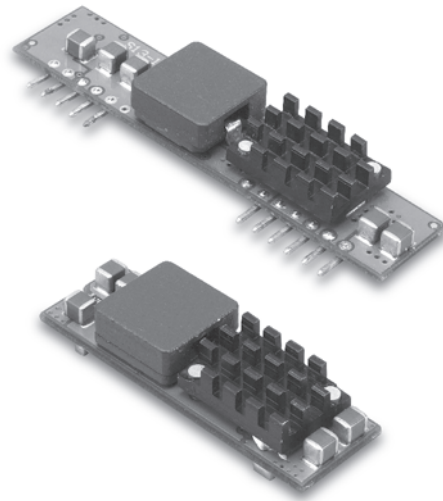


SIP SMT 20W-12

S E R I E S

20 AMP POL CONVERTERS



Features

- Non-Isolated POL Converter
- SIP / SMT Package
- Output Current 20AMP
- Input Voltage Range 6-14VDC
- Output Voltage Range 0.7525-5VDC
- 300KHz Switching Frequency
- High Efficiency to 94%
- Over Temperature Protection
- Continuous Short Circuit Protection
- Remote On/Off Control
- Output Voltage Sequencing
- Power Good Signal
- UL/C-UL 60950 Certified

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT		% EFF.
				NO LOAD	FULL LOAD	
SIP 20W-12S05A	6.0-14 VDC	0.7525 VDC	20 A	40 mA	1603 mA	78
	6.0-14 VDC	1.2 VDC	20 A	50 mA	2381 mA	84
	6.0-14 VDC	1.5 VDC	20 A	50 mA	2874 mA	87
SMT20W-12S05A	6.0-14 VDC	1.8 VDC	20 A	50 mA	3409 mA	88
	6.0-14 VDC	2.0 VDC	20 A	60 mA	3745 mA	89
	6.0-14 VDC	2.5 VDC	20 A	65 mA	4630 mA	90
	6.0-14 VDC	3.3 VDC	20 A	75 mA	5978 mA	92
	6.5-14 VDC	5.0 VDC	20 A	95 mA	8865 mA	94

NOTE: 1. Nominal Input Voltage 12VDC

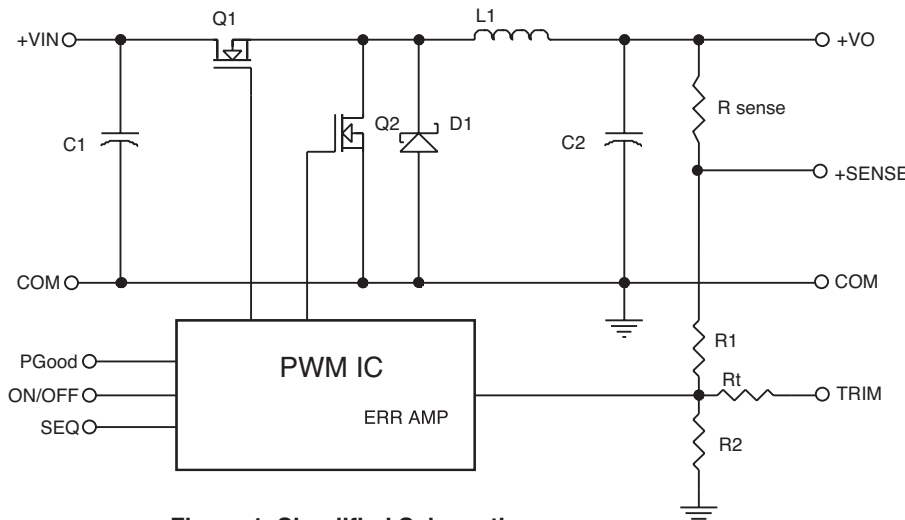


Figure 1. Simplified Schematic

$V_o, set (V)$	$R_{trim} (K\Omega)$
0.7525	Open
1.2	22.46
1.5	13.05
1.8	9.024
2.0	7.417
2.5	5.009
3.3	3.122
5.0	1.472

Table 1. External Resistor Values for programming output voltage

Specifications

INPUT SPECIFICATIONS:

