# 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 µH 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 | • ±0.5% max |
| Load Regulation | • ±0.6% from 10% to 100% load |
| Setpoint Accuracy | • ±2% |
| Turn-on Time | • See note 6 |
| Ripple & Noise | • 60 mV pk-pk with 10% minimum load, 20 MHz bandwidth |
| Maximum Capacitive Load | • 220 µF |
| 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 |

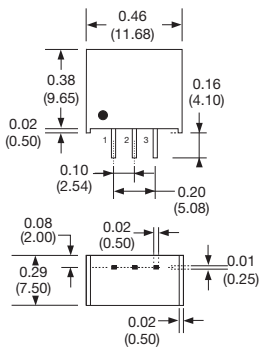
### Notes

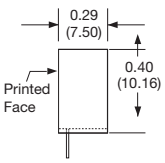
1. All dimensions in inches (mm)
2. Weight: 0.004 lbs (1.8 g)
3. Pin pitch tolerance: ±0.014 (±0.35)
4. Case tolerance: ±0.02 (±0.5)
5. Efficiency range given for maximum Vin to minimum Vin
6. For maximum reliability, ensure turn on time is >1 ms by placing a 47 µF capacitor between +Vin and GND

| Input Voltage | No Load Input Current | Output Voltage | Output Current | Efficiency[5] | 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

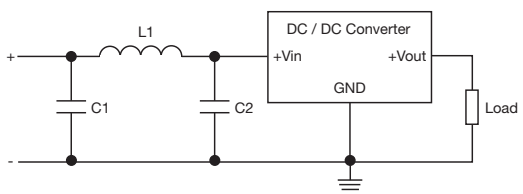



| Pin Connections | |
|---|---|
| Pin | Function |
| 1 | +Vin |
| 2 | GND |
| 3 | +Vout |

## Application Notes

### Input Filer to meet Class B Conducted Emissions




| C1 | L1 | C2 |
|---|---|---|
| 470 µF, 35 V | 6.4 µH | 470 µF, 35 V |