

## SMC/SMD Series



- High Peak Load Rating
- Single Outputs from 3.3 V to 54 V
- Active PFC
- Remote On/Off
- Optional Current Share
- SEMI F47 Compliant
- Up to 800 W Output Power

## Specification

## Input

Input Voltage	• 90-264 VAC (SMC800: 180-264 VAC)
Input Frequency	• 47-63 Hz
Input Current	• 11 A at 90 VAC, 5 A at 230 VAC
Inrush Current	• 70 A at 230 VAC
Power Factor	• 0.99 typical
Earth Leakage Current	• <2.4 mA max at 264 VAC
Input Protection	• Fitted with a T10A/250V fuse

## Output

Output Voltage	• See tables
Output Voltage Trim	• $\pm 5\%$
Initial Set Accuracy	• $\pm 1\%$
Minimum Load	• No minimum load required
Start Up Delay	• 1.5 s at 230 VAC, 2.5 s at 110 VAC
Start Up Rise Time	• 40 ms typical
Hold Up Time	• 18 ms max at 120 VAC
Line Regulation	• $\pm 0.5\%$ , low line to high line
Load Regulation	• $\pm 1\%$ , 1-100% of load (see note 4)
Over/Undershoot	• 5% max
Transient Response	• 5% max deviation, 500 $\mu$ s recovery to within 1% for a 50% load change
Ripple & Noise	• 50 mV ( $V_o \leq 5$ V), 1% ( $V_o \geq 12$ V) (see note 2)
Overvoltage Protection	• > 130% recycle input to reset
Overtemperature Protection	• > 85 $^{\circ}$ C ambient with auto recovery (measured internally)
Overload Protection	• 110% to 135% with auto recovery
Short Circuit Protection	• 110% to 135% with auto recovery
Remote Sense	• Compensates for up to 0.5V line drop
Remote On/Off	• On = TTL Logic HIGH, or open circuit Off = TTL Logic LOW or short circuit
Current Share	• Optional single wire current share within 10%

## General

Efficiency	• 80% min at 230 VAC, 70% min for $V_o \leq 5$ V
Isolation	• 3000 VAC Input to Output 1500 VAC Input to Ground 250 VDC Output to Ground
Switching Frequency	• 100 kHz PWM, 60 kHz PFC
Power Density	• 6.93 W/in <sup>3</sup>
Signals	• Green LED for Power On, Power Good TTL HIGH within 100-500 ms and LOW $\leq 1$ ms before loss of regulation
MTBF	• 100 kHrs min per MIL-HDBK-217F

## Environmental

Operating Temperature	• 0 to 70 $^{\circ}$ C, derates from 100% load at 50 $^{\circ}$ C to 50% load at 70 $^{\circ}$ C
Cooling	• 30 CFM for SMD U-channel versions
Operating Humidity	• 5% - 90%, non-condensing
Storage Temperature	• -20 $^{\circ}$ C to +85 $^{\circ}$ C
Operating Altitude	• 3000 m
Vibration	• 5-50 Hz, acceleration 7.35 ms <sup>2</sup> on X, Y and Z axis

## EMC &amp; Safety

Emissions	• FCC Part 15 & CISPR 22 Class B conducted
Harmonic Currents	• EN61000-3-2, EN61000-3-3
ESD Immunity	• EN61000-4-2, level 3 Perf Criteria B
Radiated Immunity	• EN61000-4-3, 3 V/m Perf Criteria B
EFT/Burst	• EN61000-4-4, level 2 Perf Criteria B
Surge	• EN61000-4-5, level 3 Perf Criteria B
Conducted Immunity	• EN61000-4-6, 3V Perf Criteria B
Safety Approvals	• UL60950, CSA C22.2 No. 950, EN60950, CE Mark LVD, SEMI F47 Compliant (high line only) at 100% rated power output

