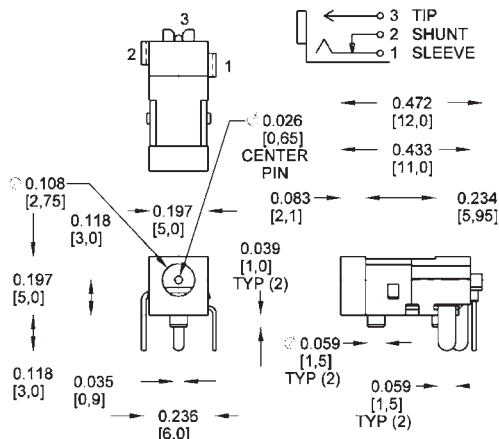


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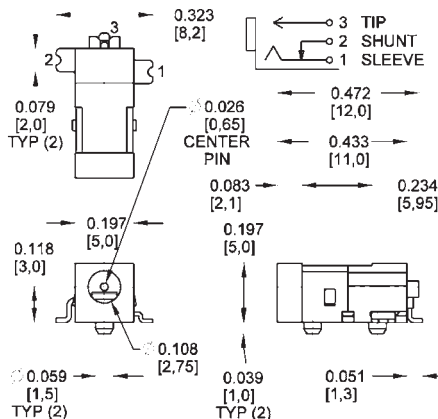


## RIGHT ANGLE MINIATURE POWER JACKS (continued)

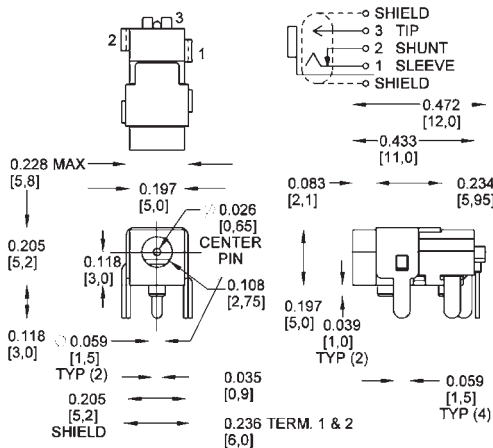
RAPC752

PC BOARD LAYOUT  
COMPONENT SIDE

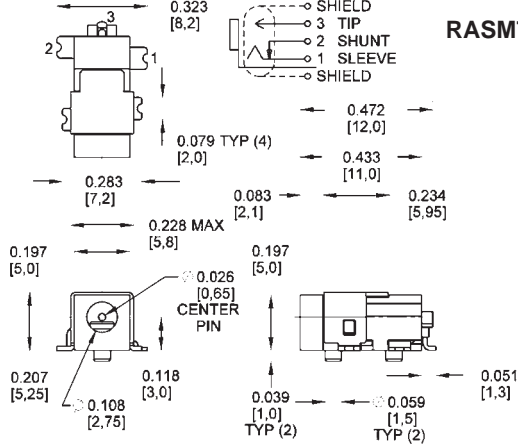
RASM752TR

PC BOARD LAYOUT  
COMPONENT SIDE

RAPC752S

PC BOARD LAYOUT  
COMPONENT SIDE

RASM752STR

PC BOARD LAYOUT  
COMPONENT SIDEDIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## STRAIGHT MINIATURE POWER JACKS



712A



PC712A



L722A



2C1072



L712RA

**FEATURES:**

- Automatic switch over from AC to DC permitted by sleeve shunt spring.
- Split center pin shaped to hold mating plug firmly.
- Bushing length available as 0.219" or extended 0.319" to permit use in thicker panels.
- Non-turn mounting possible using standard "D" shape bushing.
- Insulated mounting hardware available.
- Right angle versions offer "kinked" PC terminals for added board retention.

**MATERIALS:**

**Housing:** Thermoplastic

**Bushing:** Plated copper alloy

**Terminals:** Plated copper alloy

**Insulators:** Rigid Plastic

**Hardware:** Supplied with one P2439 nickel plated copper alloy hex nut, and one P2441 nickel plated steel flat washer

**ELECTRICAL:**

**Current Rating:** 5A, 12V DC resistive

**Contact Resistance:** 0.01 Ohms max. (initial), 0.02 Ohms max. (after humidity, durability exposure), 0.10 Ohms max. (after salt spray)

**Insulation Resistance:** 10,000 Mohms min. (initial), 1,000 Mohms min. (after humidity, durability exposure)

**Dielectric Withstanding Voltage:** 500 VAC max.

**MECHANICAL:**

**Lifecycles:** 10,000 cycles min.

Part Number	Pin Size*	Description	Typical Mating Plug
712A	0.100"/2.5mm	Solder lugs	760
712RA	0.100"/2.5mm	Right angle PC terminals	760
L712A	0.100"/2.5mm	Solder lugs, long bushing	761K
L712RA	0.100"/2.5mm	Right angle PC terminals, long bushing	761K
PC712A	0.100"/2.5mm	Straight PC terminals	760
PCL712A	0.100"/2.5mm	Straight PC terminals, long bushing	761K
722A	0.080"/2.0mm	Solder lugs	S760
722RA	0.080"/2.0mm	Right angle PC terminals, long bushing	S760
L722A	0.080"/2.0mm	Solder lugs, long bushing	S761K
L722RA	0.080"/2.0mm	Right angle PC terminals, long bushing	S761K
PC722A	0.080"/2.0mm	Straight PC terminals	S760
PCL722A	0.080"/2.0mm	Straight PC terminals, long bushing	S761K
732A	0.050"/1.3mm	Solder lugs	860
732RA	0.050"/1.3mm	Right angle PC terminals	860
PC732A	0.050"/1.3mm	Straight PC terminals	860
2C1072		Jack covers for 712A and 722A	

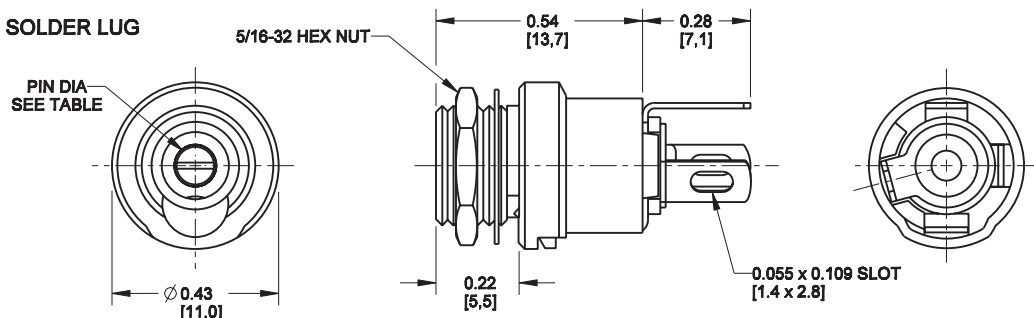
Note: For insulated mounting order **P2442** phenolic flat washer and **S4263** swaged fiber washer.

DIMENSIONS ARE FOR REFERENCE ONLY

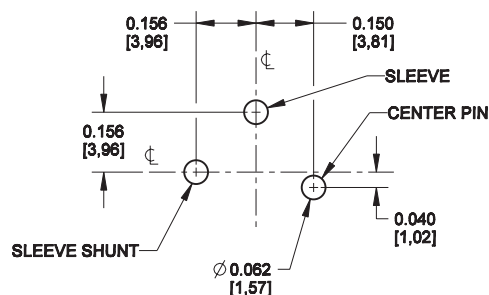
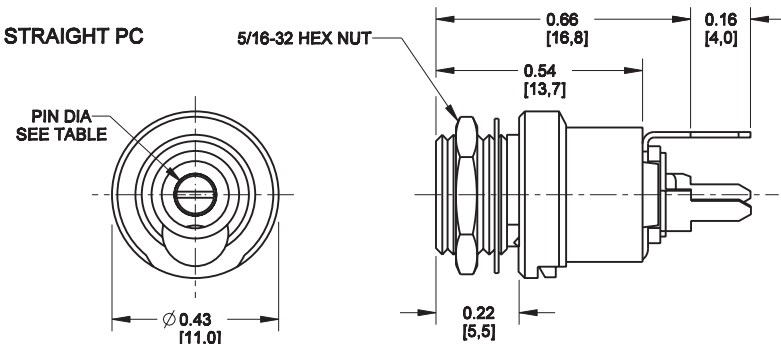
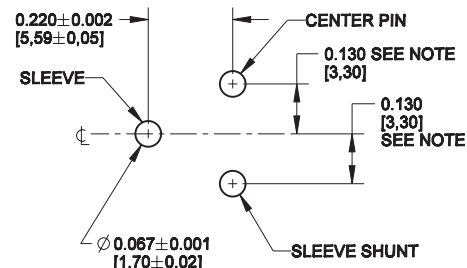
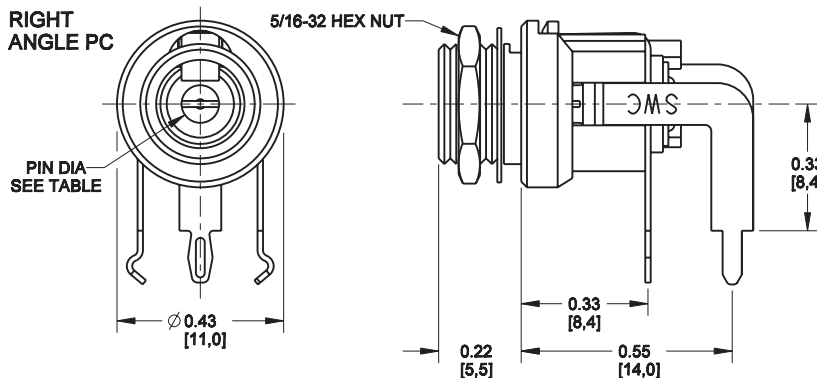
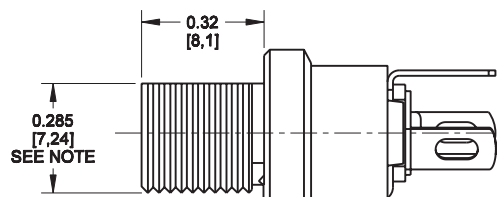
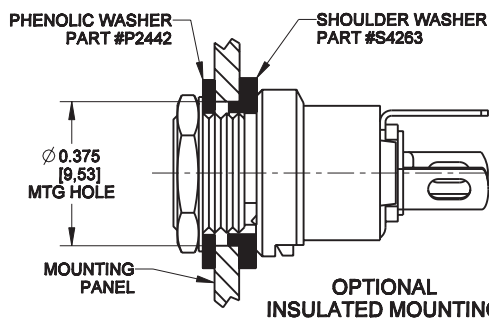
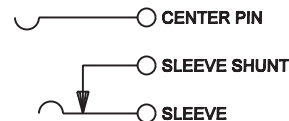
Inch  
(mm)

## STRAIGHT MINIATURE POWER JACKS (continued)

## SOLDER LUG



## STRAIGHT PC

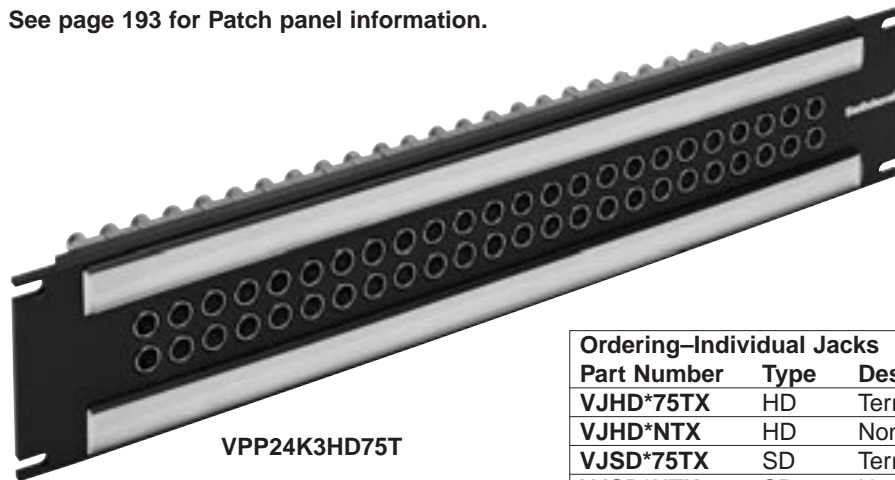
RECOMMENDED PC BOARD LAYOUT  
(COMPONENT SIDE)RIGHT  
ANGLE PCRECOMMENDED PC BOARD LAYOUT  
(COMPONENT SIDE)NOTE: 0.130 FOR HAND INSERTION  
0.135 FOR AUTOMATED INSERTIONNOTE: "D" HOLE FLAT IS ON THE BOTTOM  
OF RIGHT ANGLE JACKSOPTIONAL  
LONG BUSHING WITH "D" FLATOPTIONAL  
INSULATED MOUNTINGTYPICAL  
CIRCUIT DIAGRAMDIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## VJ SERIES

See page 193 for Patch panel information.



VJHD\*75TX



VPP24K3HD75T

## Ordering—Individual Jacks

Part Number	Type	Description
VJHD*75TX	HD	Terminated
VJHD*NTX	HD	Non-terminated
VJSD*75TX	SD	Terminated
VJSD*NTX	SD	Non-terminated

\*Add "N" for non-normalled version

## FEATURES AND BENEFITS

- HD Series meets SMPTE 292M Specifications
- SD Series has a bandwidth from DC to 1.75GHz
- Jacks feature rugged heavy duty housings

## VIDEO JACK SPECIFICATIONS

## ELECTRICAL

**Rated Bandwidth:** 2.4 GHz (HD), 1.75 GHz (SD)**Characteristic Impedance:** 75 ohms**Return Loss:** Better than -15 dB**Insertion Loss:** Better than -.5 dB**Contact Resistance:** Less than 20 milliohms**Termination Resistance:** 75 W,  $\pm 1\%$ **Center Conductor:** Accepts .090 pin diameter

## MECHANICAL

**Mechanical Shock:** Per MIL-STD-202, Method 213, Test condition I**Vibration:** Per MIL-STD-202, Method 201**Insertion Force:** 12 lbs. maximum**Withdrawal Force:** 3 lbs. minimum**Life Cycle:** 30,000

## MATERIAL

**Housing:** Zinc alloy, nickel plated**Center Contacts:** Copper alloy, gold plated**Switching Springs:** Copper alloy, gold plated**Grounding Contacts:**

HD Series - Copper alloy, gold plated

SD Series - Copper alloy, nickel plated

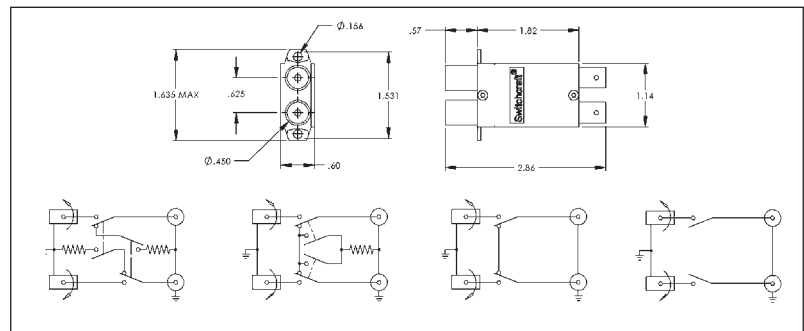
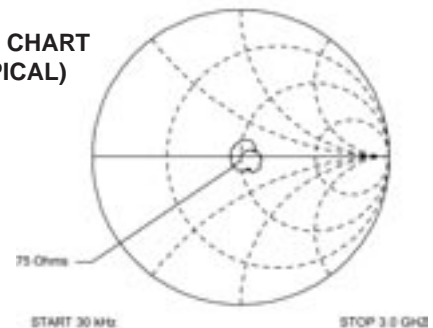
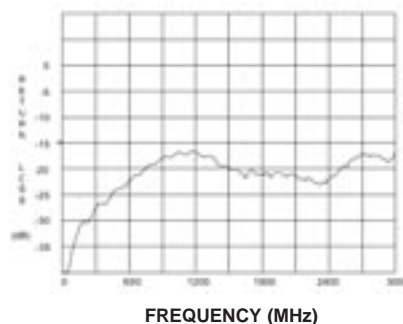
**Insulators:** Thermoplastic, UL 94V-0 rated

## ENVIRONMENTAL

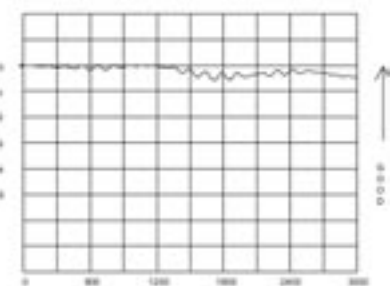
**Operating Temperature:** -40°C to 65°C**Storage Temperature:** -55°C to 85°C**Thermal Shock:** Per MIL-STD-202, Method 107**Moisture and Humidity:**

Per MIL-STD-202, Method 106.

