

## 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  $\mu$ 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  $\mu$ 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

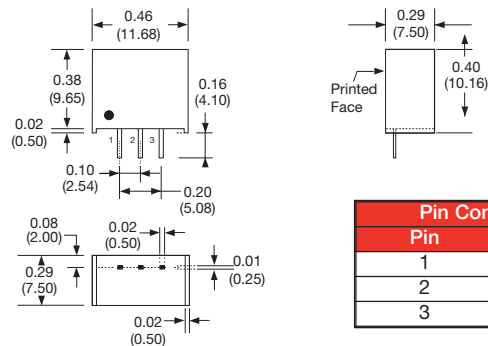
- Operating Temperature • SR05: -40 °C to +85 °C, SR10: -40 °C to +60 °C,
- Operating Humidity • 95% RH
- Case Temperature • +100 °C max
- Storage Temperature • -40 °C to +125 °C
- Cooling • Convection-cooled

#### Notes

1. All dimensions in inches (mm)
2. Weight: 0.004 lbs (1.8 g)
3. Pin pitch tolerance:  $\pm 0.014$  ( $\pm 0.35$ )
4. Case tolerance:  $\pm 0.02$  ( $\pm 0.5$ )
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  $\mu$ F capacitor between +Vin and GND

| Input Voltage | No Load Input Current | Output Voltage | Output Current | Efficiency <sup>9</sup> | 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      |

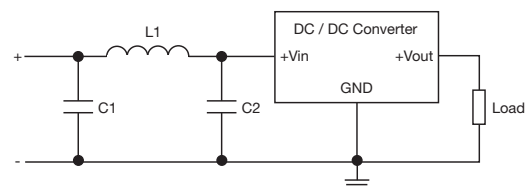
### Mechanical Details



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

### Application Notes

#### Input Filter to meet Class B Conducted Emissions



| C1                | L1          | C2                |
|-------------------|-------------|-------------------|
| 470 $\mu$ F, 35 V | 6.4 $\mu$ H | 470 $\mu$ F, 35 V |