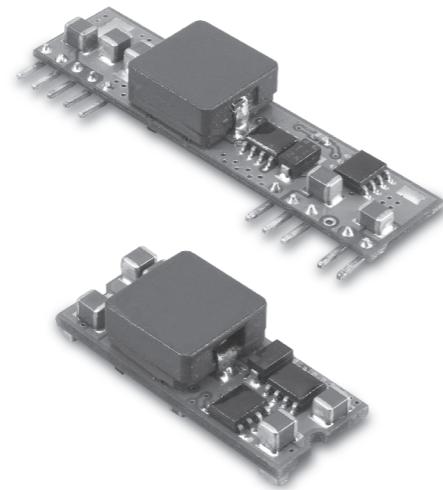


SIP SMT10-12

S E R I E S

10 AMP POL CONVERTERS



Features

- Non-Isolated POL Converter
- SIP / SMT Package
- Output Current 10AMP
- Input Voltage Range 9-14VDC
- 300KHz Switching Frequency
- High Efficiency to 95%
- Over Temperature Protection
- Continuous Short Circuit Protection
- Remote On/Off Control
- UL/c-UL 60950 Certified

| MODEL NUMBER | INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | INPUT CURRENT | | % EFF. |
|-------------------------------|---------------|----------------|----------------|---------------|-----------|----------|
| | | | | NO LOAD | FULL LOAD | |
| SIP 10-12S10 SMT10-12S10 | 9.0-14 VDC | 1.0VDC | 10 A | 50mA | 992mA | 84 |
| SIP 10-12S12 SMT10-12S12 | 9.0-14 VDC | 1.2VDC | 10 A | 50mA | 1163mA | 86 |
| SIP 10-12S15 SMT10-12S15 | 9.0-14 VDC | 1.5VDC | 10 A | 50mA | 1404mA | 89 |
| SIP 10-12S18 SMT10-12S18 | 9.0-14 VDC | 1.8VDC | 10 A | 60mA | 1666mA | 90 |
| SIP 10-12S20 SMT10-12S20 | 9.0-14 VDC | 2.0VDC | 10 A | 60mA | 1832mA | 91 |
| SIP 10-12S25 SMT10-12S25 | 9.0-14 VDC | 2.5VDC | 10 A | 60mA | 2264mA | 92 |
| SIP 10-12S33 SMT10-12S33 | 9.0-14 VDC | 3.3VDC | 10 A | 70mA | 2956mA | 93 |
| SIP 10-12S05 SMT10-12S05 | 9.0-14 VDC | 5.0VDC | 10 A | 70mA | 4385mA | 95 |
| SIP 10-12S05A SMT10-12S05A | 8.3-14 VDC | 0.75-5VDC | 10 A | 70mA | 2956mA | 93%@3.3V |

NOTE: 1. Nominal Input Voltage 12VDC

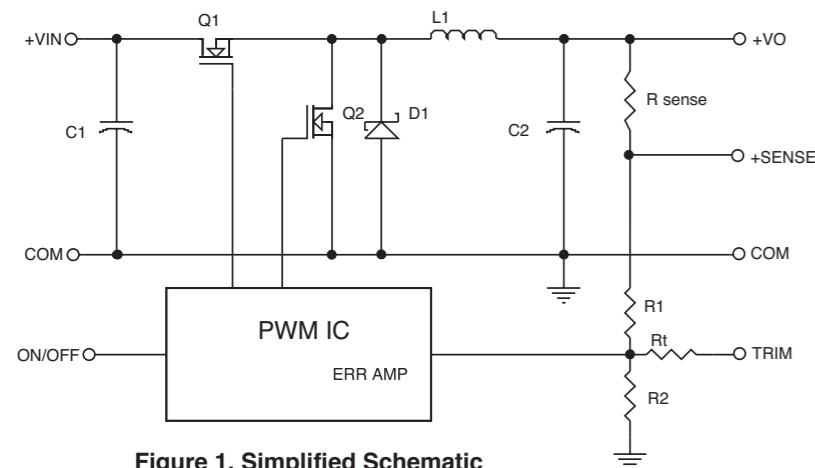


Figure 1. Simplified Schematic

| Vo, set (V) | Rtrim (KΩ) |
|-------------|------------|
| 0.75 | Open |
| 1.2 | 22.33 |
| 1.5 | 13.0 |
| 1.8 | 9.0 |
| 2.0 | 7.4 |
| 2.5 | 5.0 |
| 3.3 | 3.12 |
| 5.0 | 1.47 |

Table 1. Suffix "A" to the model number External Resistor Values for programming output voltage

Specifications

INPUT SPECIFICATIONS:

Input Voltage Range.....12V.....9.0 – 14V
 12V.....8.3 – 14V
 Under Voltage Lock-outPower up8.0V Typ.
 Power down.....7.7V Typ.
 Input Filter Type.....Capacitive
 Positive Remote on/off Control :
 Module ON.....Open Circuit or = Vin
 Module OFF.....< 0.4 Vdc

OUTPUT SPECIFICATIONS:

