

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

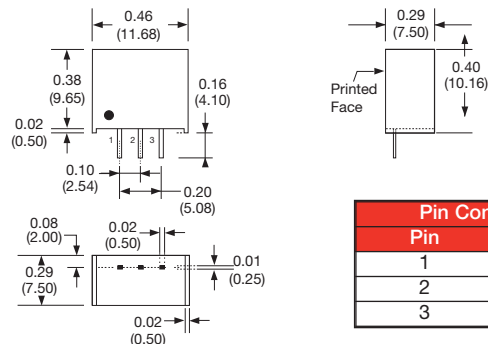
- Operating Temperature • SR05: -40 °C to +85 °C, SR10: -40 °C to +60 °C,
- Operating Humidity • 95% RH
- Case Temperature • +100 °C max
- Storage Temperature • -40 °C to +125 °C
- Cooling • Convection-cooled

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 ⁹ | 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 |

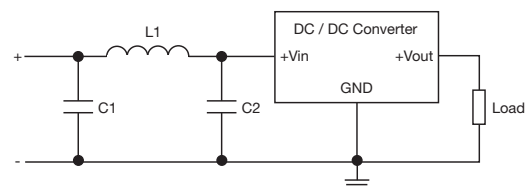
Mechanical Details



| 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 |