

0.5–1 Amps SR Series



- 3 Pin SIP 3T Switching Regulator
- Wide Input Range
- Continuous Short-circuit Protection
- Pin Compatible with LM78MXX
- Efficiency up to 97%
- -40 °C to +85 °C Operating Temperature
- 3 Year Warranty

Specification

Input

- Input Voltage Range • See table
- Input Current • See table
- Input Reflected Ripple • SR05: 35 mA pk-pk, SR10: 40 mA pk-pk, through 12 μ H inductor, 5 Hz to 20 MHz
- Input Filter • External capacitor (see application notes)

Output

- Output Voltage • See table
- Minimum Load • No minimum load required
- Line Regulation • $\pm 0.5\%$ max
- Load Regulation • $\pm 0.6\%$ from 10% to 100% load
- Setpoint Accuracy • $\pm 2\%$
- Turn-on Time • See note 6
- Ripple & Noise • 60 mV pk-pk with 10% minimum load, 20 MHz bandwidth
- Maximum Capacitive Load • 220 μ F
- Short Circuit Protection • Indefinite (automatic recovery)
- Temperature Coefficient • 0.02%/°C

General

- Efficiency • See table
- Isolation Voltage • Non-isolated
- Switching Frequency • 330 kHz typical
- Package Style • 3 pin SIP
- MTBF • >4.5 Mhrs to MIL-HDBK-217F at 25 °C, GB

Environmental

- Operating Temperature • SR05: -40 °C to +85 °C, SR10: -40 °C to +60 °C,
- Operating Humidity • 95% RH
- Case Temperature • +100 °C max
- Storage Temperature • -40 °C to +125 °C
- Cooling • Convection-cooled

Notes

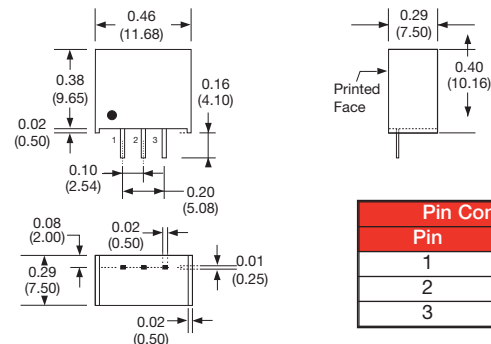
1. All dimensions in inches (mm)
2. Weight: 0.004 lbs (1.8 g)
3. Pin pitch tolerance: ± 0.014 (± 0.35)
4. Case tolerance: ± 0.02 (± 0.5)
5. Efficiency range given for maximum V_{in} to minimum V_{in}
6. For maximum reliability, ensure turn on time is >1 ms by placing a 47 μ F capacitor between +Vin and GND

Input Voltage	No Load Input Current	Output Voltage	Output Current	Efficiency [†]	Model Number
4.75-34 VDC	10 mA	1.5 V	500 mA	64-79%	SR05S1V5 ^{†^}
4.75-34 VDC	10 mA	1.8 V	500 mA	66-82%	SR05S1V8 ^{†^}
4.75-34 VDC	10 mA	2.5 V	500 mA	72-87%	SR05S2V5 ^{†^}
4.75-34 VDC	10 mA	3.3 V	500 mA	77-91%	SR05S3V3 ^{†^}
6.50-34 VDC	10 mA	5.0 V	500 mA	83-94%	SR05S05 ^{†^}
8.00-34 VDC	10 mA	6.5 V	500 mA	85-95%	SR05S6V5 ^{†^}
9.00-34 VDC	10 mA	7.2 V	500 mA	86-95%	SR05S7V2 ^{†^}
11.00-34 VDC	10 mA	9.0 V	500 mA	88-96%	SR05S09 ^{†^}
15.00-34 VDC	10 mA	12.0 V	500 mA	91-96%	SR05S12 ^{†^}
18.00-34 VDC	10 mA	15.0 V	500 mA	92-97%	SR05S15 ^{†^}
4.75-18 VDC	15 mA	1.5 V	1000 mA	71-78%	SR10S1V5 ^{†^}
4.75-18 VDC	15 mA	1.8 V	1000 mA	75-82%	SR10S1V8 ^{†^}
4.75-18 VDC	15 mA	2.5 V	1000 mA	80-87%	SR10S2V5 ^{†^}
4.75-18 VDC	15 mA	3.3 V	1000 mA	83-90%	SR10S3V3 ^{†^}
6.50-18 VDC	15 mA	5.0 V	1000 mA	88-93%	SR10S05 ^{†^}

[†] Available from Farnell & element14. See pages 284-290.

[^] Available from Newark. See pages 291-296.

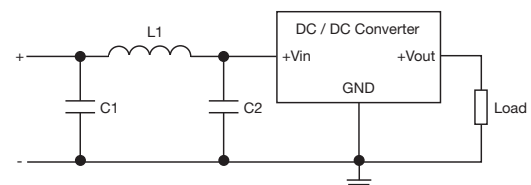
Mechanical Details



Pin Connections	
Pin	Function
1	+Vin
2	GND
3	+Vout

Application Notes

Input Filter to meet Class B Conducted Emissions



C1	L1	C2
470 μ F, 35 V	6.4 μ H	470 μ F, 35 V