The HD Series meets SMPTE 292M specifications for high definition video signaling, covering a bandwidth range from DC to 2.4GHz. The SD Series is perfect for serial digital, with a bandwidth from DC to 1.75GHz.

SMITH CHART  
(TYPICAL)NON-NORMALLED  
TERMINATEDNORMALLED  
TERMINATEDNORMALLED  
NON-TERMINATEDNON-NORMALLED  
NON-TERMINATED

FREQUENCY (MHz)



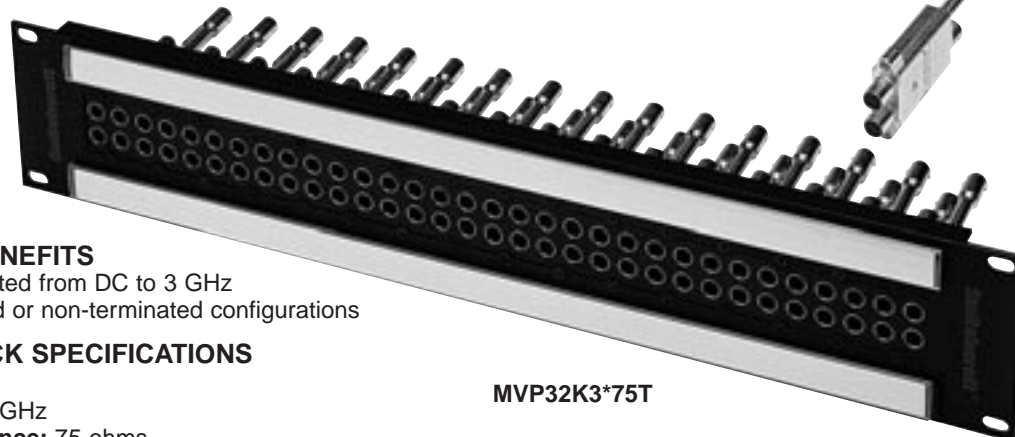
FREQUENCY (MHz)

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## MVJ SERIES

See page 196 for Patch panel information.

MVJ\*75T



## FEATURES AND BENEFITS

- Midsize video jacks rated from DC to 3 GHz
- Available in terminated or non-terminated configurations

## MIDSIZE VIDEO JACK SPECIFICATIONS

## ELECTRICAL

**Rated Bandwidth:** 3.0 GHz**Characteristic Impedance:** 75 ohms**Return Loss:** See Typical Return Loss Chart**Insertion Loss:** See Typical Insertion Loss Chart**Contact Resistance:** Less than 20 milliohms**Termination Resistance:** 75 W,  $\pm 1\%$ **Center Conductor:** Accepts .048 pin diameter

## MECHANICAL

**Mechanical Shock:** Per MIL-STD-202, Method 213, Test condition I**Vibration:** Per MIL-STD-202, Method 201**Insertion Force:** 12 lbs. maximum**Withdrawal Force:** 3 lbs. minimum**Life Cycle:** 30,000

## MATERIAL

**Housing:** Zinc alloy, nickel plated**Center Contacts:** Copper alloy, gold plated**Switching Springs:** Copper alloy, gold plated**Grounding Contacts:** Copper alloy, gold plated**BNC Insulators:** Teflon**Actuators:** Thermoplastic, UL94V-0 rated

## ENVIRONMENTAL

**Operating Temperature:**  $-40^{\circ}\text{C}$  to  $65^{\circ}\text{C}$ **Storage Temperature:**  $-55^{\circ}\text{C}$  to  $85^{\circ}\text{C}$ **Thermal Shock:** Per MIL-STD-202, Method 107**Moisture and Humidity:**

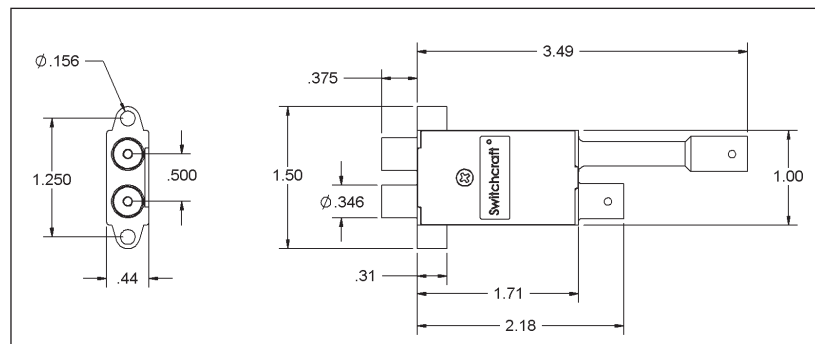
Per MIL-STD-202, Method 106

## Ordering Information

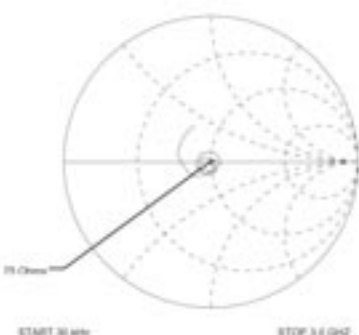
## Part

Number	Jack	Description
MVJ*75T	HD	Terminated
MVJ*NT	HD	Non-terminated

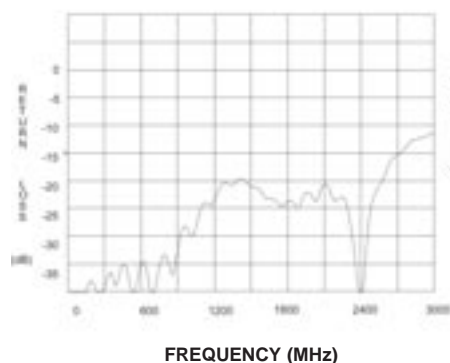
\*Add "N" for non-normalled version



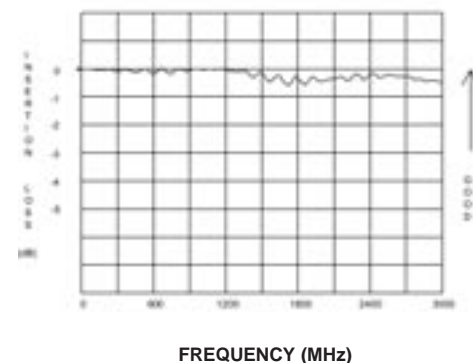
## SMITH CHART (TYPICAL)



## RETURN LOSS (TYPICAL)



## RETURN LOSS (TYPICAL)

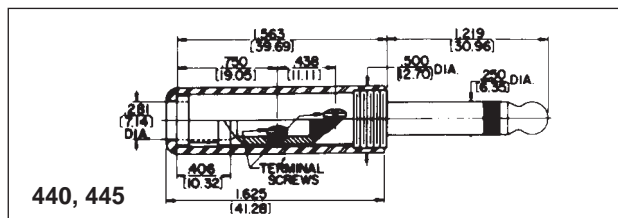
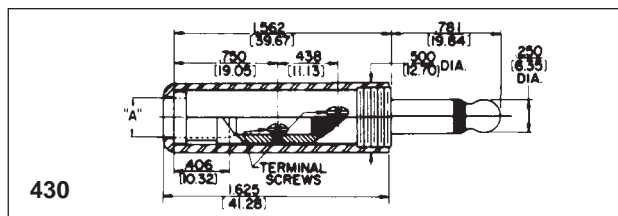
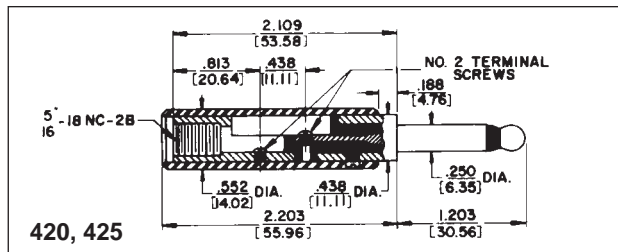
DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$



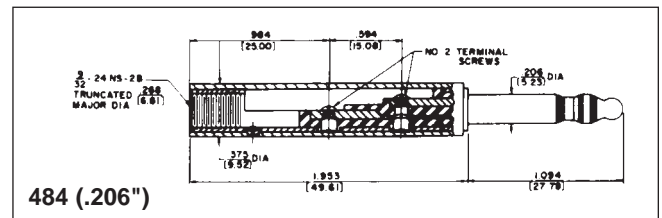
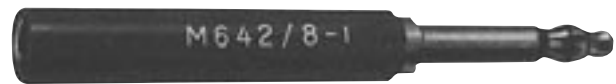
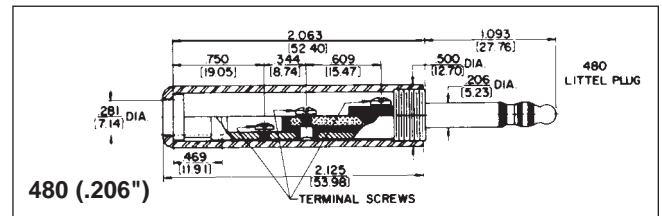
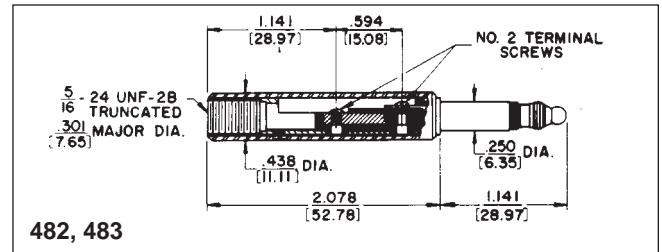
## MIL-TYPE 1/4" PHONE PLUGS



## 2-CONDUCTOR



## 3-CONDUCTOR



## FEATURES

Designed for high quality communication equipment to meet military requirements, This series features one-piece tip rod and one-piece sleeve and plug body, assembled together into a mode as inserts, providing a finished plug with complete continuity of thermoplastic insulation between top rod and plug sleeve. Internal (invisible externally) interlock mechanically engages the metal and plastic components providing a realistic lock to prevent parts shifting. Design and material in accordance with MIL-P-642(A), MIL part number molded or stamped on handle, manufacturer's trademark (as required by MIL specification) appears on plug body.

## SPECIFICATIONS

**Tip Rod, Body and Screws:** Copper alloy, natural finish.

**Terminals:** Tinned copper alloy.

**Insulation:** Thermoplastic, per MIL-P-22985, Type II, Class 1.

**Handles:** Thermoplastic, Type 6, per MIL-M-20693, Type II.

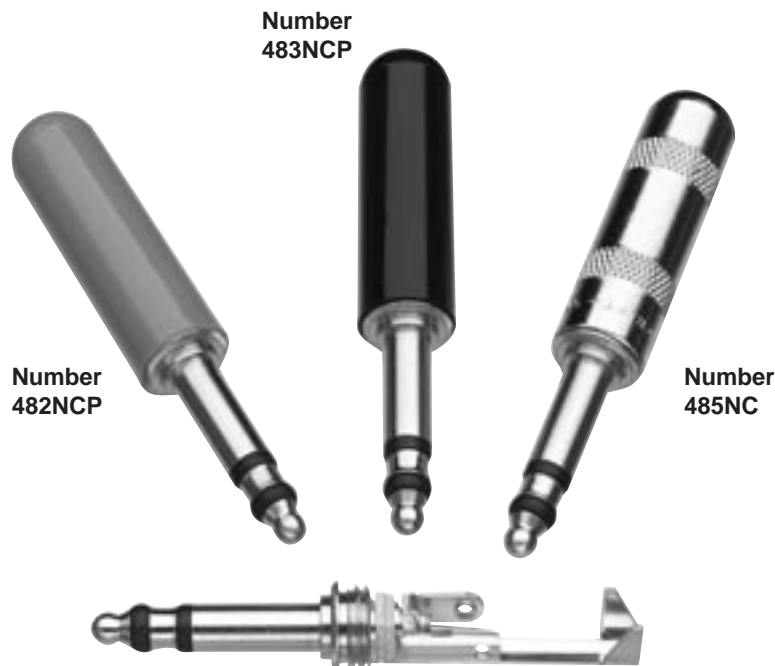
Shielded; machined from copper alloy, nickel-plated.

## STRAIN RELIEF CLAMP

For MIL-type Littell-Plug phone plugs. **P2380** conforms to Specification SC-A-7674-F - supplied with Plug Numbers 430, 440, 445 and 470. **P2381** meets Specification MS-35762 - supplied with Plug Number 480 and Extension-Jax® phone jack, Number 820.

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## LITTEL PLUG® PHONE PLUGS



## FEATURES AND BENEFITS

- 3 conductor plug
- Designed for high quality communication equipment
- One-piece tip rod ensures electrical continuity
- Brass plug finger versions meet MIL specifications
- 'N' and 'NC' suffix versions have nickel-plated plug fingers, excellent for audio applications
- 'NC' suffix option has rugged, heavy duty cable clamp, solder terminals for easier solderability and assembly. Metal shielded handle
- 'NCP' - plastic handle

## SPECIFICATIONS

**Plug Finger:** Brass, natural finish or nickel-plated

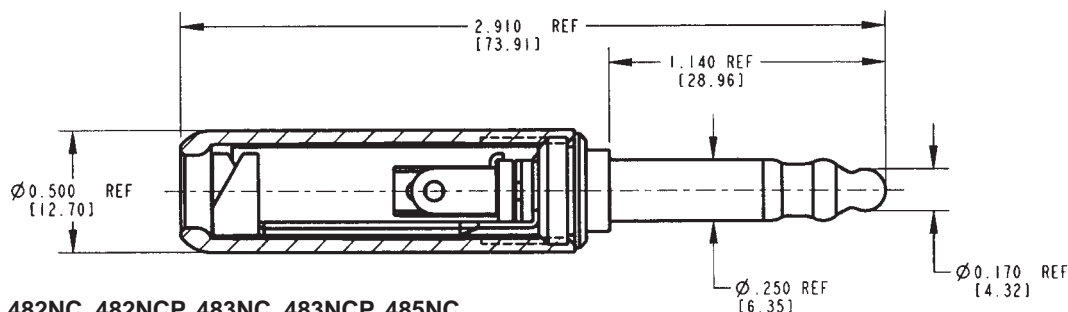
**Terminals:** Brass, electro-tinned

**Insulation:** Ethyl cellulose, per MIL-P-22835, Type II, Class 1, or acetal resin

**Handles:** Plastic-nylon molding plastic, Type 6, per MIL-M-20693, Type II. Shielded metal handle with red, black or nickel finish