**Models and Ratings**

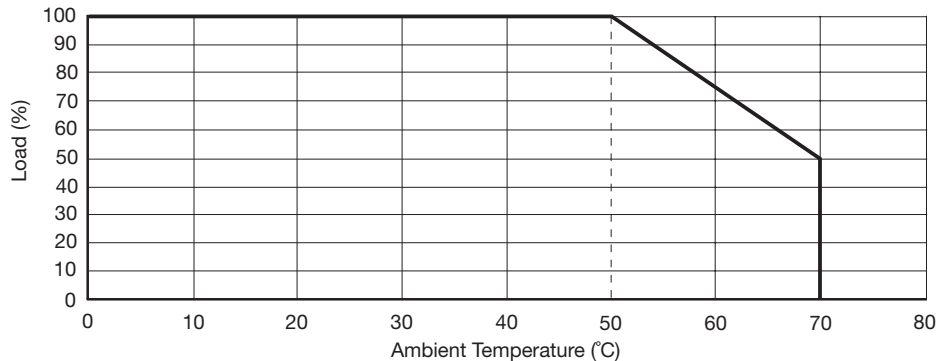
Output Power	Output Voltage <sup>(3,4)</sup>	Output Current		Ripple & Noise <sup>(2)</sup>	Model Number
		Minimum	Peak <sup>(1)</sup>		
264 W	3.3 V	80.00 A	120.00 A	50 mV	SMC500PS03-C
400 W	5.0 V	80.00 A	120.00 A	50 mV	SMC500PS05-C *
500 W	12.0 V	41.67 A	75.00 A	120 mV	SMC500PS12-C *
	15.0 V	31.00 A	56.00 A	150 mV	SMC500PS15-C *
	18.0 V	27.78 A	50.00 A	180 mV	SMC500PS18-C
	24.0 V	20.83 A	37.50 A	240 mV	SMC500PS24-C *
	27.0 V	18.50 A	33.33 A	270 mV	SMC500PS27-C
	36.0 V	13.89 A	25.00 A	360 mV	SMC500PS36-C
	48.0 V	10.42 A	18.75 A	480 mV	SMC500PS48-C *
	54.0 V	9.25 A	16.67 A	540 mV	SMC500PS54-C
297 W	3.3 V	90.00 A	135.00 A	50 mV	SMC600PS03-C
450 W	5.0 V	90.00 A	135.00 A	50 mV	SMC600PS05-C *
600 W	12.0 V	50.00 A	75.00 A	120 mV	SMC600PS12-C *
	15.0 V	40.00 A	56.00 A	150 mV	SMC600PS15-C *
	18.0 V	33.00 A	50.00 A	180 mV	SMC600PS18-C
	24.0 V	25.00 A	37.50 A	240 mV	SMC600PS24-C *
	27.0 V	22.22 A	33.33 A	270 mV	SMC600PS27-C
	36.0 V	16.67 A	25.00 A	360 mV	SMC600PS36-C
	48.0 V	12.50 A	18.75 A	480 mV	SMC600PS48-C *
	54.0 V	11.10 A	16.67 A	540 mV	SMC600PS54-C
750 W	12.0 V	62.50 A	75.00 A	120 mV	SMC800PS12-C
800 W	15.0 V	53.33 A	60.00 A	150 mV	SMC800PS15-C
	18.0 V	44.44 A	50.00 A	180 mV	SMC800PS18-C
	24.0 V	33.33 A	37.50 A	240 mV	SMC800PS24-C
	27.0 V	29.60 A	33.33 A	270 mV	SMC800PS27-C
	36.0 V	22.22 A	25.00 A	360 mV	SMC800PS36-C
	48.0 V	16.66 A	18.75 A	480 mV	SMC800PS48-C
	54.0 V	14.80 A	16.67 A	540 mV	SMC800PS54-C

**Notes**

1. This peak can be taken for 500  $\mu$ s only, average power should not exceed the maximum power.
2. Ripple & Noise is measured using 0.1  $\mu$ F ceramic and 22  $\mu$ F electrolytic capacitor, 20 MHz bandwidth.
3. Alternative output voltages available. Consult sales.
4. Load regulation increases to 2% for 0-1% load change.