Input Voltage Range.....12V..... 6.0 – 14V
 12V..... 6.5 – 14V
 Under Voltage Lock-outPower up 5.0V typ.
 Power down..... 4.0V 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: 50% Step Load Change.....< 200µs
 Ripple and Noise, 20MHz BW³..... 30mV RMS max.
 75mV pk-pk max.
 Temperature Coefficient.....±0.03%/C max.
 Short Circuit Protection..... Continuous
 Line Regulation¹..... ± 0.2% max.
 Load Regulation²..... ± 0.5% max.
 External Trim Adj. Range (see Table 1)..... Vo=0.7525-5.0Vdc
 Sequencing Slew Rate Capability (dV_{seq}/dt)..... 0.1-1.0V/msec
 Sequencing Delay Time..... 10msec min.
 Tracking Accuracy.....Power up..... 200mV max.
 Power down..... 400mV max.
 Capacitive Load Low ESR..... 8000µF max.
 Power Good Signal Asserted Logic High..... Vo=90%-100%Vo,nom
 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 Figure 2,3
 Storage Temperature Range -55°C to +125°C
 MTBF...MIL-STD-217F, GB, 25°C, Full Load..... 900Khrs typ.
 Dimensions:
 SIP Package: 2.40x0.510x0.327 inches (61.0x12.95x8.3 mm)
 SMT Package: 1.70x0.530x0.366 inches (43.2x13.46x9.3 mm)
 Structure..... Non-potted With Open Frame Type
 Weight.....11g

SIP20W-12S05A (Vo=3.3V) Derating Curve

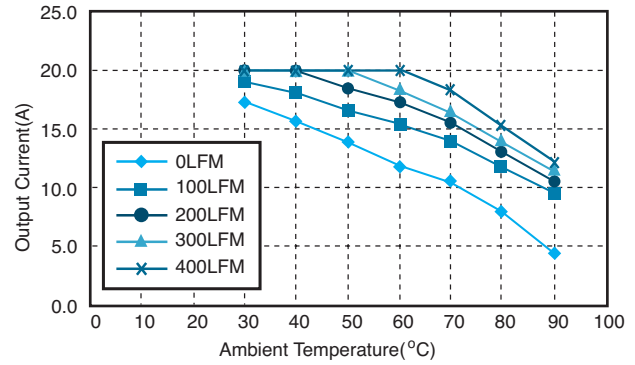


Figure 2. Typical Power De-rating for 12Vin

SMT20W-12S05A (Vo=3.3V) Derating Curve

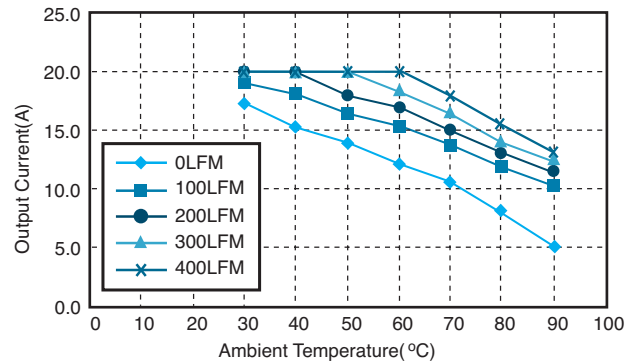


Figure 3. Typical Power De-rating for 12Vin

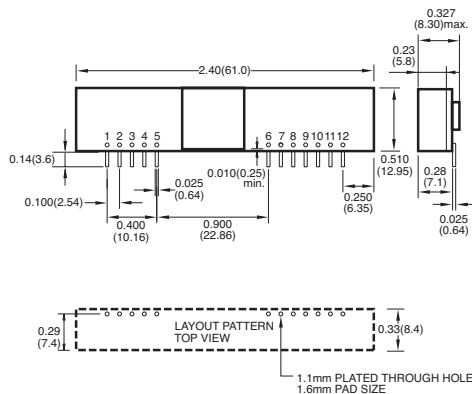
NOTE:

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 10µF tantalum capacitor and 1µF ceramic capacitor across output.
4. The Input Terminal Recommend to Parallel With 200µF Capacitor ESR<25mΩ to Reduce The Input Ripple Voltage.
5. Suffix "N" to the Model Number with Negative Logic Remote on/off
 Module ON..... Open Circuit or < 0.4VDC
 Module OFF..... >+2.8VDC to Vin
6. Suffix "P" to the Model Number with Power Good function.

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 CONNECTION

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

SMT Packages

BOTTOM VIEW OF BOARD