## ORDERING INFORMATION

1. Order by part number.
2. Contact Switchcraft for more information.
3. Mating jacks available.



PART NO. 482NC, 482NCP, 483NC, 483NCP, 485NC

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

**LITTEL PLUG® PHONE PLUGS**

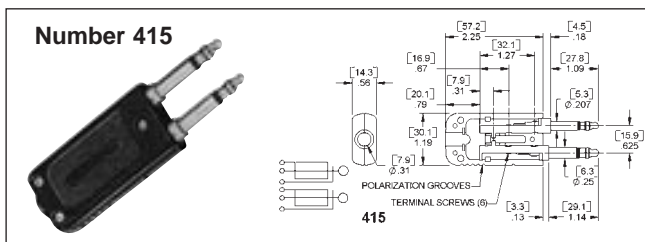
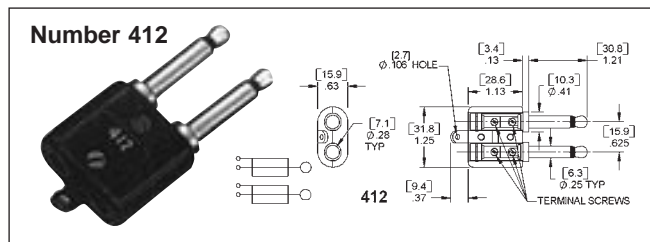
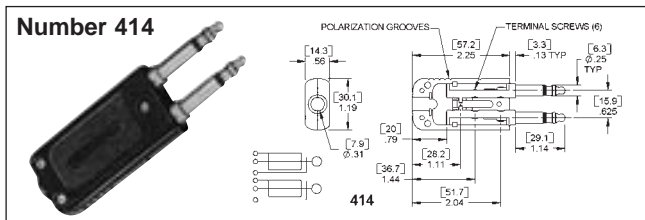
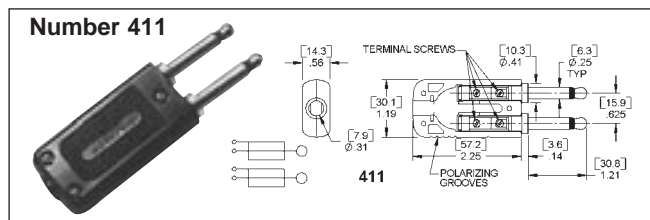
Part Number	Conductors	Terminals	Handle	MIL Part Number	Notes
482N	3	Screw	Red	None	Plastic handle, nickel plated plug finger
482NC	3	Cable Clamp	Shielded	None	Red metal handle, nickel plated plug finger
482NCP	3	Cable Clamp	Red	None	Plastic handle, nickel plated plug finger
483N	3	Screw	Black	None	Plastic handle, nickel plated plug finger
483NC	3	Cable Clamp	Shielded	None	Black metal handle, nickel plate plug finger
483NCP	3	Cable Clamp	Black	None	Black plastic handle, nickel plated plug finger
485NC	3	Cable Clamp	Shielded	None	Nickel plated handle, nickel plated plug finger

**480 SERIES PART NUMBERING CHART**

Part number	206" dia. finger	1/4" dia. finger	Brass finger	Nickel finger	Handle Material	Red handle	Black handle	Nickel handle	Standard cable clamp	Large cable clamp
480	•		•		Plastic		•		•	
482		•	•		Plastic	•			•	
482N		•		•	Plastic	•			•	
482NC		•		•	Metal	•				•
482NCP		•		•	Plastic	•				•
483		•	•		Plastic		•		•	
483N		•		•	Plastic		•		•	
483NC		•		•	Metal		•			•
483NCP		•		•	Plastic		•			•
484	•		•		Plastic	•			•	
485NC		•		•	Metal			•		•

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## MIL-TYPE 1/4" TWIN PHONE PLUGS



## FEATURES

Design and material strictly in accordance with Specification MIL-P-642(A), MIL part number molded or stamped on handle, manufacturer's trademark (as required in MIL Specification) appears on plug body. Ideal for use in broadcast and recording studios, military, industrial and telephone switchboard applications, instrumentation and telemetry.

Individual plugs, featuring one-piece tip rod and one-piece sleeve and plug body, with complete continuity of thermoplastic insulation between plug elements, are placed into handles to provide a double Twin-Plug® plug (two electrically-independent 2-conductor plugs spaced .625" center-to-center, with self-alignment feature). 411, 414 and 415 Twin-Plug plugs have provision for use of Cord Clamp **Number S2674**. 412 Twin-Plug has external Cord Anchor.

6-conductor Twin-Plug, 414 and 415, provide two electrically-independent 3-conductor plug fingers spaced on .625" centers. Fingers are insulated from each other and each provides tip, ring and sleeve connections. Black plastic handle is notched to indicate polarity. Accepts standard 6-conductor cables. Handle has provision for use of Cord Clamp, **S2674**.

Fingers of 414 are .25" diameter and mate with Switchcraft type MT389 Twin-Jax®, MT333B, MT336 MT-Jax®, and other jacks having .25" inside diameter sleeves and mounted on .625" centers. 415 has a .25" diameter finger and a .206" diameter finger to provide automatic polarization. Fingers mate with Switchcraft MT332B and MT342B MT-Jax, respectively.

## STRAIN RELIEF CLAMP

Natural brass. For use only with 411, 414, 415 Twin-Plug, **S2674**.

## SPECIFICATIONS

**Tip, Rod, Ring Sleeve, Body, Screws:** Copper alloy, natural finish. Number 412 Handle Screws - iridescent iridite overplating.

**Terminals:** Tinned copper alloy. (Latest MIL Specifications no longer specify terminals; terminal furnished is the type referenced as TM-89).

**Insulation:** Thermoplastic; per MIL-P-22985, Type II, Class 1.

**Handle:** Thermoplastic on 411, 412, 414 and 415, per MIL-P-22985, Type II, Class 4. Molded black thermoset plastic per MIL-M-14F.

Part No.	Conductors	Terminals	"Typical Mating Jack1"	Mil No.	Notes
411	2	Screw	MT388	M642/9-1	Provision for internal cord clamp (not included)
412	2	Screw	MT388	---	MILPJ289. Similar to WEC0289B
414	3	Screw	MT389	---	6-circuit plug, 2 electrically-independent 3 conductor fingers, .25" fingers. Provision for internal cord clamp (not included) Similar to WEC0 338A. 425A-3
415	3	Screw	MT332B & 1, MT342B	---	6-circuit plug, 2 electrically-independent 3 conductor fingers, one .25" finger, one .206" finger. Provision for internal cord clamp (not included)

1. Switchcraft Part Numbers. See Jacks Section for other mating jacks.

### MIL-TYPE 1/4" EXTENSION JACKS

#### FEATURES

Cable jack meets requirements of Specification MIL-J-641(A), Type Number JJ-026. Mates only with MIL-type plugs PJ-054 and PJ-540. Switchcraft 430.

#### SPECIFICATIONS

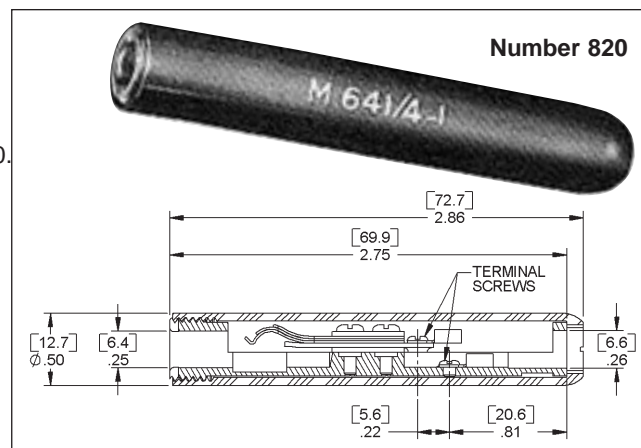
**Body and Terminal Screws:** Copper alloy, natural finish.

**Springs:** Punched from special copper alloy.

**Stack Insulation:** Rigid plastic spacers Rigid plastic tubing.

**Handle:** Same as plug handle above.

**Stack Screws:** Stainless steel.

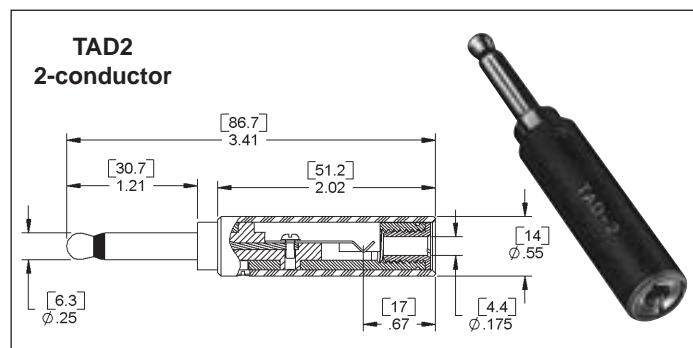


Part Number	Conductors	Terminals	Typical Mating Plug <sup>1</sup>	Handle	Handle Part Number	MIL Part Number
820	2	Screw <sup>2,3</sup>	430	Black	M1015	M641/4-1

1. Switchcraft Part Number See Jacks Section for mating jacks. 2. Switchcraft replacement screw. **P1070**, Terminal **P1069** (2 each required)

3. See previous page for strain relief clamp.

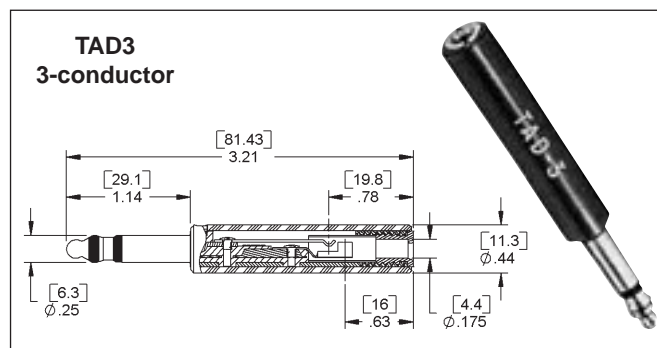
### TELEPHONE PATCH ADAPTERS



#### FEATURES

Compact patch adapters convert standard full-size phone jacks to standard miniature phone jack connections with maximum convenience and reliability at a minimum cost. Eliminates cross-patching problems and need for combination patch cords with standard phone plug on one end and a miniature phone plug on the other. Adapters are 100% compatible with Switchcraft® telephone type and military phone jacks and miniaturized tini-telephone patching system components, as well as equivalent industry standard phone plugs.

**TAD2** – 2-conductor adapter. Plug finger meets specifications for MIL plug PJ-047 (MIL-P-642). Fits Switchcraft T-Jax®, M-Jax®, MIL-approved MT-Jax®, and other industry-standard phone jacks with .250" inside diameter sleeves. The .552" diameter handle accommodates jacks on .625" centers. For quick identification, TAD-2 is stamped on the blue handle - will not wear off with constant use. Miniature 2-conductor jack built into plug body, accepts miniature phone plugs with .173" diameter fingers, such as Switchcraft tini-telephone® plugs, Series TT200 and TT250, and other standard miniature telephone plugs. TAD3 is a 3-conductor version of TAD2. Finger configuration meets requirements of PJ-051 (MIL-P-642). Finger incorporates dead ring to minimize plug and jack wear. Blue handle has diameter of .444".



#### SPECIFICATIONS

**Tip Rod, Ring, Sleeve Body and Screws:** Copper alloy, natural finish.

**Insulation:** Injection-molded plastic.

**Jack Springs:** Formed copper alloy.

**Screw, Spring Retaining:**

**TAD2** - #2-64, steel. Part Number **P1616** (one required).

**TAD3** - #2-64, brass. Part Number **P1070** (two required).

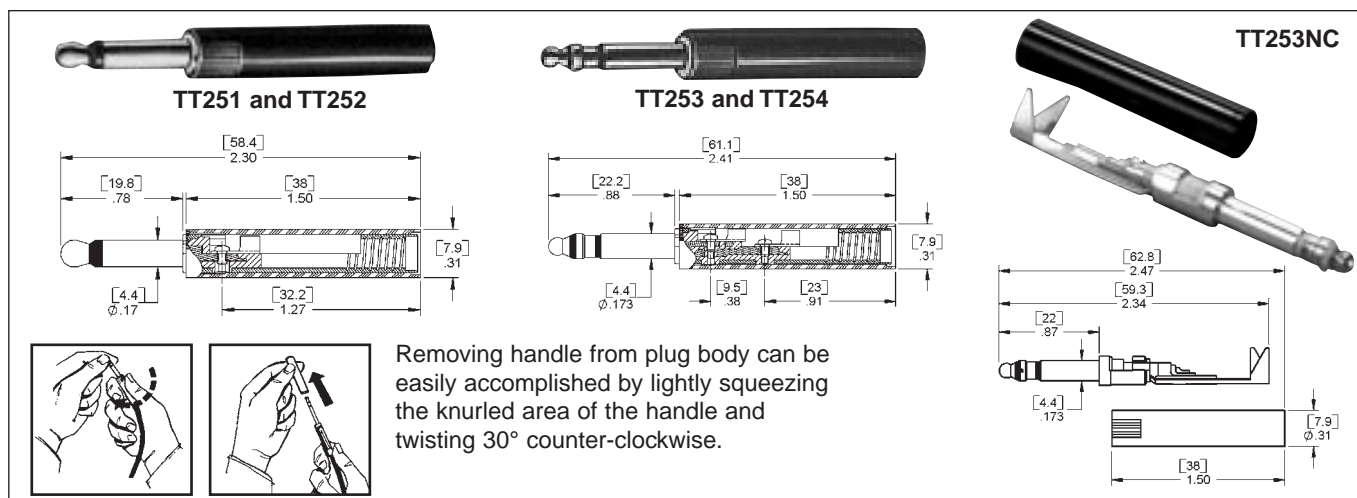
**Ring Insulations (TAD3 only):** Kraft paper sleeve.

**Handle:** Molded blue thermoplastic with die-stamped identification legend. TAD2 Handle, (Part Number **M1487**), and Retaining Screw, (Part Number **T1677**), one required. TAD3 Handle, (Part Number **M1488**), and Retaining Screw, (Part Number **T1990**), one required.

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$



## MINIATURE TELEPHONE PLUGS

**.173" MINIATURE PHONE PLUGS FEATURES**

2- and 3-conductor miniature non-shorting telephone plugs designed for use with TT-Jax®, Unijax®, and other phone jacks with a .176" inside diameter bushing. Approximately 1/2 the size of standard phone plugs, yet retains the uniformity, dependability and quality of MIL-type phone plugs.

TT-Plug® Miniature Telephone Plugs are the first to offer 2- and 3-conductors in an attachable type with twist handles for quick assembly. Series TT250 phone plug is available with red or black handles. Other color handles available on special order. Also available with nickel-plated plug fingers. (Add "N" to part number: 253N, 254N).

The TT253NC and TT254NC offer the same nickel-plated plug fingers as the 'N' versions, but also includes cable clamps and solder terminals for easy assembly.

Plugs feature a one-piece tip rod, ring and a one-piece sleeve with integral plug body, assembled together into a mold as inserts. Providing complete continuity of thermoplastic insulation between tip rod, ring and sleeve. Internal interlock of all parts prevents shifting and shorting under extreme rugged usage.

Internal 12-24 threads in end of plug body are intended for threading over outer jacket of a patch cord to provide a superior cable anchor.

Patch cords such as Switchcraft Series TT700 (or other .216" diameter cable) are easily attached to Series TT250 by screw terminals.

**FEATURES AND BENEFITS**

- Designed for pro audio applications
- 3 Conductor
- .173" (4.40mm) plug finger diameter
- One-piece tip rod ensures high reliability
- Complete continuity of thermoplastic insulation between conductors
- Internal keying of all parts preventing shifting and shorting
- Solder terminals for easier termination and assembly
- Large cable clamp for shield termination and strain relief
- Black or red handles

**SPECIFICATIONS**

**Tip Rod, Ring, Sleeve and Body:** Copper alloy, natural finish.

**Terminals and Terminal Screws:** Copper alloy, natural finish.

**Insulation:** Thermoplastic. **Handle:** Molded plastic

Part Number	Conductors	Terminals	Handle Color	Handle Part Number	Description
TT251	2	Screw	Black	T2302	
TT252	2	Screw	Red	T2315	
TT253	3	Screw	Black	T2307	Mil-type M642/13-1
TT253N	3	Screw	Black	T2324	Nickel-plated plug
TT253NC	3	Solder	Black	T2324	Nickel-plated plug, tinned solder terminals
TT254	3	Screw	Red	T2301	Mil-type M642/13-2
TT254N	3	Screw	Red	T2325	Nickel-plated plug
TT254NC	3	Solder	Red	T2325	Nickel-plated plug, tinned solder terminals
2P2003	3	Screw	None	None	

DIMENSIONS ARE FOR REFERENCE ONLY

Inch  
(mm)

### .173" MINIATURE TELEPHONE PLUGS BANTAM TYPE

#### FEATURES

Miniature telephone twin plugs with two 2-conductor or two 3-conductor fingers, designed to mate with TT Twin-Jax®, TT-Jax®, and other phone jacks with a .176" inside diameter bushing and compatible tip and ring springs. Approximately 1/2 the size of standard phone plugs; yet retains uniformity, dependability of high-quality phone plugs. The phone plugs are exceptionally light, small and rugged. Plug fingers can easily be removed and replaced.