\*Available from Newark InOne

**Derating Curve**



**Notes**

1. SMD units require 30 CFM forced air cooling.

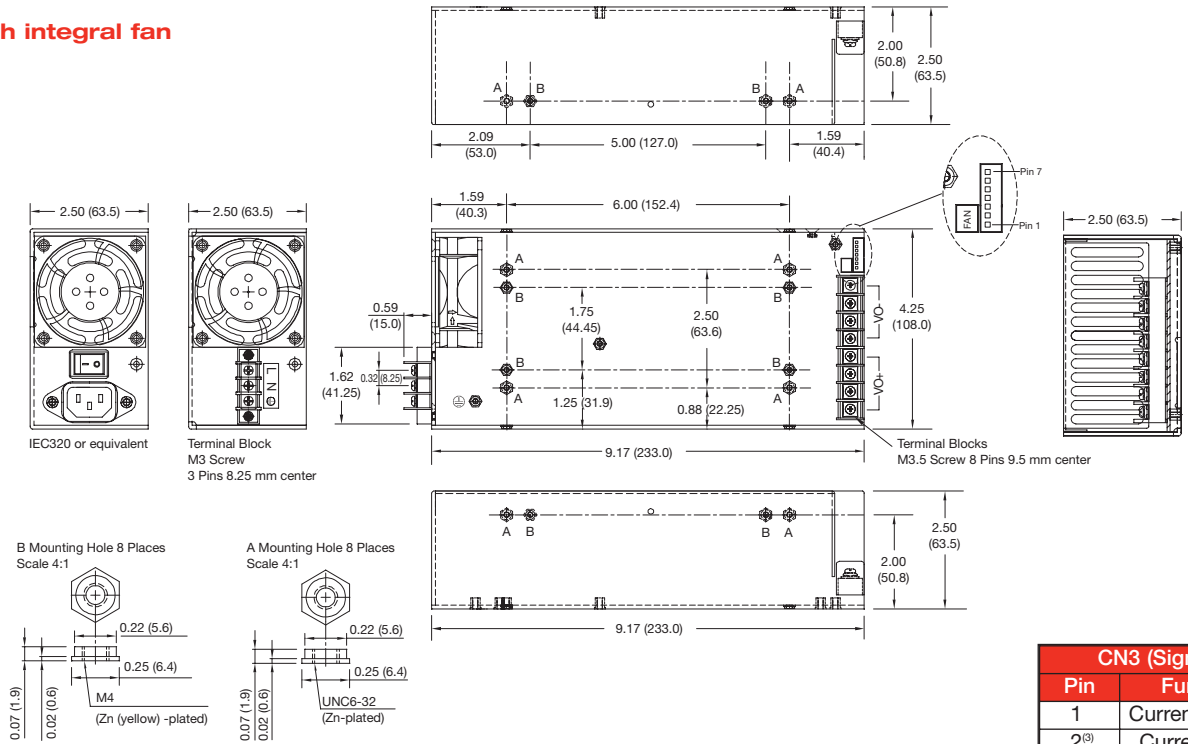


**Mechanical Details**

All dimensions are in inches (mm)

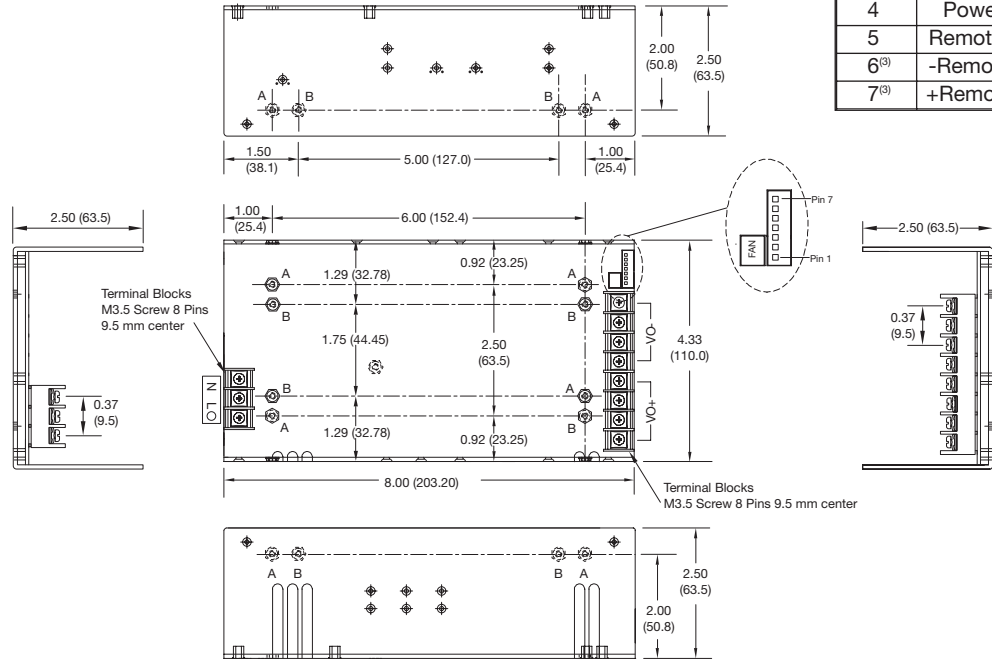
Weight: SMC - 3.30 lbs (1.5 kg) approx.  
SMD - 3.09 lbs (1.4 kg) approx.

