JVA15 Series

DC-DC Converter

XP Power

15 Watts

- Renewable Energy and Industrial Applications
- Ultrawide Input Range - 200-1500 VDC
- Fully Encapsulated PCB Mount & DIN Rail Versions
- Optional DIN Rail Versions with Built In EMI Filter & 1500 VDC Fuse
- -40 °C to +70 °C Operating Temperature
- Remote On/Off
- 3 Year Warranty



Dimensions:

JVA1515005: 4.4 x 2.95 x 1.58" (111.76 x 75.0 x 40.0 mm)
JVA1515005-D: 5.43 x 5.75 x 2.17" (138.0 x 146.0 x 55.0 mm)
JVA1515005-DF: 5.08 x 4.02 x 1.92" (129.0 x 102.0 x 49.0 mm)

Models & Ratings

Output Power	Input Voltage	Output Voltage	Overvoltage Protection	Output Current	Input Current[1]	Maximum Capacitive Load	Model Number[2,3]
10 W	200-1500 V	5.0 V	8.0 V	2000 mA	80 mA	6000 µF	JVA151500S05
15 W		12.0 V	20.0 V	1250 mA	106 mA	2000 µF	JVA151500S12
		15.0 V	20.0 V	1000 mA	105 mA	1200 µF	JVA151500S15
		24.0 V	30.0 V	625 mA	102 mA	470 µF	JVA151500S24

Notes

1. At 200 VDC input
2. For DIN rail mount option, add suffix '-D' e.g. JVA151500S12-D
3. For DIN rail with added EMI filter option, add suffix '-DF' e.g. JVA151500S24-DF

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage Range	200		1500	VDC	See derating curve
Input Current		110/30/16		mA	200 VDC/800 VDC/1500 VDC input
Inrush Current		30/80/150		A	200 VDC/800 VDC/1500 VDC input
Input Filter	Pi type				
Undervoltage Lockout	On 180-195 V, Off 170-185 V				
Input Protection	External 15 A/1500 VDC required				This is already included in the optional -DF version

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	5		24	V	See Models and Ratings table
Initial Set Accuracy		±2		%	
Minimum Load	0			A	No minimum load required
Start Up Delay			2	s	
Line Regulation		±1.0	3	%	
Load Regulation		1	3	%	0 - 100% load
Ripple & Noise		150	300	mV pk-pk	20 MHz bandwidth
Short Circuit Protection					Trip & Restart (hiccup mode), auto recovery
Overload Protection	120		320	%	Trip & Restart (hiccup mode)
Overvoltage Protection					See Models and Ratings table
Temperature Coefficient			0.02	%/°C	

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency		72		%	See Models and Ratings table
Isolation	4000			VAC	For 60 s
Switching Frequency		65		kHz	
Operating Altitude			5000	m	Derate from 100% load at 2000 m to 80% load at 5000 m
Mean Time Between Failure	300			kHrs	MIL-HDBK-217F, +25 °C GB
Weight		0.66 (300)		lb (g)	For PCB mount version

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-40		+70	°C	See derating curve
Storage Temperature	-50		+85	°C	
Case Temperature			95	°C	
Humidity	5		95	%RH	Non-condensing
Cooling					Natural convection
Shock	±3 shocks in each plane, total 18 shocks of 30 g : 11 ms halfsine. Conforms to EN60068-2-27 & EN60068-2-47				
Vibration	10-500 Hz at 2 g sweep and endurance at resonance in all 3 planes. Conforms to EN60068-2-6				

EMC: Emissions

Phenomenon	Standard	Test Level	Notes & Conditions
Conducted	EN55032	Level A	See application notes. Not required for '-DF' versions
Radiated	EN55032	Level A	