- **Minimum Space:** Plugs fit .313" centers, horizontally or vertically.
- **Self-Aligning:** Plug fingers compensate for minor variations in jack spacing.
- **Polarizing:** Handle notches identify location of each finger.
- **Tip Monitoring:** Handle ports permit probe insertion to monitor tip circuits.
- **Terminating and Looping Plugs:** OEMs can fabricate cross-wired plugs, i.e., tip-to-sleeve, tip-to-ring, etc., according to individual requirements. OEMs can also wire-in resistors, RCL networks, etc. for standard and special terminating applications. Switchcraft will build looping and terminating TT-Twin Plugs on special order, where quantities warrant.
- **Sleeve Plugs:** For looping, terminating and single cable applications, sleeve plugs seal off unused handle opening(s). Sleeve plugs also make a bridged (common) sleeve connection by holding braided shield in place in second plug. On special order, TT-Twin Plugs can be supplied with one 2-conductor finger and one 3-conductor finger.
- **Ease of Assembly/Disassembly:** Refer to illustration below for assembly/disassembly procedure; no handle retaining screws required. Tip and ring terminations are screw-type screws supplied).

#### SPECIFICATIONS

**Tip Rod, Ring, Sleeve and Body:** Copper alloy, natural finish.

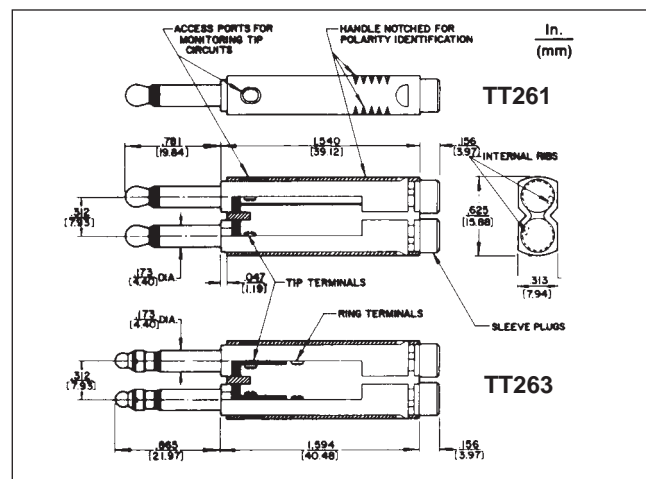
**Terminals and Terminal Screws:** Copper alloy, natural finish.

**Insulation:** Thermoplastic.

**Handle, Sleeve Plugs:** Molded plastic.

1. **DISASSEMBLY:** Place plug on edge as shown. Push down and back on metal lip on finger (inside notch) with small screwdriver and slip plug finger out of handle. Turn plug over and repeat for other finger.
2. **CABLE INSTALLATION:** Fold braided shield on cable back over insulation. Insert leads through rear of plug finger, and screw finger (clockwise) onto cable with twisting motion until lead terminations lineup with threaded tip and/or ring openings. Fasten terminals on both fingers with screws provided.
3. To bridge sleeves (common connection), place free end of braided shield in remaining finger sleeve opening. Press sleeve plug firmly in place.

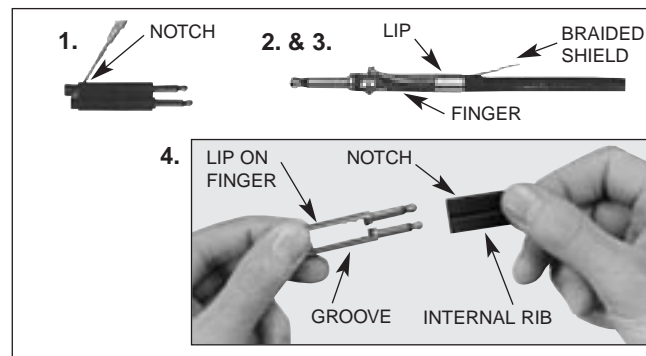
**TT261:** Two electrically-independent 2-conductor fingers in a black handle. Can be used with single or dual cables for independent tip circuits with common sleeve or separate sleeve circuits.



**TT263:** 6-circuit plug consists of two electrically-independent 3-conductor fingers with black handle. Can use single or dual cables for two electrically-independent 3-conductor fingers or common tip, ring and/or sleeve circuits.

Part Number <sup>1</sup>	Cond.	Terminals	Typical Mating Jack <sup>2</sup>	Handle	Handle Part Number	MIL Type Number
TT261	2	Screw <sup>3</sup>	TT31	Black	T2300-2	—
TT263	3		TT32B	Black	T2316	M642/13-3

1. TT-Twin Plug plugs can be supplied with one, 2-conductor plug finger and one, 3-conductor plug finger in the same handle (on special order).
2. Switchcraft Part Numbers. See additional mating jacks in this section.
3. Switchcraft Replacement screw **P2240**, Terminal **P2642**. 2 each required with 2-conductor twin plugs; 4 each required with 3-conductor twin plugs.
4. Replacement Hole Plug Switchcraft **T2318** (Black) **T2319** (Red).

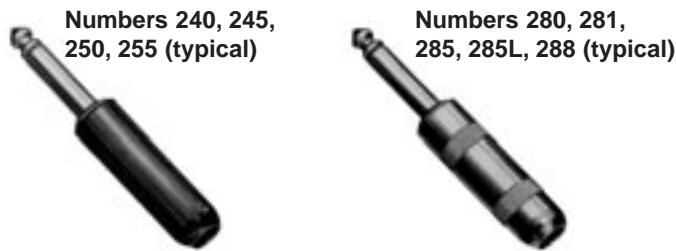


4. **ASSEMBLY:** Align grooves in fingers with internal handle ribs and insert fingers into rear of handle. Push fingers in until lips or rear of fingers snap into notches on handle.

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## 1/4" COMMERCIAL PHONE PLUGS

## 2-CONDUCTOR LITTEL-PLUG® PLUGS



## FEATURES

- Heavy duty machined copper alloy handle (shielded versions), tip and body for unsurpassed ruggedness.
- Bright nickel plating on exterior surfaces will not chip or corrode.
- Solder terminals are tin electroplated for ease of soldering.
- One-piece tip rod staked into tip terminal ensures electrical continuity
- Heavy duty cable clamp provides secure strain relief.
- The proven industry standard phone plug for audio applications. Beware of imitations!
- Shielded handle versions recommended for applications where electromagnetic interference and physical abuse may occur.

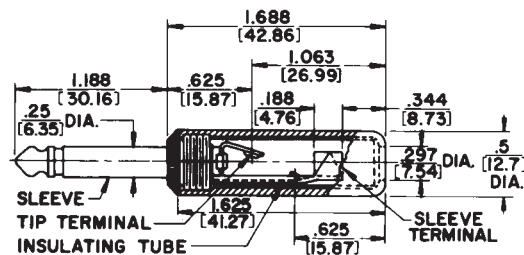
## SPECIFICATIONS

**Sleeve, Tip and Body:** Nickel-plated copper alloy.

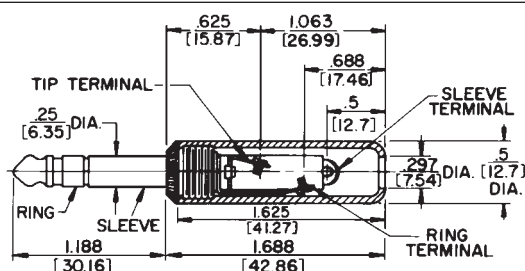
**Terminals:** Solder lug - Tinned copper alloy.

**Screw:** Tin-plated (screws size 3-48).

**Handles:** Molded - black or red plastic. Shielded - machined Nickel-plated copper alloy. Tubular insulator inside handle.

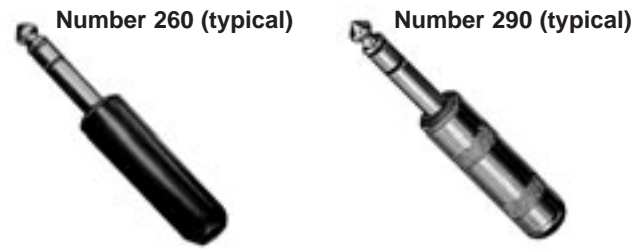


No. 280 typical – shown with solder lug terminals, cord clamp and shielded handle.



No. 280 typical – shown with screw-type terminals, plastic handle.

## 3-CONDUCTOR LITTEL-PLUG® PLUGS



## 2-CONDUCTOR PLUGS PART NUMBERS

Part Number	Terminals	Typical Mating Jack <sup>2</sup>	Handle*	Handle Part Number	
240	Screw <sup>3</sup>	11	Black	M1002	
◇C240	Screw <sup>3</sup> with Cable Clamp		Black		
245	Screw <sup>3</sup>		Red	M1003	
◇C245	Screw <sup>3</sup> with Cable Clamp		Red		
250	Solder Lug & Cable Clamp		Black	M1002	
255			Red	◇M1003	
270	Screw <sup>3</sup>		Shielded	Handle: T10581 Insulator: A10071	
◇C270	Screw <sup>3</sup> with Cable Clamp		Shielded		
280	Solder Lug & Cable Clamp		Shielded <sup>1</sup>		
281			Shielded <sup>4</sup>		
285			Shielded <sup>4, 5</sup>		
288			Shielded <sup>1</sup>		
285L			Shielded <sup>4, 5, 6</sup>	T2323	
2P1298	Solder Lug & Cable Clamp		Without Handle		
◇2P1495	Screw <sup>3</sup>				

## 3-CONDUCTOR PLUGS PART NUMBERS

260	Screw	12B	Black	M1002
267	Solder Lug &		Black	M1002
269	Cable Clamp		Red	◇M1003
290	Screw <sup>3</sup>		Shielded	Handle: T10581 Insulator: A10071
297	Solder Lug & Cable Clamp		Shielded	
◇2P1248	Solder Lug & Cable Clamp		Without Handle	

\* Additional plug handle colors available (P2714) green, (M1111) blue, (M1235) gray. Fits any plug on which Numbers M1002, M1003 are standard.

1. Wide insulator between tip and sleeve allows use of 2-conductor plug in 3-conductor jack without shorting.

2. Switchcraft Part Numbers. See Mating Jacks Section.

3. Replacement Screw Part Number P10292 (2-conductor plugs require 2 screws; 3-conductor plugs require 3 screws).

4. Unassembled.

5. Larger cable clamp to accommodate larger diameter cables.

6. Handle has .375" (9.53mm) diameter hole to accommodate larger diameter cables.

◇ Special order only. Contact Switchcraft.

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

### 1/4" COMMERCIAL PHONE PLUGS (continued)

Switchcraft® commercial 2- and 3-conductor phone plugs are available with a logo handle in addition to the plain handle. The Switchcraft® name appears prominently on the shielded handle so the plugs can no longer be easily confused with "copycat" plugs found on the market today. Knurling on handles provides a convenient, positive fingertip grip for connect and disconnect. Plugs are available in the following popular variations:

1. 1/4" diameter finger, 2-conductors.
2. 1/4" diameter finger, 3-conductors.
3. .206" diameter finger, 2-conductors.

Plug handles accept cable up to .290" diameter.



#### SPECIFICATIONS

**Sleeve:** Tip and Body: Plated copper alloy.

**Terminals:** Solder lug: Copper alloy, electro-tinned;

Screw: Tin-plated (screw size #3-48).

**Handles:** Nickel-plated zinc (tubular insulator inside handle).

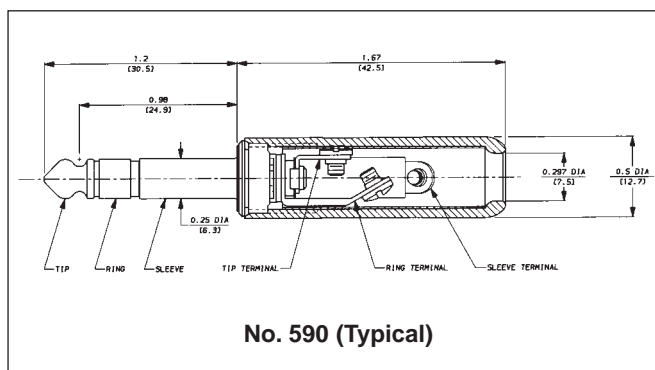
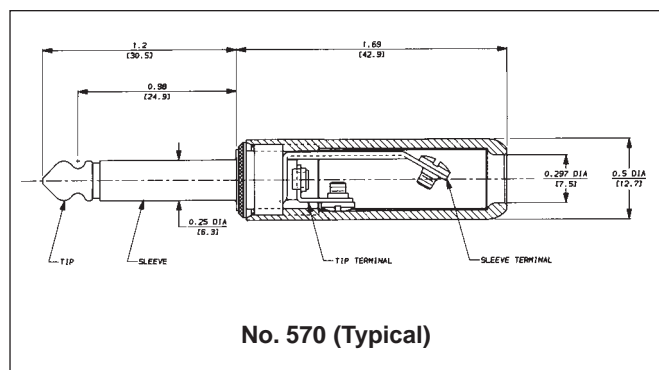
#### PART NUMBERS

**NOTE:** Plugs have 1/4" finger diameter unless otherwise specified.

Logo Handle	Plain Handle	Description	Typical Mating Jack
<b>2-CONDUCTORS</b>			
570	270	Screw terminals. Shielded handle.	11
580	280	Solder lug & cable clamp. Shielded handle.	
581	281	Solder lug & cable clamp. Shielded handle. Unassembled.	
585	285	Solder lug & cable clamp. Shielded handle. Unassembled. Larger cable clamp accommodates larger cables.	
588	288	Solder lug & cable clamp. Shielded handle. Wide insulator between tip and sleeve makes possible use as a 2-conductor plug in 3-conductor jack without shorting.	
S580	S280	Solder lug & cable clamp. Shielded handle. Plug finger has .206" diameter.	S11
<b>3-CONDUCTORS</b>			
590	290	Screw terminals. Shielded handle.	12B
597	297	Solder lug & cable clamp. Shielded handle.	
598	298	Solder lug & cable clamp. Shielded handle. Locking feature.	12B, 133

1. Other mating plugs are available.

2. Replacement screw, Part Number **P10292** (2-conductor requires 2 screws; 3-conductor requires 3 screws).



DIMENSIONS ARE FOR REFERENCE ONLY Inch  
(mm)



## 1/4" COMMERCIAL PHONE PLUGS (continued)



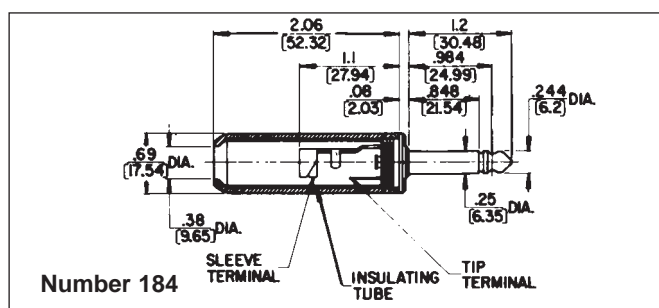
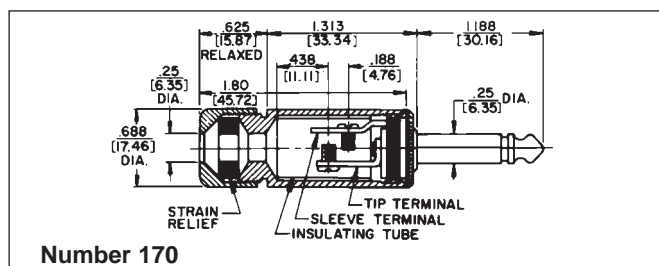
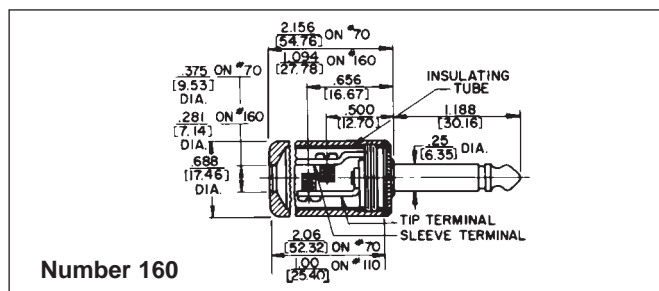
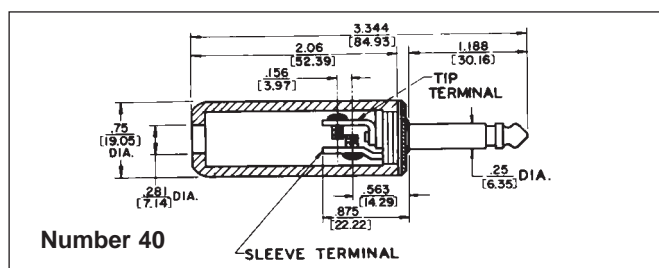
Numbers 70, 184

Number 170, 181



Number 40

Number 160

2-CONDUCTOR/PLASTIC OR  
SHIELDED HANDLES

Popular general purpose plug fits all standard jacks. Available in both 2- and 3-conductor types. Two-conductor plugs available with black or red molded plastic, or 3 different lengths of brass nickel-plated (shielded) handles. 2-Conductor Special Military Plugs are also available.

