



# SIPSMT15-05 SERIES

## 15 AMP

## POL CONVERTERS



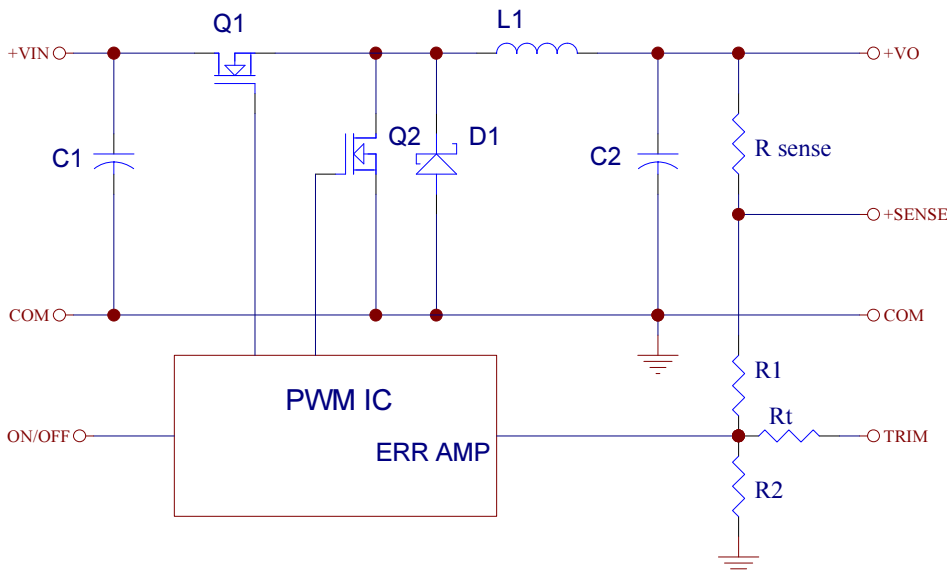
### FEATURES

- \* Non-isolated POL Converter
- \* SIP / SMT Converter
- \* Output Current 15AMP
- \* Input Voltage Range 3-5.5VDC
- \* Output Voltage Range 0.9-3.63VDC
- \* 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	
SIP15-05S33A SMT15-05S33A	3.0 – 5.5 VDC	0.75 VDC	15 A	60 mA	3.658 A	82
		1.2 VDC	15 A	60 mA	4.286 A	84
		1.5 VDC	15 A	60 mA	5.172 A	87
		1.8 VDC	15 A	70 mA	6.136 A	88
		2.0 VDC	15 A	70 mA	6.742 A	89
		2.5 VDC	15 A	70 mA	8.152 A	92
	4.5 – 5.5 VDC	3.3 VDC	15 A	70 mA	10.532 A	94

NOTE: Nominal Input Voltage 5VDC



Vo,set (V)	Rtrim (KΩ)
0.90	135.36
1.00	79.17
1.20	41.71
1.50	22.98
1.80	14.96
2.00	11.75
2.50	6.93
3.30	3.15
3.63	2.20

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 .....  $V_o$ , set  $\leq V_{in} - 0.5V_{DC} \dots 5V$  ..... 3.0 – 5.5V  
 Under Voltage Lock-out ..... Power up ..... 2.8V typ.  
 ..... Power down ..... 2.7V typ.  
 Input Filter Type ..... Capacitive  
 Positive Remote on/off Control:  
 Module On ..... Open Circuit or =  $V_{in}$   
 Module Off ..... <0.4Vdc

## OUTPUT SPECIFICATIONS:

Voltage Accuracy .....  $\pm 1.5\%$  max.  
 Transient Response: 25% Step Load Change ..... <200us  
 Ripple and Noise, 20MHz BW (note3) ..... 20mVrms max.  
 ..... 50mVpk-pk max.  
 Temperature Coefficient .....  $\pm 0.03\%/C$  max.  
 Short Circuit Protection ..... Continuous  
 Line Regulation (note1) ..... SIP15-05S33A .....  $\pm 0.2\%$  max.  
 ..... SMT15-05S33A .....  $\pm 0.4\%$  max.  
 Load Regulation (note2) .....  $\pm 0.5\%$  max.  
 Capacitive Load Low ESR ..... 10000uF max.  
 External Trim Adj. Range (see Table1) .....  $V_o = 0.9 - 3.63V_{dc}$   
 Start up time ..... 4.5ms typ.

