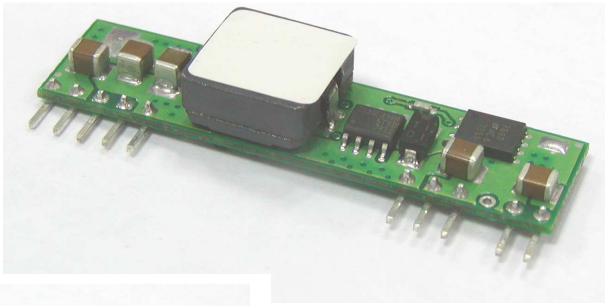
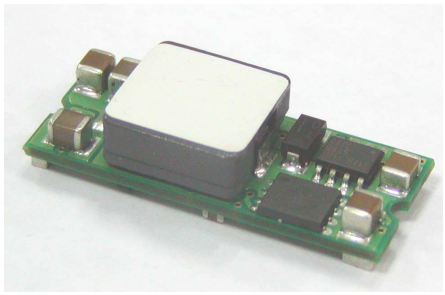
SIPSMT16-12 SERIES
16 AMP
POL CONVERTERS

E176177

FEATURES

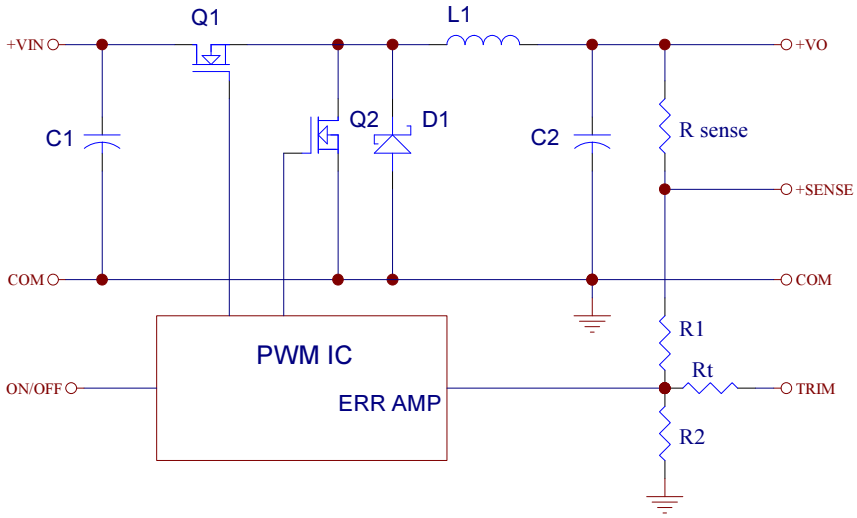
* Non-isolated POL Converter
* SIP / SMT Package
* Output Current 16AMP
* Input Voltage Range 9.0 –14VDC
* Output Voltage Range 0.75 – 5.0VDC
* 300KHz Switching Frequency
* High Efficiency to 94%
* Over Temperature Protection
* Continuous Short Circuit Protection
* Remote On/Off Control
* UL/C-UL60950 Certified





MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT		Efficiency (%)
				NO LOAD	FULL LOAD	
SIP16-12S05A SMT16-12S05A	9.0 – 14VDC	0.75VDC	16A	40mA	1299mA	77
		1.2VDC	16A	50mA	1928mA	83
		1.5VDC	16A	50mA	2326mA	86
		1.8VDC	16A	60mA	2727mA	88
		2.0VDC	16A	60mA	2996mA	89
		2.5VDC	16A	65mA	3704mA	90
		3.3VDC	16A	75mA	4783mA	92
		5.0VDC	16A	75mA	7092mA	94

NOTE: Nominal Input Voltage 12VDC



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. External Resistor Values for programming output voltage

Figure 1. Simplified Schematic

SPECIFICATIONS

All Specifications Typical At Nominal Line, Full Load, and 25℃ Unless Otherwise Noted

INPUT SPECIFICATIONS:

Input Voltage Range ..... 12V ..... 9.0 – 14V
Under Voltage Lock-out ..... Power up ..... 8.0V typ.
Power down ..... 7.7V typ.
Input Filter Type ..... Capacitive
Positive Remote on/off Control:
Module ON ..... Open Circuit or =Vin
Module OFF ..... <0.4Vdc

OUTPUT SPECIFICATIONS:

Voltage Accuracy ..... ±1.5% max.
Transient Response: 25% Step Load Change ..... <200us
Ripple and Noise, 20MHz BW (note 3) ..... 30mVrms max.
75mVpk-pk max.
Temperature Coefficient ..... ±0.03%/C max.
Short Circuit Protection ..... Continuous
Line Regulation (note 1) ..... ±0.2% max.
Load Regulation (note 2) ..... ±0.5% max.
Capacitive Load Low ESR ..... 8000uF max.
External Trim Adj. Range (see Table1) ..... Vo=0.75 – 5.0Vdc
Start up time ..... 7ms typ.