## FEATURES

- 1-piece tip rod staked into tip terminal insures tightness of plug.
- All essential conducting members are brass with external parts nickel-plated.
- Terminal screws: broad-headed. In production quantities, screws may be eliminated and terminals hot-tinned for easier soldering of wire leads to terminals (special order).
- Screw terminals have grooves which accommodate 1 or 2 cord tips.
- Thermoplastic handle insert for greater insulation.
- Plugs accept up to .25" maximum diameter cable (parallel or shielded cable).

## SPECIFICATIONS

**Sleeve, Tip and Body:** Nickel-plated copper alloy.

**Terminals:** Solder lug: copper alloy, electro-tinned.

**Screw:** steel, tin-plated.

**Handles:** Shielded: Nickel-plated copper alloy.

**Molded:** black or red plastic.

Part Number	Terminals	Typical Mating Jack <sup>2</sup>	Handle	Handle Part Number
40	Screw (Replacement Screw Part No. P10013) 2 required	11 or Z15J	Black	M1001
70 <sup>3</sup>			Shielded	Handle: T10141 Insulator: A10063
160			Shielded	Handle: T10451 Insulator: A10061
2P1251			Without Handle	—
170 <sup>1</sup> 182QB 182QBD			Shielded	Handle: T11231 <sup>1</sup> Insulator: A10064
184 <sup>3</sup>	Solder Lug & Cable Clamp		Shielded	Handle: T10141 Insulator: A11372
184L <sup>4</sup>			Shielded	T2322

1. 2-piece shielded handle with built-in cable clamp for .25" diameter cable. Handles: Number T11231, handle; Number T11241, cap; see above for insulating tube; Number T1125, rubber washer.

2. Other mating plugs are available.

3. Handle has .380" (9.65mm) diameter hole to accommodate .375" diameter cable.

4. Handle has .451" (11.51mm) diameter hole to accommodate larger diameter cables.

DIMENSIONS ARE FOR REFERENCE ONLY

Inch  
(mm)

### SILENT-PLUG PHONE PLUGS



No. 172

Silent-Plug plugs have unique circuit-closing device—stops hums, squeals and pops when plug is removed from jack. One-piece tip rod assembly insures plug quality. Utilizes cables up to .25" diameter (parallel or shielded cable). U.S. Patent No. 2,664,475.

#### SPECIFICATIONS

**Sleeve, Tip and Body:** Nickel-plated copper alloy.

**Terminals:** Copper alloy, tin-plated.

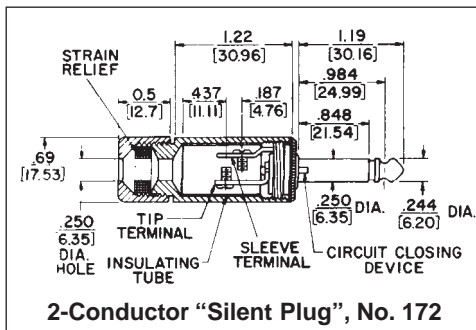
**Screw:** Cadmium plated (screws size 3-48).

**Handles:** Shielded machined copper alloy nickel-plated. Tubular insulator inside handle.

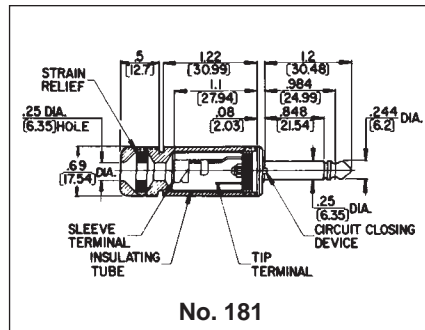
#### 2-CONDUCTOR PLUGS

Part Number	Terminals	Typical Mating Jack	Handle	Handle Part Number
172	Screw  (Replacement Screw Part No. P-1011-3) 2 required	11	Shielded	Two-Piece <sup>1</sup> Ins. Tube A-1006-3
181 182	Solder Lug and Cable Clamp		Shielded <sup>2</sup>	Two-piece <sup>1</sup> Ins. Tube A-1137-1 T-1014-1 Handle, A-1137-2 Ins. Tube

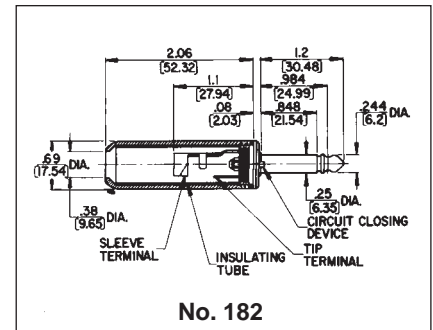
1. 2-piece shielded handle with built-in cable clamp for .25" diameter cable. Handles: Number T1123-1, handle; Number T1124-1, cap; Number T-1125, rubber washer. 2. Mylar tube insulation for greater protection.



2-Conductor "Silent Plug", No. 172

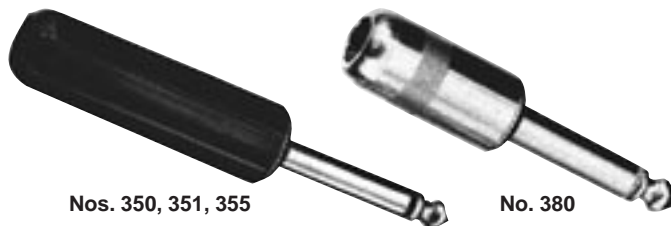


No. 181



No. 182

### LUG®-PLUG PHONE PLUGS



Nos. 350, 351, 355

No. 380

Similar to Littell-Plug phone plug. Same molded handles as used on Littell-Plug; metal handle, bright nickel-plated, only 1" long. Fits all standard jacks. See drawing for details.

#### SPECIFICATIONS

**Sleeve, Tip and Body:** Nickel-plated copper alloy.

**Terminals:** Solder lug: copper alloy, tin-plated.

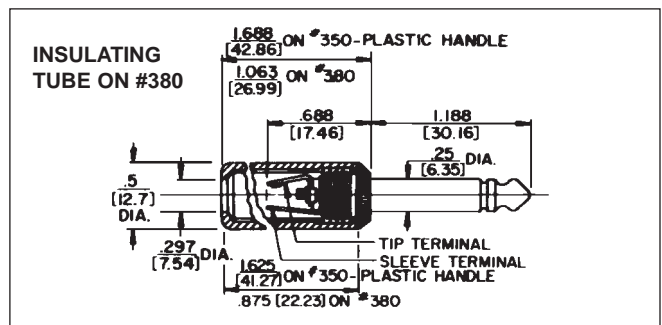
**Screw:** plated steel.

**Handles:** Shielded: Nickel-plated copper alloy. Molded: black or red plastic.

#### 2-CONDUCTOR PLUGS

Part Number	Terminals	Typical Mating Jack <sup>1</sup>	Handle	Handle Part Number
350 2P-1216	Solder Lug	11	Black	M-1002
380			Shielded	Handle: T-1060-1 Insulator: A-1007-2

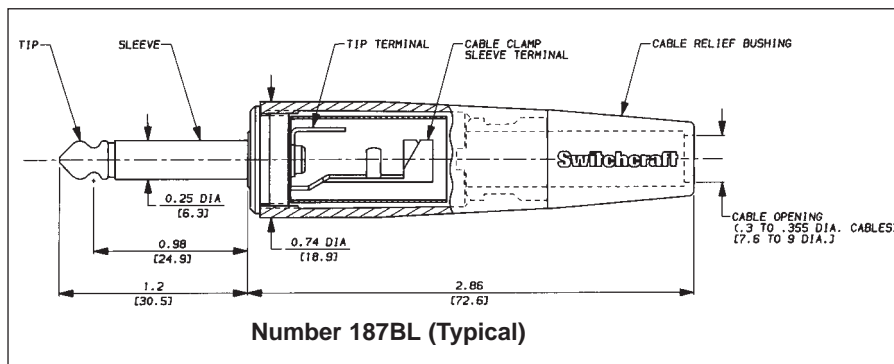
<sup>1</sup> Switchcraft part numbers. See Jacks Section for additional mating jacks.



DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## AUDIO LOUDSPEAKER PLUGS

SERIES 187



The 187 series 1/4" phone plugs are similar to the Switchcraft® 184 plugs, except that they offer an attractive tapered handle with a snap-in flex relief. Other features include:

- Larger tip terminal to accommodate wire sizes up to 14 AWG.
- Choice of Satin nickel or black finish.
- Black flex relief bushing can be specified in three different cable diameter openings for maximum reliability of cable.
- Plug is rated at 15A rms (maximum) for use with audio loudspeaker applications.

**SPECIFICATIONS**

**Sleeve, Tip and Body:** Nickel-plated copper alloy.

**Terminals: Solder lugs:** tinned copper alloy;

Screw: tin-plated.

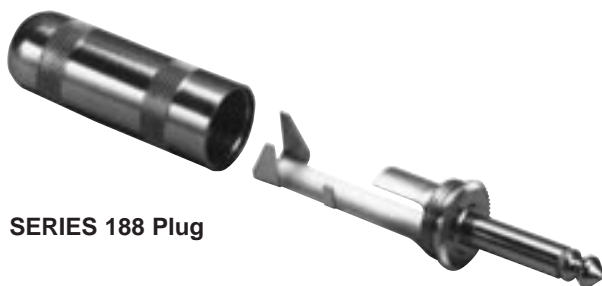
**Handles:** Die-cast zinc. Satin nickel or black finish.

**Cable Relief Bushing:** Black (thermoplastic elastomer).

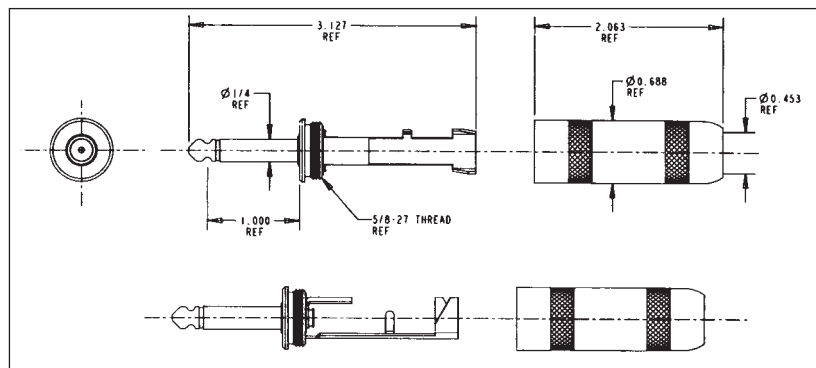
Part Number		Cable Relief Bushing diameter (inch)	Typical Mating Jack <sup>1</sup>
Nickel Finish	Black Finish		
187	187B	.3 to .33 (regular)	11 or Z15J
187L	187BL	.3 to .355 (large)	
187D	187BD	.2 to .30 (small)	

1. Other mating plugs are available. See Jacks Section.

## HEAVY DUTY 1/4" COMMERCIAL PHONE PLUGS



SERIES 188 Plug



- Switchcraft's 188 is more heavy-duty than our competitor's biggest 1/4" commercial phone plugs.
- Large curved tip solder terminal makes it easier to solder to heavy gauge wires.
- Longer sleeve terminal allows more room to make sleeve solder connections.
- Extra-large cable clamp securely grips cable of up to .450" in diameter.
- Will easily accommodate some varieties of four conductor 14 gauge wire and parallel two conductor 12 gauge wire.
- Bendable tab on sleeve terminal makes termination easier by holding down cable while soldering. In addition, such mechanical retention makes for a superior solder connection.
- Will handle up to 15 A. rms (maximum). (continued on next page)

DIMENSIONS ARE FOR REFERENCE ONLY Inch  
(mm)

### HEAVY DUTY 1/4" COMMERCIAL PHONE PLUGS (continued)

#### SPECIFICATIONS

**Contact Resistance (typical \*D.O.M.J.):** < 0.020 ohms.

**Dielectric Withstand Voltage:** 500 VAC (minimum).

**Insulation Resistance @ 500 VDC:** 2,000 megohms (minimum).

**Insulation Resistance (after MIL-STD-202 Salt Spray):** 1,000 megohms (minimum).

**Working Voltage:** 250 VAC, 140 VDC.

**Current Carry @ Working Voltage For 188 Plug (typical \*D.O.M.J.):** 15.0 AMPS.

**Current Carry @ Working Voltage For 299 Plug (typical \*D.O.M.J.):** 6.0 AMPS.

**Insert/Withdrawal Force:** \*D.O.M.J..

**Soldering Requirement:** ANSI/J-STD-001.

**Temperature Range:** -40° to + 85° Centigrade

**U.L. Component Recognition File No.:** E118169.

**Life:** \*D.O.M.J..

**Maximum Cable Size For 188 Plug:**

12 AWG stranded, up to .450" diameter.

**Maximum Cable Size For 299 Plug:** .290" diameter.

#### MATERIALS

**Tip:** Nickel-plated copper alloy.

**Sleeve:** Nickel-plated copper alloy.

**Handle:** Nickel-plated copper alloy.

**Tip Terminal:** Copper alloy, electro tin-plated.

**Cable Clamp:** Copper alloy, electro tin-plated.

**Insulators For 188 Plug:** Thermojet plastic, thermoplastic, thermoplastic film, P.P.O.

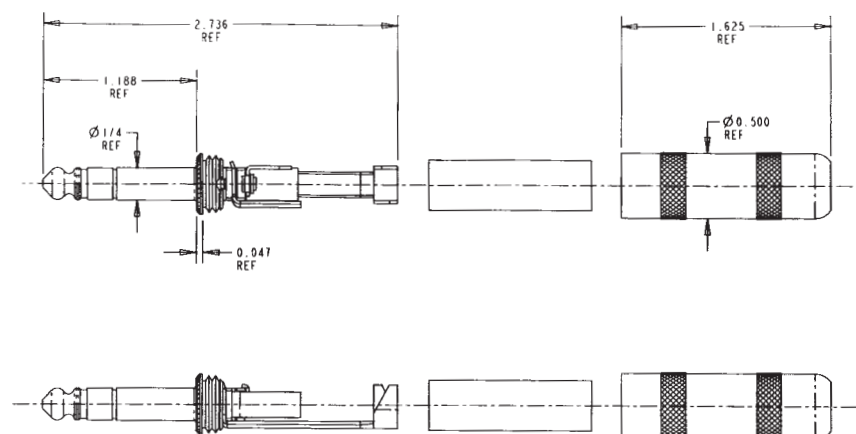
**Insulators For 299 Plug:** Thermoplastic, thermoplastic film, glass epoxy.

\*D.O.M.J. – Dependent On Mating Jack

SERIES 299 PLUG



Part Number	Maximum Cable Size	Mating Jack
299	.290" Diameter	Z15J

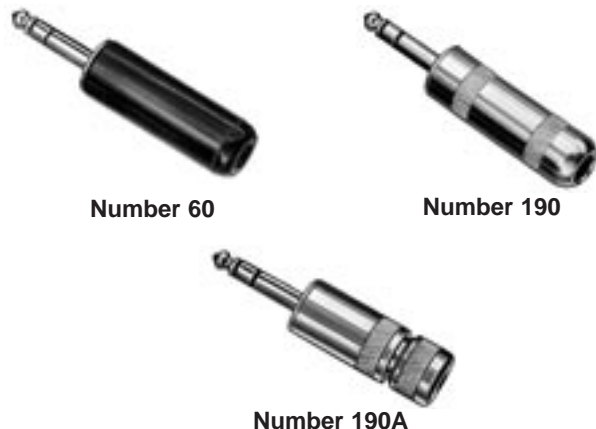


DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$



## 1/4" COMMERCIAL PHONE PLUGS (continued)

### 3-CONDUCTOR/PLASTIC OR SHIELDED HANDLES



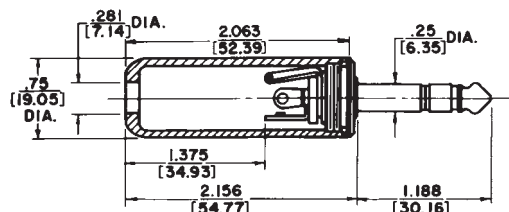
Number 60

Number 190

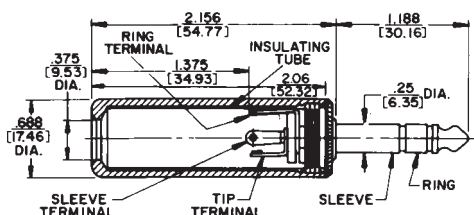
Number 190A

Part Number	Terminals	Typical Mating Jack <sup>2</sup>	Handle	Handle Part Number
60	Solder Lug	12B	Black	M1001
◇90			Shielded	T10451
190			Shielded	Handle: T10141 Insulator: A10063
190A, 190B & 190BL			Shielded	2-piece <sup>1</sup>

1. 2-piece shielded handle with built-in cable clamp for .25" diameter cable.  
Handles: **Number T11231**, handle; **Number T11241**, cap; **Number A10064**, insulating tube; **Number T1125**, rubber washer.  
2. Other Mating Plugs are available.  
◇ Special order only. Contact Switchcraft.