**SMC with integral fan**



CN3 (Signals)	
Pin	Function
1	Current monitor
2 <sup>(3)</sup>	Current share
3	Return
4	Power good
5	Remote On/Off
6 <sup>(3)</sup>	-Remote sense
7 <sup>(3)</sup>	+Remote sense

**SMD U-Channel**



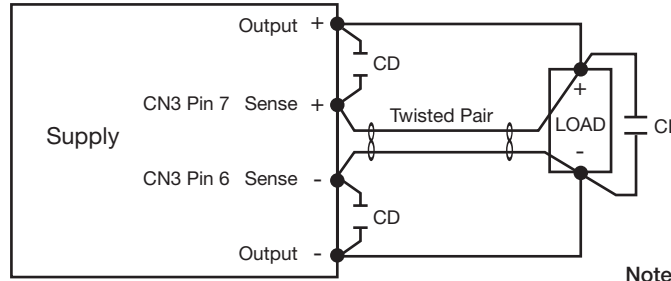
**Notes**

1. Logic connector CN3 mates with JST XHP-7 or equivalent.
2. Fan connector mates with JST XHP-2 or equivalent. Output is 12 VDC/160 mA
3. Current share only available on '-I' models, remote sense not available on '-I' models. Current share not available with constant current models.

**Options**

- Constant current limit (95-100%) add suffix '-B'
- Current share and internal oring diode add suffix '-I'
- Optional IEC320 inlet replace suffix '-C' with '-D'. Not available for SMD models.
- For U-Channel version replace 'SMC' in the part number with 'SMD' e.g. SMD600PS12 (See Derating Curve Note 1.)
- For multiple option codes please place optional codes in alphabetical order. e.g. SMC500PS12-BD.

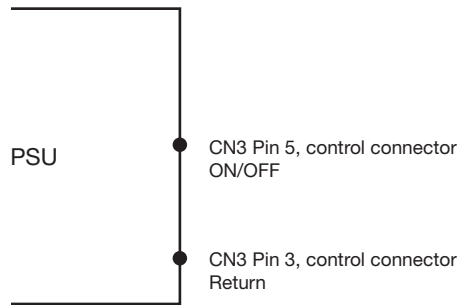
Remote Sense



Note:

1. CL is 47  $\mu$ F electrolytic capacitor.
2. CD is 0.1  $\mu$ F ceramic capacitor.

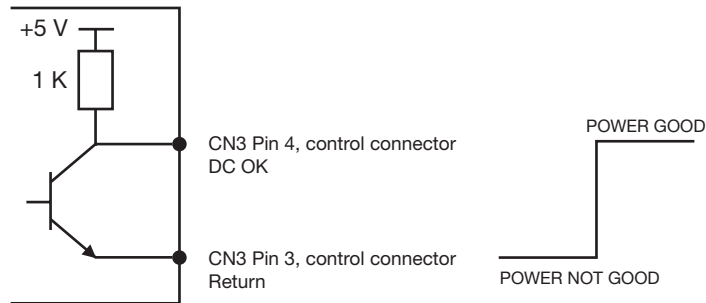
Remote On/Off



Note:

1. Applying  $<0.3$  V or short between pins 5 and 3 turns the output OFF.
2. Applying  $>4.5$  V or open circuit between pins 5 and 3 turns output ON.

Power Good



Parallel Connection with Current Share Option