EMC: Immunity

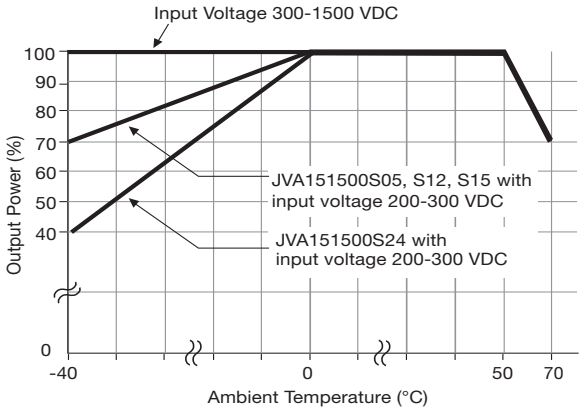
Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
Immunity	EN55024			
ESD Immunity	EN61000-4-2	±6 kV Contact, ±8 kV Air	A	
Radiated Immunity	EN61000-4-3	10 V/m	A	
EFT/Burst	EN61000-4-4	3	A	
Surges	EN61000-4-5	3	A	
Conducted Immunity	EN61000-4-6	10 Vm	A	
Magnetic Fields	EN61000-4-8	30 A/m	A	

Safety Approvals

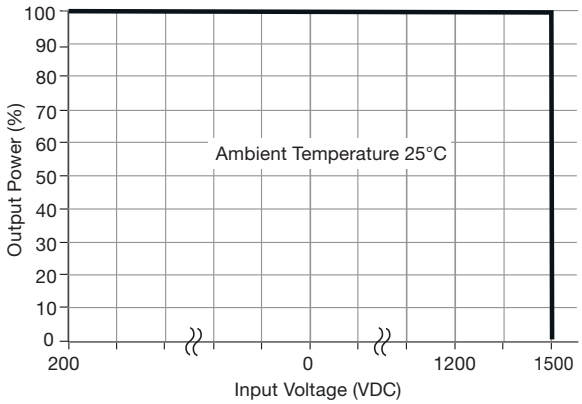
Safety Agency	Safety Standard	Notes & Conditions
EN	EN62109	Photovoltaic Power System
UL	UL1741/CSA-C22.2 No.107-1	Distributed Energy Resources

Application Notes

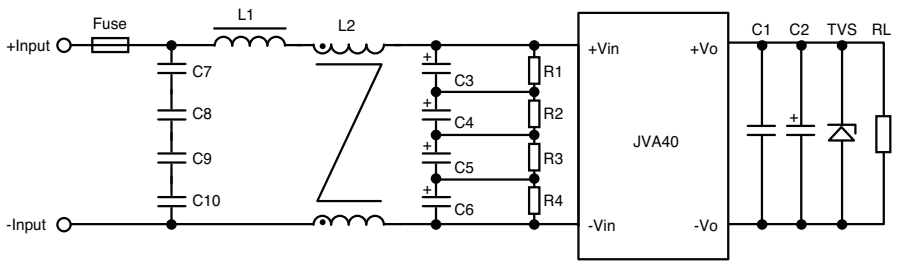
Thermal Derating Curve



Input Derating Curve



EMI Filter for Conducted Emissions

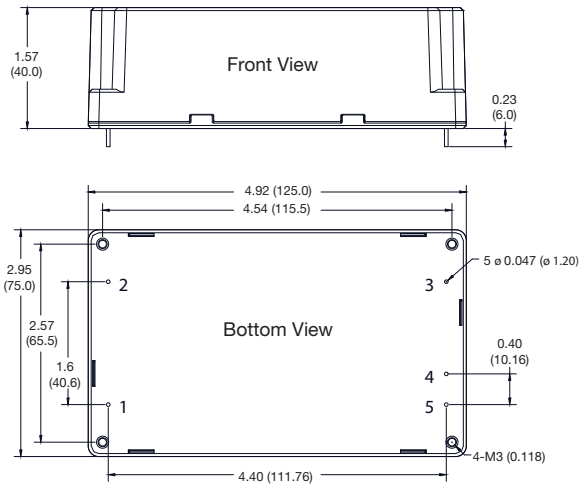


Model	C1 (µF)	C2 (µF)	TVS
JVA151500S05	1	120	SMBJ7.0A
JVA151500S12		120	SMBJ20A
JVA151500S15		120	SMBJ20A
JVA151500S24		68	SMBJ30A