Number 60



Number 90

## .206" COMMERCIAL PHONE PLUGS

### PHONE PLUGS FOR POLARIZED CONNECTIONS



Numbers S250, S255

### FEATURES

For applications requiring polarization (use of plugs of different sizes) to prevent insertion of incorrect equipment Littell-Plug® phone plugs featuring a sleeve and tip diameter of .206" are available. Mate with Number S128 Extension Jax® and S11 Littell Jax® jacks. Number S260 used interchangeable with Military Type M642/51 (Switchcraft Number 480) plugs. Mate with jacks S12B, S13B, M444, MT342B, MT344B and others.

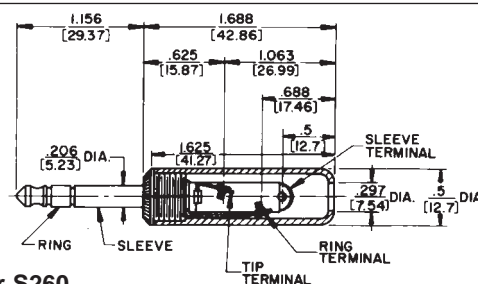
### 2-CONDUCTOR PLUGS PART NUMBERS

Part Number	Terminals	Typical Mating Jack <sup>1</sup>	Handle	Handle Part Number
S250	Solder Lug & Cable Clamp	S11	Black	M1002
S280			Shielded	T10581 A10071

### 3-CONDUCTOR PLUGS PART NUMBERS

S260	Screw (Replacement Screw Part No. P10292) 2 required	S12B	Black	M1002
S267	Solder Lug & Cable Clamp			

1. Switchcraft® mating jacks.



Number S260

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

### 1/4" MITI-PLUG® AUDIO PLUGS



Number 174S

#### FEATURES

- 2-conductor phone plug with full shielding and resistance to extremely rough usage for electrified audio instruments such as amplifiers, synthesizers power heads and speaker systems requiring high-quality audio plugs.
- 3-WAY CABLE STRAIN/STRESS RELIEF: For hours of trouble-free operation under heavy and abusive use. Plug body internally threaded for screw-on strain relief for cables from .29" to .30" diameter, and an additional clamp for additional relief (and for smaller cables). A heavy copper alloy-plated steel spring at point of entry to plug keeps cable from folding and pinching. Flex relief spring recommended for cables with diameters of .265" maximum only.
- TERMINATING: Tip wire soldered to tip—braid folded back and secured with cable clamp.
- IDENTIFICATION: Customer or OEM name of logo can be applied to plastic handles for a minimal charge for personalization. (Contact Switchcraft for details).
- SPECIAL HANDLE COLORS: Plastic handles molded in custom colors on special order. Contact Switchcraft for details.

#### SPECIFICATIONS

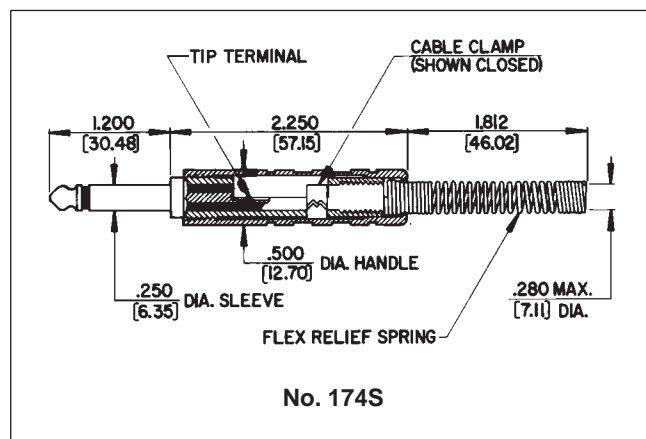
**Tip Rod & Body:** Copper alloy.

**Handle:** Copper alloy or plastic (black).

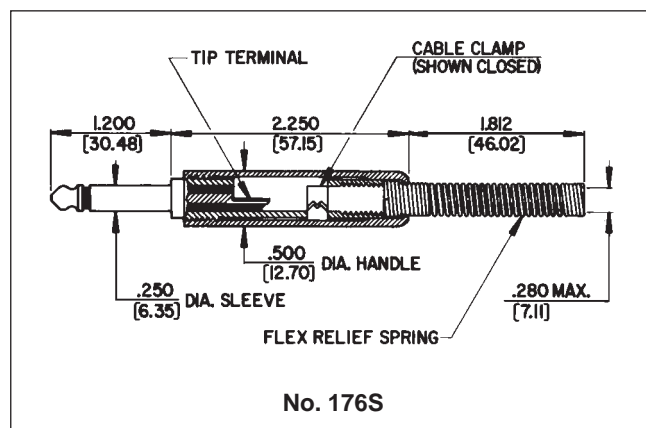
**Flex Relief Spring:** Plated spring steel.  
(Part No. P2848).

**Strain Relief Clamp:** Plated steel.  
(Part No. P2380).

**Insulation:** Thermoplastic, glass reinforced.



No. 174S



No. 176S

#### 2-CONDUCTOR PLUGS

Part Number	Handle	Flex Relief	Typical Mating Jack <sup>1</sup>	Handle Part Number
173	Black plastic	U-Clamp	11	M1483
174S	Copper Alloy	Spring		T2313
175	Copper Alloy	None		T2313
176S	Black Plastic	Spring		M1483
177S	Red Plastic	Spring		
178	Black Plastic	None		M1483
◇179	Red Plastic	None		

1. Other mating plugs are available.

◇ Special order only. Contact Switchcraft.

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## 1/4" FLAT PLUG PHONE PLUGS



Series 220



Series 230



Series S230



No. 238

## FEATURES

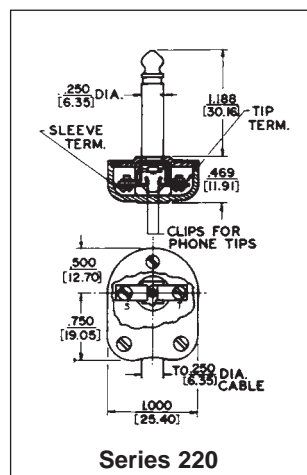
- Ideal where conventional long handled plugs are not suited to design of equipment. "Chassis-hugging" phone plugs allow cables to be brought out at right angles to equipment.
- Removable plastic cap for easy assembly of wire leads to either screw or solder lug terminals. Adapter clips on types 220 and 225 make it convenient to clamp standard phone tips to terminals.
- Terminals and body of plug mechanically interlocked, eliminating probability of any shifting.
- Cover is black or red plastic; plug body is a rugged assembly of all metal parts.
- One-piece tip rod staked into tip terminal to insure tightness, no disassembly of tip during use of plug.
- High grade insulation.
- Terminal identification permanently stamped into base plate adjacent to each terminal. Letter "T" denotes tip connection; "R" denotes ring sleeve; "S" terminal is the sleeve or body connection (no identification on types 228, 238).
- Cover molds designed so customer's name or trademark inserts can be added. Call for details.

## SPECIFICATIONS

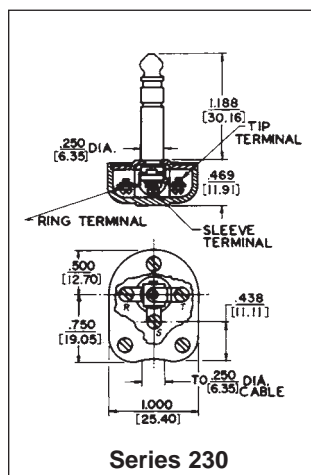
**Tip Rod and Sleeve:** Nickel-plated copper alloy.

**Terminals:** Tinned copper alloy.

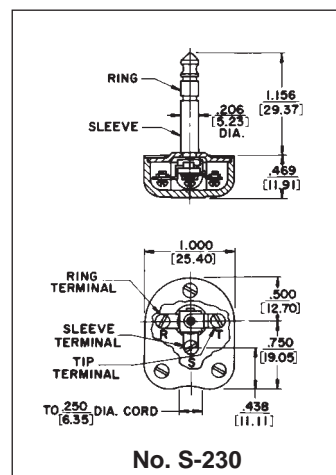
**Handle:** Black or red plastic. Numbers 228 and 238, steel, nickel-plated.



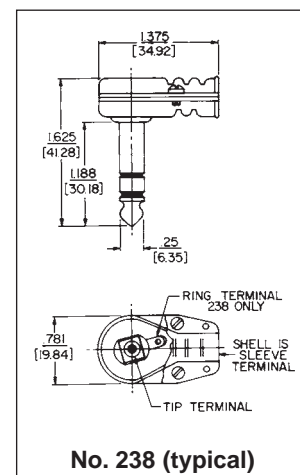
Series 220



Series 230



No. S-230



No. 238 (typical)

DIMENSIONS ARE FOR REFERENCE ONLY  
Inch  
(mm)

## 2- OR 3-CONDUCTOR/SHIELDED HANDLE

Part No.	Terminal	Typical Mating Jack <sup>1,2</sup>	Conductor	Handle	Handle Part No.
228	Solder	11	2	Shielded	S3067
238	Lug	12B	3		

1. Nickel plated steel handle. Two screws (Part Number P15823) required to mount handle.
2. Other mating plugs are available.
3. Accommodates cables from .219" outside diameter to .250" outside diameter Ideal for music equipment use.

3-CONDUCTOR/PLASTIC HANDLE  
.206" DIAMETER SLEEVE AND TIP

Part No.	Terminals	Typical Mating Jacks <sup>1</sup>	Handle	Handle Part No. <sup>4</sup>
230	Screw <sup>3</sup>	12B	Black	M1005
235	Screw		Red	
237	Solder		Black	M1005
239	Solder		Red	
S230	Screw <sup>3</sup>	S12B <sup>2</sup>	Black	M1005

1. Switchcraft Part Number Other mating plugs are available.
  2. Part Number S230 is the commercial version of military Type PJ068 (Switchcraft Number 480) plug. Mates with S12B, S13B, M444, MT342B, MT344B Jacks and others. Other mating plugs are available. For applications where it is desirable to polarize, use plugs of different sizes to prevent insertion of incorrect equipment. Sleeve and tip diameter of these plugs is .206" Mates with S830, S1230 Extension-Jax<sup>®</sup> jacks and S12B, S13B Littel-Jax<sup>®</sup> phone jacks.
  3. Switchcraft Replacement Part Number P10292. 3 screws required.
  4. Three screws (Number P1039) required to mount handle.
- ◇ Special order only. Contact Switchcraft.

## 2-CONDUCTOR/PLASTIC HANDLE

Part No.	Terminals	Typical Mating Jack <sup>1</sup>	Handle	Handle Part No. <sup>3</sup>
220	Screw	11	Black	M1005
225	Screw		Red	M1006
227	Solder Lug		Black	M1005
229	Solder Lug		Red	M1006
2P1509	Screw		Less Handle	—

1. Switchcraft Part Number; see jack section for additional mating jacks.
2. Switchcraft replacement Part Number P10292. 2 screws required per plug. Clips for phone tips. Part Number S1832.
3. Three screws (Number P1039) required to mount handle.

### RIGHT-ANGLE AUDIO PHONE PLUG

#### FEATURING 3-PIECE CONSTRUCTION AND FAST TERMINATION/ASSEMBLY

Switchcraft's 2- or 3-conductor right-angle audio phone plugs are designed for OEMs and users of commercial phone plugs. The plugs offer large terminals for easy wiring, and only three pieces to assemble - handle, insulator and finger/housing assembly and rugged reliability for stable, long-term, trouble-free operation.

#### FEATURES

- Easy Termination: Large terminals accept up to 16 AWG wiring (cables up to .25 inch diameter)
- 3-Piece Assembly: Screw on the handle for quick and easy assembly; minimizes labor costs.
- Rugged: All metal exterior construction.
- Low Profile: Only 1/2 inch wide. Ideal for crowded, multi-channel panels. Right-angle handle minimizes space required behind equipment.
- Knurled Handles: Positive grip during connect/disconnect.
- Rugged Cable Clamp: Isolates pulling and twisting strains.

#### SPECIFICATIONS

**Tip, Rod and Handle:** Nickel-plated copper alloy.

**Housing/Sleeve:** Nickel-plated.

**Tip Terminal:** Tin-plated copper alloy.

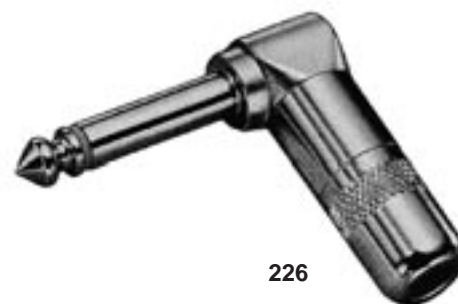
**Sleeve (Clamp) Terminal:** Tin-plated steel.

**Insulation:** Thermoplastic.

**Dielectric Withstanding Voltage:** 500 Vac.

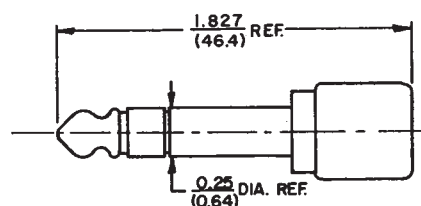
**Insulation Resistance:** 50,000 Megaohms minimum (initial).

**Operating Temperature:** -20°C to +65°C.

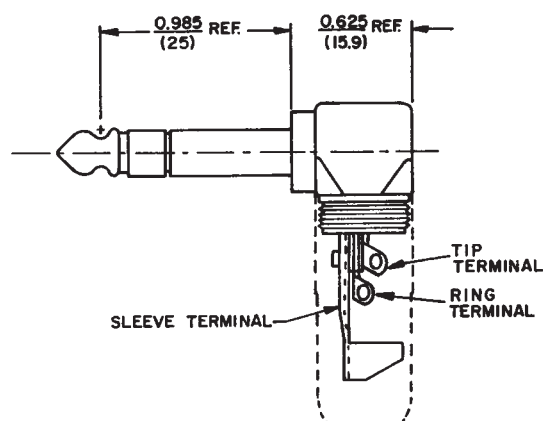


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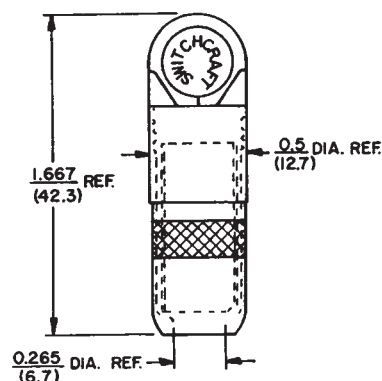
Part Number	Description	Typical Mating Jack
236	3-conductor 1/4" right-angle commercial plug.	12B, 13B 112B, 113B
226	2-conductor 1/4" right-angle commercial plug	11, 12A 111, 112A



No. 236



No. 236



DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## 1/4" LOCK-EXTENSION JACKS AND PLUGS



Number 133



Number 298

## FEATURES

Modified Littell-Plug® phone plug, 2- or 3-conductor, with coupling ring that can be threaded to thread projection of mating panel jack or to threaded end of the Lock-Extension Jax®. Locks connection after plug has been fully inserted into its mating panel jack or Extension Jax®.