## GENERAL SPECIFICATIONS:

Efficiency ..... See Table  
 Isolation Voltage ..... Non-isolation  
 Switching Frequency ..... 300KHz typ.  
 Over Temperature Protection ..... 120°C typ.  
 Operating Ambient Temperature Range ..... -40°C to +85°C  
 Power De-rating Curve ..... see Figure2, 3  
 Storage Temperature Range ..... -55°C to +125°C  
 MTBF ..... MIL-STD-217F, GB, 25°C, Full Load ..... 1.5Mhrs typ.  
 Dimensions: SIP Package: 2.00x0.327x0.52 inches (50.8x8.3x13.2 mm)  
 SMT Package: 1.30x0.53x0.366 inches (33.0x13.46x9.30 mm)  
 Structure ..... Non-potted With Open Frame Type  
 Weight ..... 6.8g

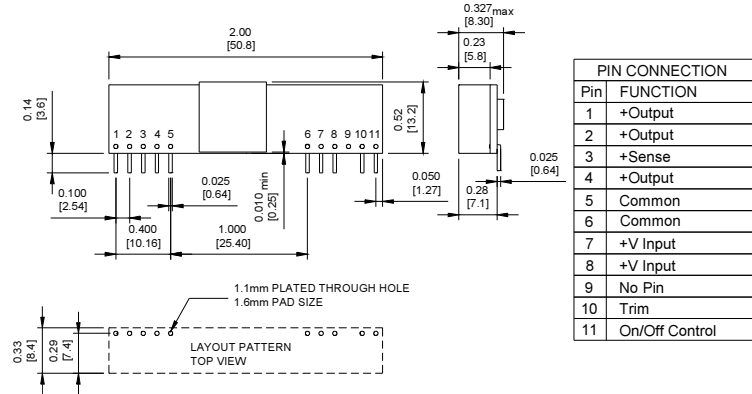
## NOTE:

1. Measured from high line to low line,  $V_o$ , set=1.8Vdc.
2. Measured from full load to zero load,  $V_o$ , 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<20mΩ 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  $V_{in}$

## Dimensions:

### SIP Packages

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



### SMT Packages

#### Bottom View of Board

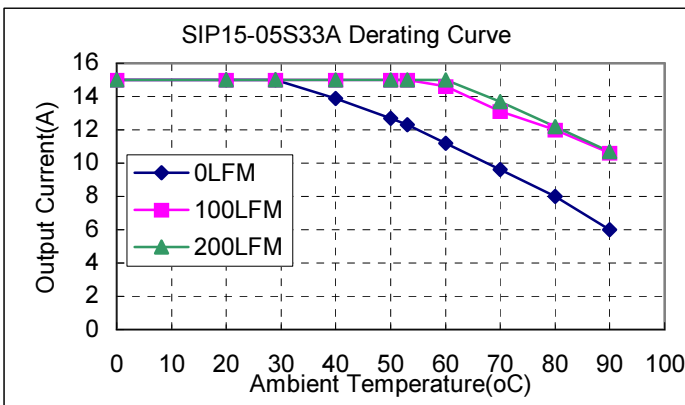
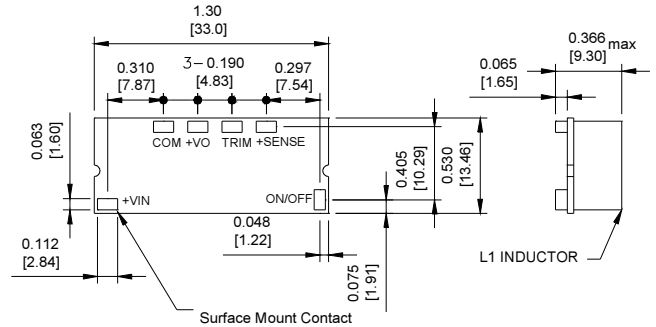


Figure2. Typical Power De-rating for 5Vin

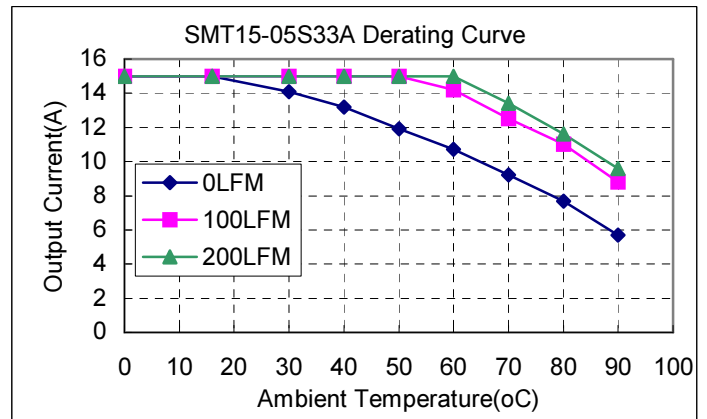


Figure3. Typical Power De-rating for 5Vin