Voltage Accuracy.....±1.5% max.
 Transient Response :25% Step Load Change.....<200μ sec.
 Ripple and Noise, 20MHz BW³.....20mV rms max.
 50mV pk-pk max.
 Temperature Coefficient.....±0.03%/C max.
 Short Circuit Protection.....Continuous
 Line Regulation¹.....± 0.2% max.
 Load Regulation².....± 0.5% max.
 Capacitive Load, Low ESR.....8000μF max.
 External Trim Adj. Range.....±10%
 (SIP/SMT10-12S05).....+5%, -10%
 (SIP/SMT10-12S05A).....0.75V-5.0V

GENERAL SPECIFICATIONS:

Efficiency.....See Table
 Isolation Voltage.....Non-isolation
 Switching Frequency300kHz Typ.
 Over Temperature Protection120°C Typ.
 Operating Ambient Temperature Range.....-40°C to +85°C
 Power Derating Curvesee Figure 2,3
 Storage Temperature Range-55°C to +125°C
 Dimensions:
 SIP Package: 2.00 x 0.512 x 0.327 inches (50.8 x 13.0 x 8.30 mm)
 SMT Package: 1.30 x 0.530 x 0.366 inches (33.0 x 13.46 x 9.30 mm)
 Structure.....Non-potted With Open Frame Type
 Weight.....1.0g

SIP10-12S33 Derating Curve

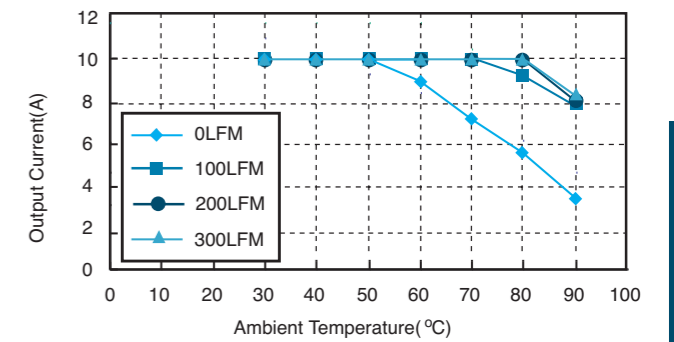


Figure 2. Typical Power Derating vs. Output Current for 12V IN

SMT10-12S33 Derating Curve

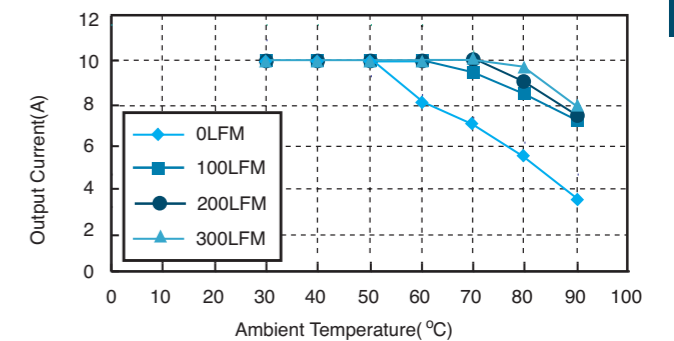


Figure 3. Typical Power Derating vs. Output Current for 12V IN

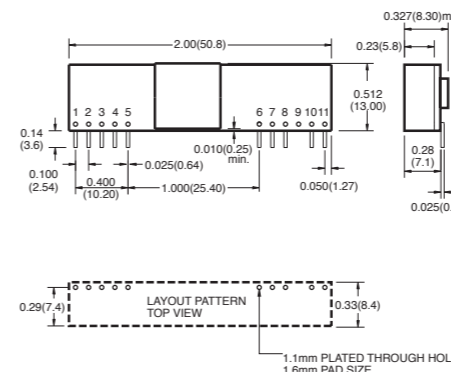
NOTE:

1. Measured From High Line to Low Line
2. Measured From Full Load to Zero Load
3. The output noise is measured with 100uf tantalum capacitor and 1uf ceramic capacitor across output.
4. The Input Terminal Recommend to Parallel With 100uF Capacitor ESR<100mΩ to Reduce The Input Ripple Voltage
5. Suffix "N" to the Model Number with Negative Logic Remote on/off
 Model ON.....Open Circuit or < 0.4VDC
 Module OFF.....>+2.8VDC to Vin

Mechanical Specification

All Dimensions In Inches(mm)
 Tolerance Inches: x.xx= ±0.02, x.xxx= ±0.010
 Millimeters: x.x= ±0.5, x.xx= ±0.25

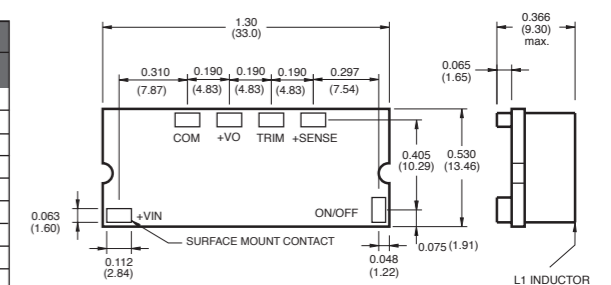
SIP Packages



| Pin | Function |
|-----|----------------|
| 1 | +Output |
| 2 | +Output |
| 3 | +Sense |
| 4 | +Output |
| 5 | Common |
| 6 | Common |
| 7 | +V Input |
| 8 | +V Input |
| 9 | No Pin |
| 10 | Trim |
| 11 | On/Off Control |

SMT Packages

BOTTOM VIEW OF BOARD



All Specifications Typical At Nominal Line, Full Load and 25°C Unless Otherwise Noted.