Lock-Plug® makes proper contact to mating jack without tightening or attaching coupling ring, when rapid disconnect may be desired. Lock-Plug fits any standard jack with 3/8".-32 thread bushing with .094" of the bushing exposed. Lock-Extension Jax also will mate properly with standard phone plugs, where no "lock" requirement exists.

## SPECIFICATIONS

**Lock-Plug Tip Rod, Body, Handle and Coupling Ring:** Nickel-plated copper alloy.

**Terminals:** Brass, electro-tinned. Solder lug design, cable clamp part of sleeve terminal.

**Insulation:** Rigid plastic.

## LOCK-EXTENSION JAX®

**Housing (or Sleeve) and Handle:** Nickel-plated copper alloy.

## TERMINALS:

**Sleeve:** Plated steel. Tip and Ring: integral part of tip and ring springs.

**Springs:** Spring tempered copper alloy.

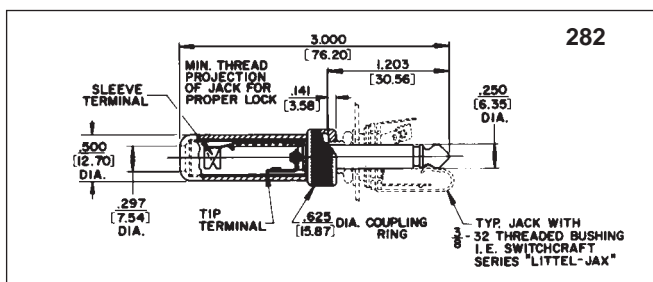
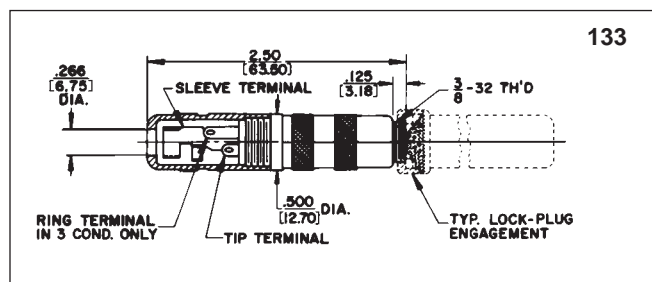
**Insulation:** Molded thermoplastic insert. Rigid plastic terminal washer.

## LOCK-PLUG

Part Number	Cond.	Terminals	Typical Mating Jack	Handle Part Number	Notes
282	2	Solder Lug & Cable Clamp	12A	T10581 A10071	Similar to Switchcraft Number 297 Littell-Plug except with coupling ring.
298	3		12B, 133		

## LOCK-EXTENSION JAX®

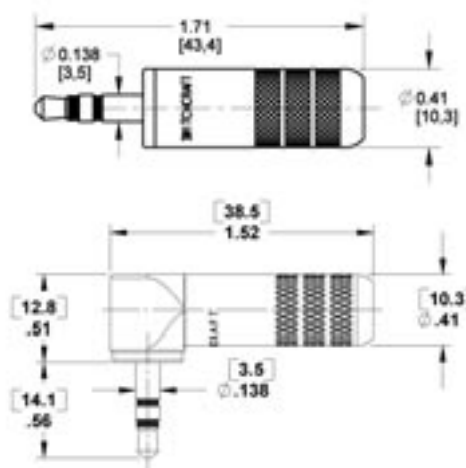
Part Number	Cond.	Terminals	Typical Mating Plug	Handle Part Number	Notes
133	3	Solder Lug & Cable Clamp	298	T1485	Sleeve terminal has cable clamp. Similar to Switchcraft® Number 131 Extension-Jax®.



DIMENSIONS ARE FOR REFERENCE ONLY  
Inch  
(mm)



### 3.5 MM HEAVY DUTY STEREO PLUGS



### 3.5MM STEREO PLUGS

#### FEATURES

- Heavy duty 3.5mm plugs for audio, instrument, other applications.
- Large cable clamps for rugged use.
- Available in straight or right angle.
- One piece tip rods for added durability.
- Available in nickel, gold, and black finishes.
- Large solder terminals for easy assembly.
- Standard handle accommodates cable sizes up to 0.290"
- Optional 'S' versions accommodate cable sizes up to 0.175"

35HDBN - Black Handle, Nickel Plug

35HDBAU - Black Handle, Gold Plug

35HDNAU - Nickel Handle, Gold Plug

35HDNN - Nickel Handle, Nickel Plug

#### BENEFITS

- One piece tip rod with flat for easy solderability.
- Compliments current line of 3.5 mm jacks.
- Insert molded plug finger.
- Heavy Duty cable clamp provides better strain relief for larger cables
- Longer cable clamp for easier plug assembly and more room for solder connections
- Knurl on the back of handle provides ergonomic gripping surface to tighten plug
- Tubular insulator included to prevent solder joints from contacting handle
- Longer handle for improved gripping surface and easy plug withdrawal from jack
- Large solder terminal for easy solderability

#### MARKETS

- Audio
- Consumer electronic equipment
- Broadcast studios
- Home recording equipment
- Audio cable assembly manufacturers
- Instrumentation
- Test equipment

### SPECIFICATIONS

**Contact Resistance:** <0.020 ohms

**Dielectric Withstand Voltage:** - 250 VAC (min.)

**Insulation Resistance @ 500 VDC:** 2,000 megohms (min.)

**Working Voltage:** - 250 VAC, 140 VDC

**Current Carry @ Working Voltage:** 4 AMPS

**Insert/Withdrawal Force:** - Typical 2.5/2 pounds

**Temperature Range:** 0° to 66° Centigrade (operating)

Passed MIL-STD-202F Method 107G (Thermal Shock), and Method 201 (Vibration)

**Life:** - 5000 cycles

**Maximum Cable Size:** - .250" dia.

### MATERIALS

**Tip Rod:** Copper alloy, tin, or gold-plated

**Ring:** Copper alloy, nickel, or gold-plated

**Sleeve:** - Copper alloy, nickel, or gold-plated

**Handle:** Copper alloy, nickel, or gold-plated

**Cable Clamp:** - C.R.S., tin-plated

**Solder Terminal:** Copper alloy, tin-plated

**Tubular Insulator:** Clear plastic

### ORDERING INFORMATION

1. Order by part number
2. Contact Switchcraft for more information

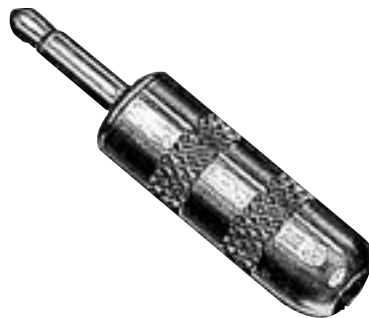
Part Number	Description		
	Plug Finger	Handle	Notes
35HDNN	Nickel	Nickel	
35HDNNS	Nickel	Nickel	0.175" handle opening
35HDBN	Nickel	Black	
35HDBNS	Nickel	Black	0.175" handle opening
35HDNAU	Gold	Nickel	0.175" handle opening
35HDBAU	Gold	Black	
35HDBAUS	Gold	Black	0.175" handle opening
35HDRANN	Nickel	Nickel	Right angle
35HDRABAU	Gold	Black	Right angle
35HDRAMAU	Gold	Nickel	Right angle

DIMENSIONS ARE FOR REFERENCE ONLY Inch  
(mm)

## .141" MINIATURE PHONE PLUGS



Number 750



Number 780

## FEATURES

- Miniature 2-conductor Phone Plug for use with Switchcraft Tini-Jax® miniature phone jacks. About 1/2 the size of Switchcraft Littel-Plug® phone plug. Average net weight, 1/8 ounce.
- Various terminal combinations: (a) Dual purpose sleeve terminal may be clamped over metal braid or shielded cables; provides cable anchor. Easily soldered for perfect electrical connection. (b) Screw terminal design (no cable clamp) for cable. Terminals that can be more suitably connected by screws.
- 1-piece tip rod staked into mating terminals; no disassembly of tip during use of plug. Terminals and body of plug interlocked mechanically.
- Available in black or red plastic handles or brass nickel-plated handles for shielding. Can be used with cables up to .188" outside diameter.

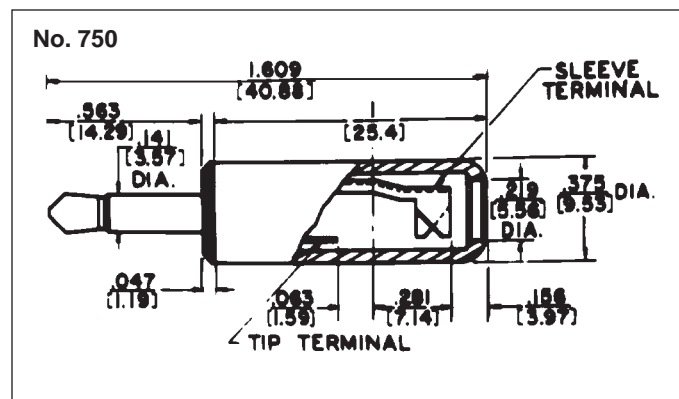
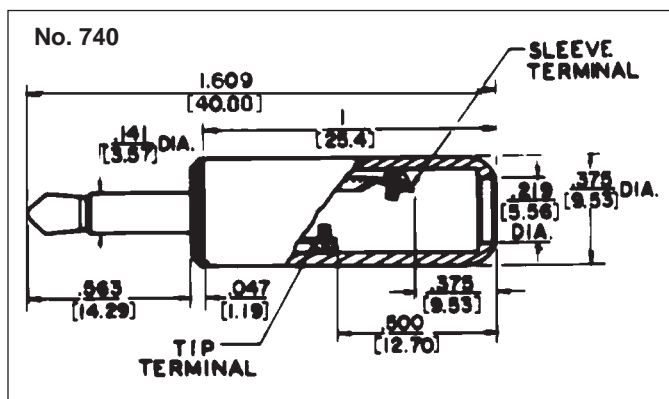
## SPECIFICATIONS

**Sleeve, Tip and Body:** Nickel-plated copper alloy.

**Terminals:** Copper alloy, electro-tinned. Solder lug or screw type (Screws #0-80).

**Handle:** Molded black or red plastic.  
Copper alloy, nickel-plated.

Part Number	Terminals	Typical Mating Jack <sup>1</sup>	Handle	Part No.
740	Screw <sup>2</sup>	41	Black	M1055
745			Red	M1056
750	Black		M1055	
755	Red		M1056	
2P1384	Solder Lug & Cable Clamp		Less Handle	—
770	Screw <sup>2</sup>		Shielded	T13631
780	Solder Lug & Cable Clamp		Shielded	T13631



1. Other mating plugs are available.

2. Switchcraft replacement Part Number P1153. 2 screws required per plug.

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

### .097" SUBMINIATURE PHONE PLUGS



Numbers 850, 880



Number 851

#### FEATURES

- Subminiature, 2-conductor phone plugs are 1/3 the size of standard phone plugs, with the uniformity, dependability, and quality construction of Switchcraft Littell-Plug® and Tini Plug® phone plugs. 50 W soldering with 60/40 solder recommended for terminating.
- Switchcraft's 852, 853, 857, 858, 882 and 883 have a wider insulator between the tip and the sleeve. The wide insulator prevents the tip of the plug from shorting out between the tip spring and the sleeve of the jack during insertion.

**Micro-Plug® PLUG** - Sleeve terminal incorporates cable clamp. May be clamped over mated braid to anchor shielded cable; solders readily for perfect electrical connection. Terminals and plug body interlocked mechanically. Accommodates cable up to .125" Combined length, handle and tip: 1.106" outside diameter, .250" outside diameter handle.

**LOCK Micro-Plug® PLUG** - Similar to Micro-Plug plug, with addition of integral threaded collar that fastens to bushing of mating jack to prevent accidental disconnect. Requires at least .05" of exposed and usable thread on jack bushing to lock securely. Ideal for secure connections in critical medical and sensitive scientific instruments. Combined length, handle and tip: 1.046". Various molded cable assemblies incorporating Micro-Plug Subminiature phone plugs with plastic handles are available.

#### SPECIFICATIONS

##### MATERIALS

**Tip, Rod and Body (also integral Coupling Collar on Lock Micro-Plug):** Nickel-plated copper alloy.

**Insulation:** Molded thermoplastic.

**Sleeve Termination and Cable Clamp:**

Tinned copper alloy.

**Handle:** Anodized aluminum; red, black or natural finish.

#### MECHANICAL

**Life rating:** 5,000 insertion/withdrawals.

**Insertion/Withdrawal Force:** 1 pound (depending on mating jack).

#### ELECTRICAL

**Insulation Resistance:** > 100 megohms

**Dielectric Withstanding Voltage:** 250V AC.

#### ENVIRONMENTAL

**Thermal Range:** -55°C to +85°C (non-operating); -20°C to 65°C (operating).

**Thermal Shock:** Mil-Std 202, Method 107.

**Humidity:** Mil-Std 202, Method 106.

**Salt Spray:** Mil-Std 202, Method 101.

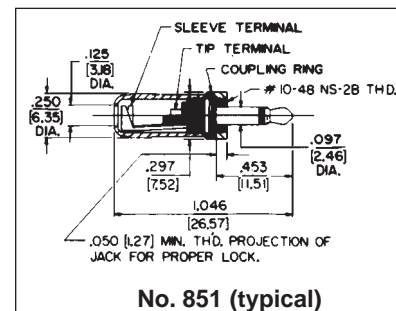
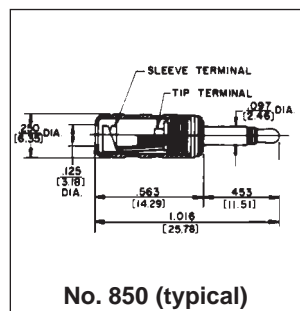
#### MICRO-PLUG

Part Number	Terminals	Mating Jacks <sup>1</sup>	Handle	Handle Part No.
850	Solder Lug	TR2A	Black	T18623
852			Black	T18623
855			Red	T18622
857			Red	T18622
880			Natural	T18621
882			Natural	T18621
2P1419			Less Handle	—

#### LOCK MICRO-PLUG

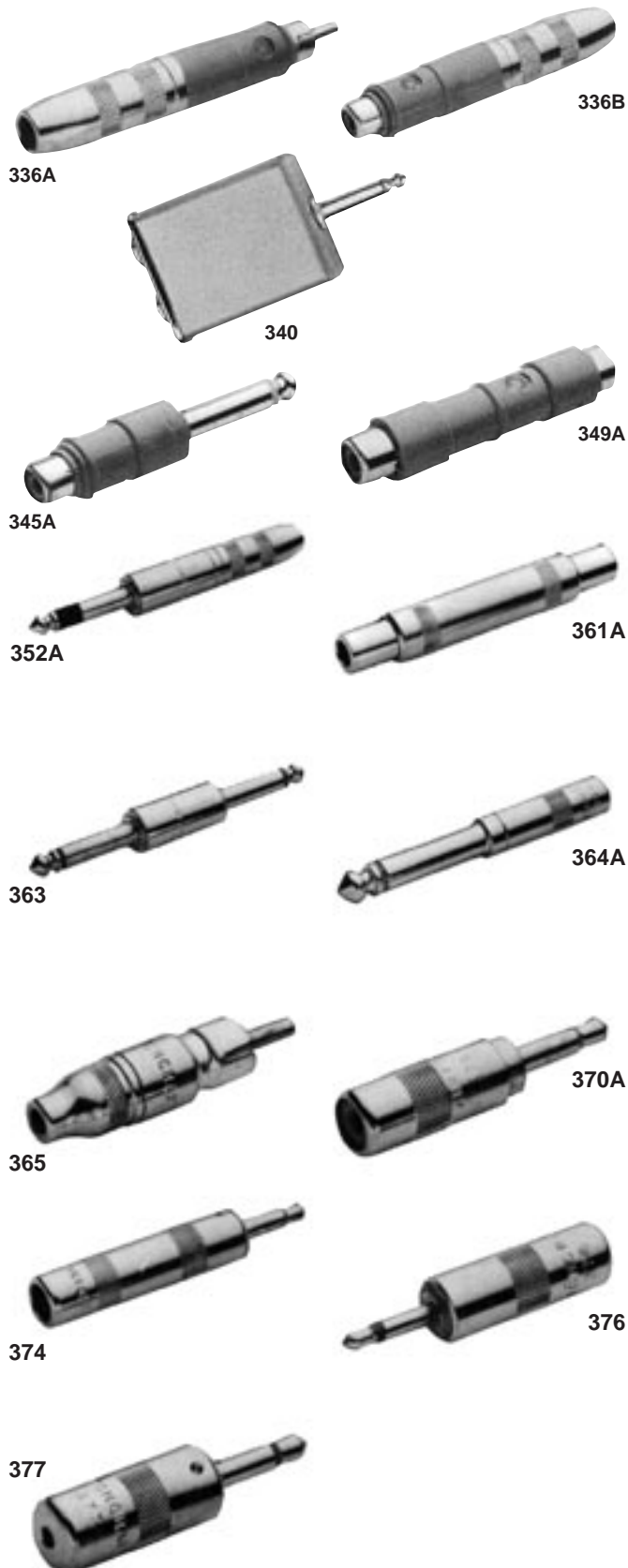
Part Number	Terminals	Mating Jacks <sup>1</sup>	Handle	Handle Part No.
851	Solder Lug	TR2A	Black	T23123
853			Black	T23123
856			Red	T23122
858			Red	T23122
881			Natural	T23121
883			Natural	T23121

1. Switchcraft Part Numbers. Other mating plugs are available.



DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## AUDIO ADAPTERS



**Part Number 332A (Not shown):** 2-cond. phone jack input to old MC1M-style microphone connector output. Coupling ring can be screwed back to convert female microphone connector to male type. Shielded.