Element Model	Recommended Value
C7/C8/C9/C10	104K/275 VAC
C3/C4/C5/C6	47 µF/450 VDC
R1/R2/R3/R4	1 MΩ/2 W
L1	330 µH/1 A
L2	7 mH/1 A
Fuse	15 A/1500 VDC

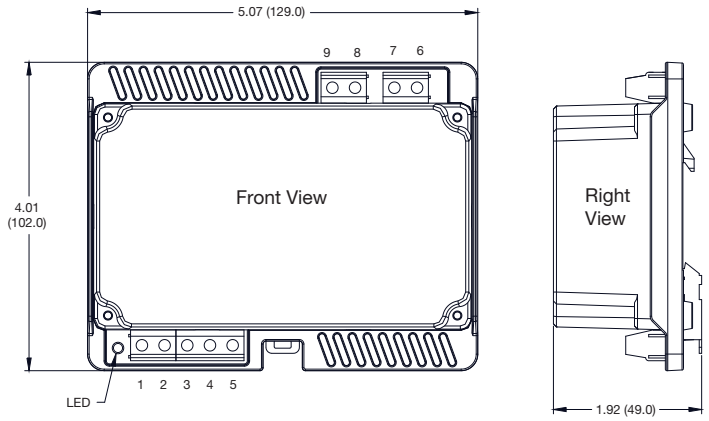
Mechanical Details

Standard PCB mount



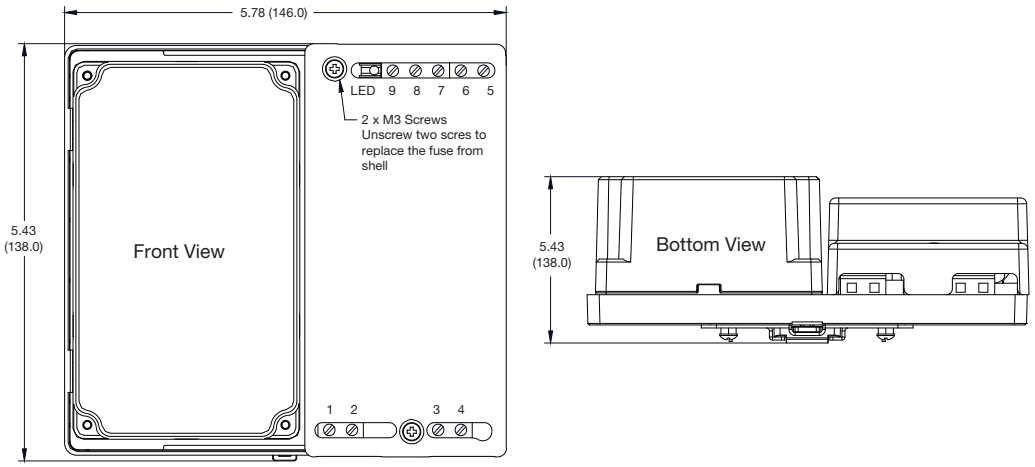
Pin Connections	
Pin	Function
1	-Vin
2	+Vin
3	No Connection
4	-Vo
5	+Vo

Optional DIN rail mount, -D



Pin Connections	
Pin	Function
1	+Vo
2	-Vo
3	No Connection
4	No Connection
5	No Connection
6	+Vin
7	+Vin
8	-Vin
9	-Vin

Optional DIN rail mount with filter, -DF



Pin Connections	
Pin	Function
1	-Vin
2	-Vin
3	+Vin
4	+Vin
5	+Vo
6	-Vo
7	No Connection
8	No Connection
9	No Connection

Notes

1. All dimensions are in inches (mm)

2. Weight: Standard PCB mount: 0.66 lbs (300 g) approx
Optional DIN rail mount, -D: 0.79 lbs (360 g) approx
Optional DIN rail mount with filter, -DF: 1.34 lbs (610 g) approx