GENERAL SPECIFICATIONS:

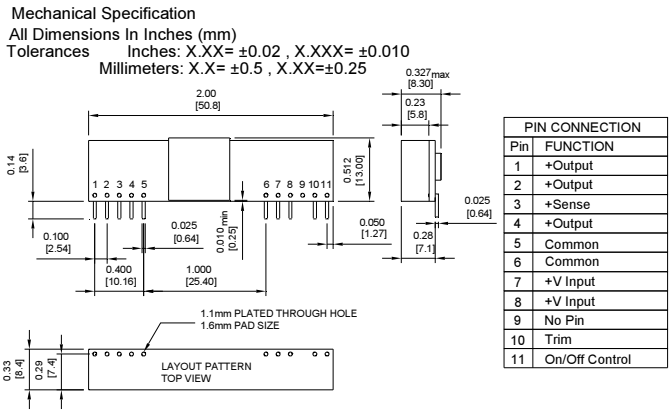
Efficiency ..... See Table
Isolation Voltage ..... Non-isolation
Switching Frequency ..... 300KHz typ.
Over Temperature Protection ..... 130℃ typ.
Operating Ambient Temperature Range ..... -40℃ to +85℃
Power Derating Curve ..... see Figure2, 3
Storage Temperature Range ..... -55℃ to +125℃
MTBF ..... MIL-STD-217F, GB, 25℃, Full Load ..... 0.98Mhrs typ.
Dimensions: SIP Package: 2.00x0.512x0.327inches(50.8x13.00x8.30mm)
SMT Package: 1.30x0.530x0.366 inches(33.0x13.46x9.30mm)
Structure ..... Non-potted With Open Frame Type
Weight 10g

NOTE:

1. Measured From High Line to Low Line, Vo,set=3.3Vdc
2. Measured From Full Load to Zero Load, Vo,set=3.3Vdc
3. The output noise is measured with 10uf 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

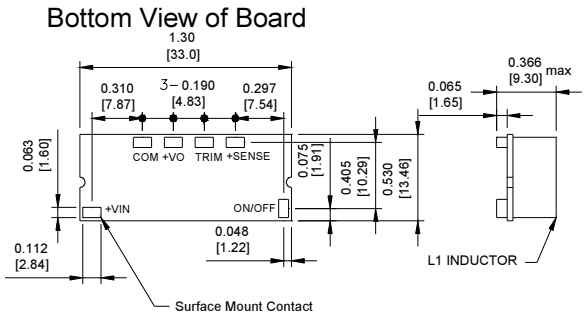
Dimensions:

SIP Packages



PIN CONNECTION	
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



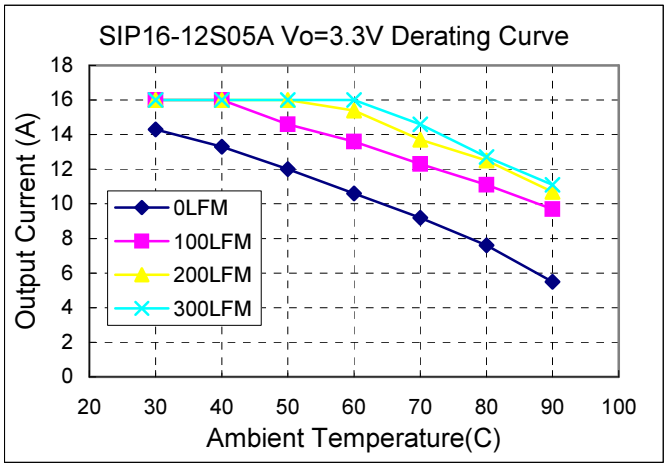


Figure2. Typical Power De-rating for 12V IN

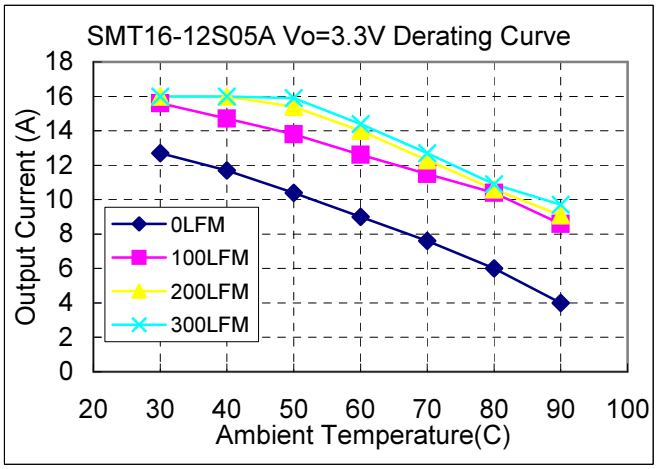


Figure3. Typical Power De-rating for 12V IN