**Part Number 336A:** 2-conductor phone jack input to a phono plug output. Shielded.

**Part Number 336B:** 2-conductor phone jack input to phono jack output. Shielded.

**Part Number 340:** Two 2-conductor phone jack inputs connected in parallel to a 2-conductor phone plug output. Shielded.

**Part Number 345A:** Phono plug input to a standard 2-conductor phone plug output. Shielded.

**Part Number 349A:** Phono plug coupler. Phono Extension Jax® input to phono Extension Jax output. Shielded.

◇ **Part Number 352A:** Stereo to monaural adapter. 3-conductor phone jack input to 2-conductor phone plug output. Extra-wide insulator prevents accidental damage should wrong connection be made. Shielded.

**Part Number 361A:** Phone plug coupler. Standard 1/4" inside diameter phone jack input to standard 1/4" inside diameter phone jack output. Ideal for connecting two cables terminated with 2-conductor phone plugs. Shielded.

**Part Number 362A (Not shown):** Phone plug coupler. Standard 3-cond. phone jack input to standard 3-cond. phone jack output. Ideal for connecting two cables terminated with 3-conductor phone jacks. Shielded.

**Part Number 363:** Phone jack coupler. Standard 1/4" 2-conductor phone plugs at each end to connect two cables terminated with phone Extension Jax. Shielded.

**Part Number 364A:** EIA Standard 2-conductor Tini-Jax® phone jack input to a standard 1/4" 2-conductor phone plug output. Shielded.

**Part Number 365:** EIA Standard 2-conductor Tini-Jax® phone jack input to a phono plug output. Shielded.

**Part Number 370A:** 2-conductor EIA Standard Tini-Plug® phone plug (.141" diameter finger) output to phono jack input. Adapts standard phono plug to small Tini-Plug. Shielded.

**Part Number 374:** 2-conductor phone jack input to a 2-conductor EIA Standard Tini-Plug (.141" diameter finger) phone plug output. Adapts standard phone plug to small Tini-Plug.

**Part Number 376:** EIA Standard Tini-Jax phone jack input to a 2-conductor Micro-Plug (.097" diameter finger) phone plug output. Adapts a Tini-Plug phone plug to a Micro-Plug phone plug.

**Part Number 377:** Micro-Jax phone jack input to a 2-conductor EIA Standard Tini-Plug (.141" diameter finger) phone plug output. Adapts a Micro-Plug phone plug to a Tini-Plug phone plug.

◇ Special order only. Contact Switchcraft.

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## PHONO PLUGS



## FEATURES

- Wide variety of styles for a wide range of applications.
- 3502A and 3502RA Series offer solid pin, large solder cups.
- 3558 Series utilize plastic handles for low cost applications.
- 3507 and 3504M have low-loss nylon insulators for RF applications. Can be used at 1 kW at 30 MHz.
- 3501M and 3501MC have the handle removed for tight spaces.
- Options include nickel and gold plated, or black epoxy finishes.

## SPECIFICATIONS

## MATERIALS

**Pin:** Nickel or gold plated, copper alloy

**Sleeve:** Nickel or gold plated, copper alloy

**Handle:** Nickel or gold plated, or black epoxy finish, copper alloy  
(3558 Series: Thermoplastic)

**Cable Clamp:** Tin, copper alloy

**Insulator:** Rigid Plastic

## ELECTRICAL

**Current Carry @ Working Voltage (typical \*D.O.M.J.):** 6A

**Contact Resistance (typical \*D.O.M.J.):** < 0.20 Ohms

**Dielectric Withstanding Voltage:** 500 VAC min.

**Insulation Resistance @ 500VDC:** 2,000 megohms min

**Working Voltage:** 250VAC, 140VDC

## MECHANICAL

**Life:** \*D.M.O.J

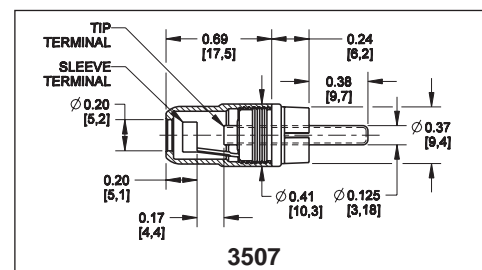
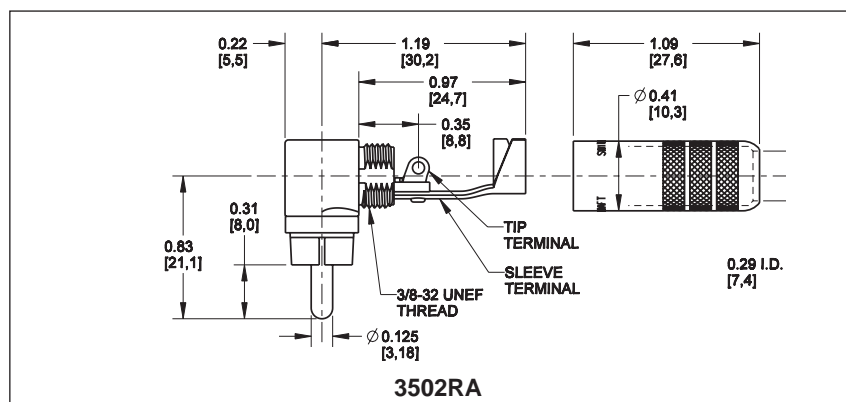
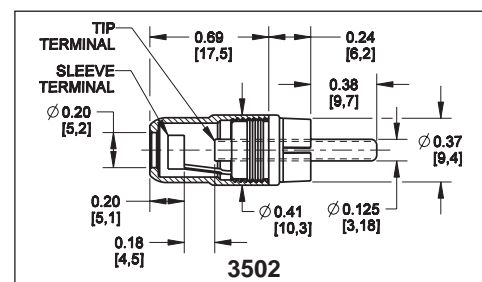
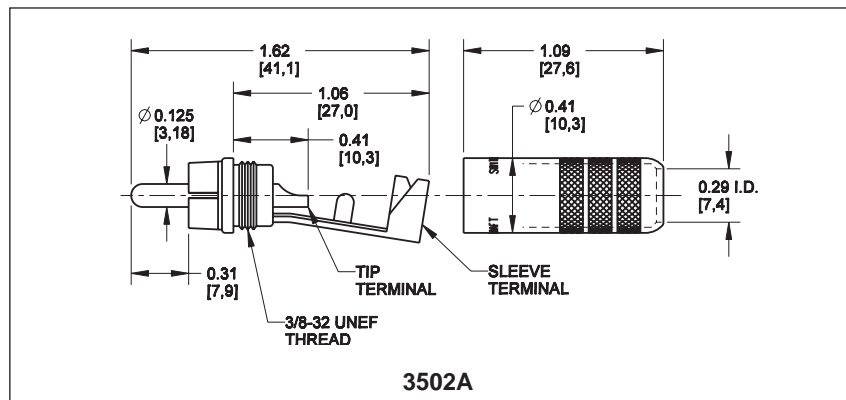
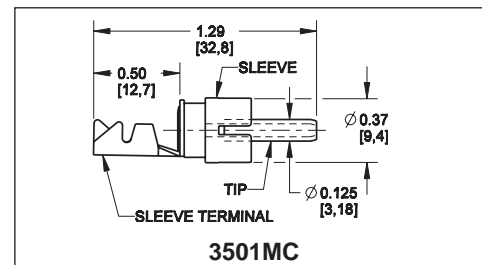
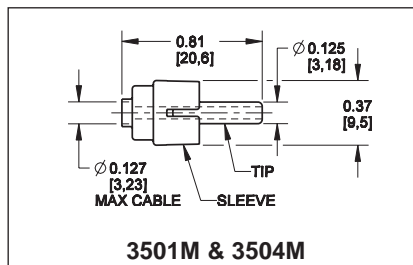
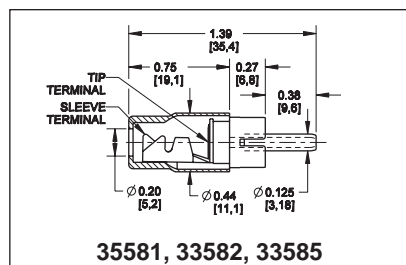
**Temperature Range:** -40° C to +85° C

\*D.M.O.J. –Dependent On Mating Jack

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$



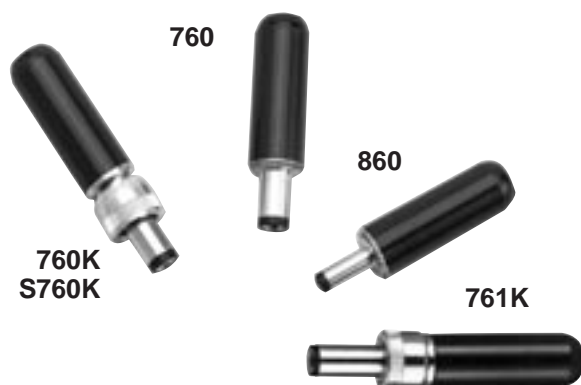
## PHONO PLUGS (continued)



Part Number	Description Pin	Typical Handle	Notes	Mating Jack
3502A	Nickel	Nickel		BP Series
3502AAU	Gold	Nickel		BP Series
3502ABAU	Gold	Black		BP Series
3502RA	Nickel	Nickel	Right angle	BP Series
3502RABAU	Gold	Black	Right angle	BP Series
3502RAAU	Gold	Nickel	Right angle	BP Series
35581	Nickel	Plastic	Red handle	BP Series
35582	Nickel	Plastic	Black handle	BP Series
35585	Nickel	Plastic	White handle	BP Series
3502	Nickel	Nickel		BP Series
3501M	Nickel			BP Series
3501MC	Nickel		Same as 3501M except with cable clamp	BP Series
3504M	Nickel		Same as 3507 less cable clamp and handle	3505F
3507	Nickel	Nickel	For RF applications	3505F
330F1	Nickel		2 inline jacks to 1 male plug, 4" gray shielded cable	BP Series
330F2	Nickel		1 inline jack, 1 male plug to 1 male plug, 4" gray shielded cable	BP Series

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$

## MINIATURE POWER PLUGS



## FEATURES AND BENEFITS

- 2-conductor power jacks.
- Hollow center pin available in 3 pin diameters and 2 finger lengths (See chart below).
- Locking option available for added security in critical applications.
- Molded plastic handles available in black or red.
- Sleeve terminal serves as cord clamp.

## SPECIFICATIONS

**Plug Sleeve and Pin:** Nickel-plated copper alloy.

**Lockring:** Nickel-plated copper alloy.

**Locking Thread Size:** 5/16 - 32 UNEF 2B.

**Finger Insulator:** Molded plastic.

**Insulating Washers:** Rigid plastic.

**Sleeve Terminal:** Copper alloy, electro-tinned.

**Handle:** Molded plastic.

**Handle Thread Size:** 5/16 - 24 UNF 2B.

**Electrical:** Current (Carry): 5 amps.

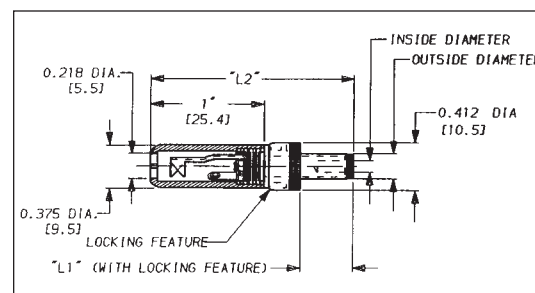
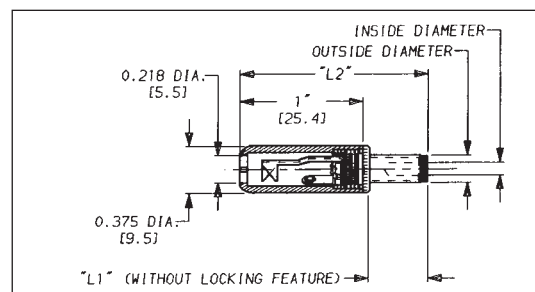
## ORDERING INFORMATION

1. Order by part number. 2. Contact Switchcraft for more information.
3. ◇ Indicates "special order" only.

## PART NUMBERING and MATING CHART (Power plugs/Power jacks)

Part Number	Inside Diameter	Outside Diameter	Length "L1"	Length "L2"	Locking Feature	Tip Insulator	Handle Color	Handle Part Number	Switchcraft® Mating Jack <sup>1</sup>
760	.100"	.218"	.375"	1.42	No	Black	Black	M1055	712A, RAPC712, RASH712, RASM712, PC712A, RA712A
765	.100"	.218"	.375"	1.42	No	Black	Red	M1056	712A, RAPC712, RASH712, RASM712, PC712A, RA712A
760K	.100"	.218"	.375"	1.7	Yes	Black	Black	M1055	712A, PC712A
761K	.100"	.218"	.475"	1.8	Yes	Black	Black	M1055	L712A, PCL712A
765K	.100"	.218"	.375"	1.7	Yes	Black	Red	M1056	712A, PC712A
766K	.100"	.218"	.475"	1.8	Yes	Black	Red	M1056	L712A, PCL712A
◇2P1515	.100"	.218"	.375"	1.42	No	Black	No Handle	No Handle	712A, PC712A
S760	.080"	.218"	.375"	1.42	No	White	Black	M1055	722A, RAPC722, RASH722, RASM722, PC722A, RA722A
S765	.080"	.218"	.375"	1.42	No	White	Red	M1056	722A, RAPC722, RASH722, RASM722, PC722A, RA722A
S760K	.080"	.218"	.375"	1.7	Yes	Black	Black	M1055	722A, PC722A
S761K	.080"	.218"	.475"	1.8	Yes	Black	Black	M1055	L722A, PCL722A
S765K	.080"	.218"	.375"	1.7	Yes	Black	Red	M1056	722A, PC722A
S766K	.080"	.218"	.475"	1.8	Yes	Black	Red	M1056	L722A, PCL722A
2P1624	.080"	.218"	.375"	1.42	No	White	No Handle	No Handle	722A, PC722A
860	.050"	.150"	.375"	1.42	No	Black	Black	M1055	RAPC 732, RASH 732, RASM 732
865	.050"	.150"	.375"	1.42	No	Black	Red	M1056	RAPC 732, RASH 732, RASM 732

<sup>1</sup>See pages 130-134.



## INSIDE DIAMETER TOLERANCES (PLUGS)

860/865:	.050" (.050 - .053)
	1.27mm (1.27 - 1.35)
S760/S765*:	.080" (.080 - .084)
	2mm (2.03 - 2.13)
760/765*:	.100" (.099 - .103)
	2.5mm (2.52 - 2.61)

## OUTSIDE DIAMETER TOLERANCES (PLUGS)

860/865:	.150" (.149 - .153)
	3.81mm (3.78 - 3.89)
S760/S765*:	.218" (.217 - .221)
	5.5mm (5.51 - 5.61)
760/765*:	.218" (.217 - .221)
	5.5mm (5.51 - 5.61)

\*includes locking (k) versions

DIMENSIONS ARE FOR REFERENCE ONLY  $\frac{\text{Inch}}{(\text{mm})}$