



# SIPSMT16-12 SERIES

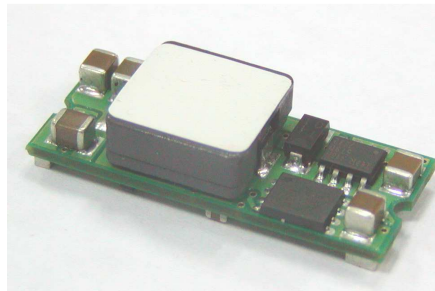
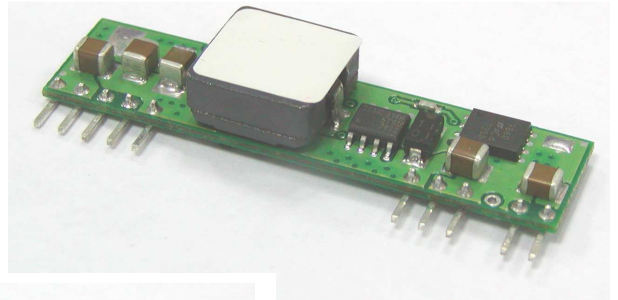
## 16 AMP

### POL CONVERTERS



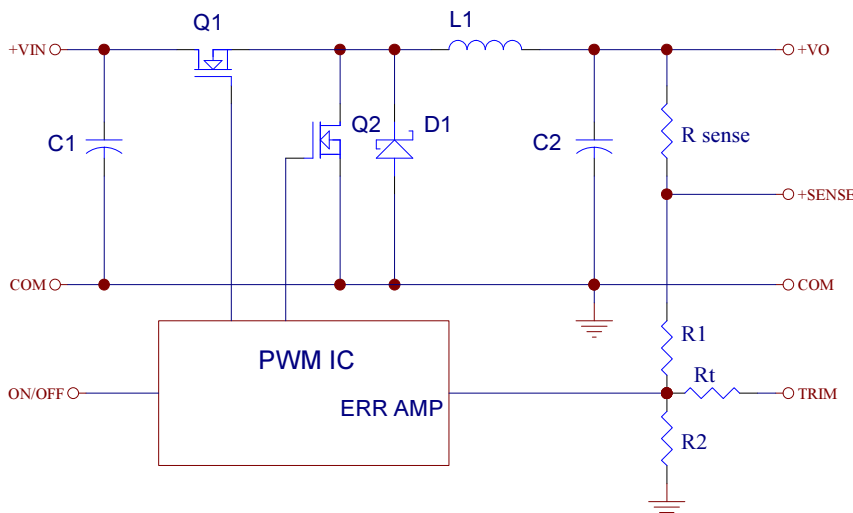
### FEATURES

- \* 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°C 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°C typ.
Operating Ambient Temperature Range	-40°C to +85°C
Power Derating Curve	see Figure2, 3
Storage Temperature Range	-55°C to +125°C
MTBF	MIL-STD-217F, GB, 25°C, 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

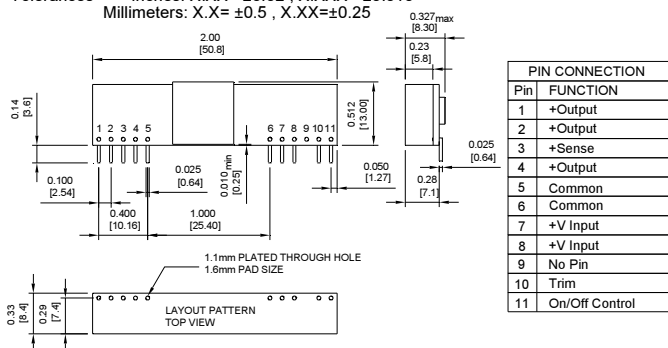
## NOTE:

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

Mechanical Specification  
 All Dimensions In Inches (mm)  
 Tolerances Inches: X.XX= ±0.02, X.XXX= ±0.010  
 Millimeters: X.X= ±0.5, X.XX= ±0.25



### SMT Packages

#### Bottom View of Board

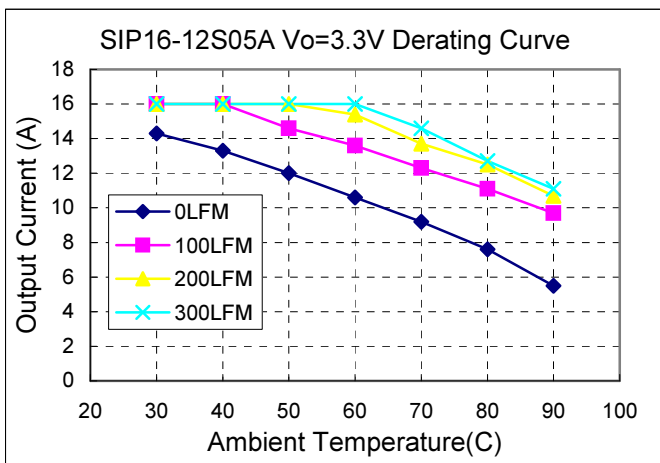
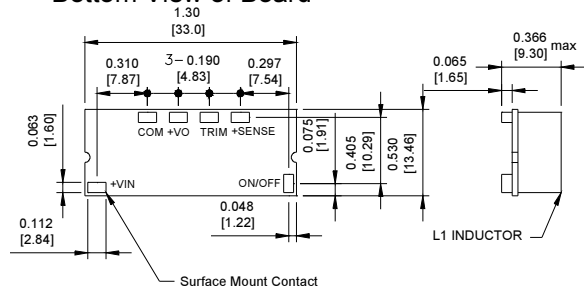


Figure2. Typical Power De-rating for 12V IN

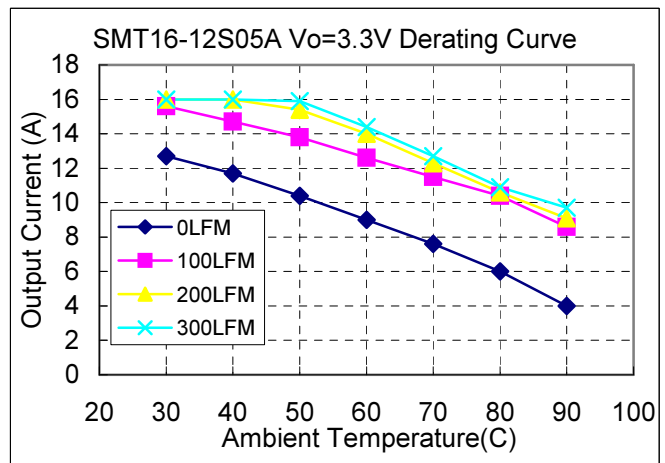


Figure3. Typical Power De-rating for 12V IN