



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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350 Watts

- Rugged Industrial Construction
- -40 °C to +70 °C Operation
- Screw Terminals
- High Efficiency
- Remote On/Off
- Low Leakage Current
- Class B Emissions
- 3 Year Warranty



The SMP350 series provides a range of rugged, enclosed, 300 – 350W supplies with integral fan, screw terminal connections and a wide operating temperature range of -40 °C to +70 °C ideally suited to a wide range of industrial applications. The SMP350 series features high efficiency and class B EMI emissions for ease of integration into the end application and offers remote On/Off to simplify system control. Packaged in a 3.6" x 7" x 1.7" enclosure the series offers power densities up to 13 W/in³ providing a compact, high efficiency, low noise power solution.

Dimensions:

SMP350:
3.6 x 7.0 x 1.7" (91.4 x 177.8 x 43.1 mm)

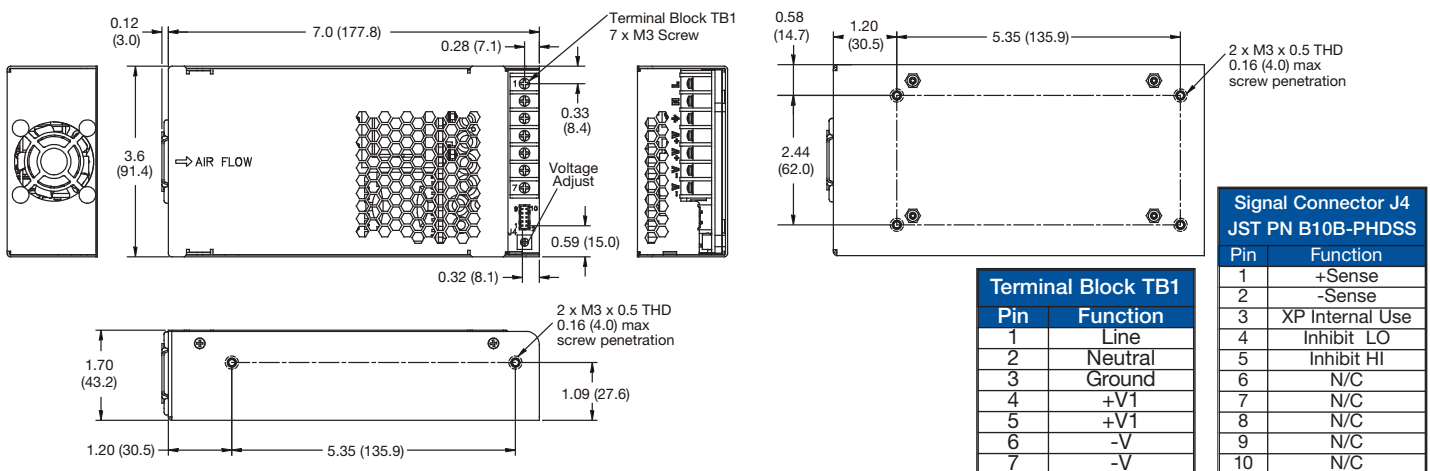
Models & Ratings

Output Voltage V1	90-180 VAC		180-264 VAC		Model Number ⁽¹⁾
	Output Current	Output Power	Output Current	Output Power	
12.0 VDC	25.00 A	300 W	25.00 A	300 W	SMP350PS12
15.0 VDC	20.70 A	310 W	22.00 A	330 W	SMP350PS15
18.0 VDC	17.80 A	320 W	19.40 A	350 W	SMP350PS18
24.0 VDC	13.75 A	330 W	14.60 A	350 W	SMP350PS24
28.0 VDC	11.80 A	330 W	12.50 A	350 W	SMP350PS28
36.0 VDC	9.20 A	330 W	9.70 A	350 W	SMP350PS36
48.0 VDC	7.30 A	350 W	7.30 A	350 W	SMP350PS48

Notes

1. For reduced leakage current versions (<300 µA) contact sales.

Mechanical Details



Notes

1. All dimensions in inches (mm).
2. Tolerance .xx = ±0.02 (0.50); .xxx = ±0.01 (0.25)
3. Weight: 1.5 lbs (0.68 kg)
4. J4 mates with JST Housing Pn. PHDR-10VS and with JST SPHD-001T-P0.5 crimp terminals.

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage	85		264	VAC	Derate below 90 VAC to 90% load at 85 VAC
Input Frequency	47		63	Hz	
Power Factor		0.9			EN6100-3-2 for class A, Class C >125 W
Input Current			4.7	A	90 VAC, 100% load
No Load Input Power		1.25/2.6		W	115 VAC/230 VAC when inhibited
Inrush Current		130		A	230 VAC, cold start 25 °C
Earth Leakage Current			500	μA	264 VAC/60 Hz. For reduced leakage current medical versions (<300 μA) contact sales.
Fuse Protection	F5.0A/250V fitted in both line and neutral				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	12		48	VDC	See Models and Ratings table
Initial Set Accuracy			±1	%	Of nominal at 50% load
Output Voltage Adjustment -V1	±2			%	
Load Regulation			1	%	
Line Regulation			±0.5	%	Of nominal, for input voltage range of 90-264 VAC
Ripple and Noise			1	%	Pk-pk with 20 MHz bandwidth, 1.5% 12 V models
Hold Up Time	10			ms	
Minimum Load					No minimum load required
Transient Response			<4	%	Deviation with a 50%-75%-50% load change. Output returns to within 1% in less than 500 μs
Overload Protection - V1	110		150	%	Trip and Restart
Overvoltage Protection - V1	115		140	%	Cycle AC to reset
Overtemperature Protection					Thermal protection fitted
Remote On/Off	<0.4 V to switch off, open cct or >4 V to switch on				
Temperature Coefficient			0.02	%/°C	After 20 minute warm up
Start Up Time			1	s	115/230 VAC, full load
Overshoot			5	%	

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	87	90	93	%	See figures 2 – 4 below
Isolation: Input to Output Input to Ground Output to Ground	4000			VAC	2 x MOPP
	1500			VAC	1 x MOPP
	1500			VAC	1 x MOPP
Switching Frequency	60		200	kHz	PFC
	90		150		Main Converter
Mean Time Between Failure		570		kHrs	MIL-HDBK-217F, notice 2, +25 °C GB
Power Density			13	W/in ³	
Weight		1.5 (0.68)		lb (kg)	

Efficiency Vs Load

Figure 2
12 V Models

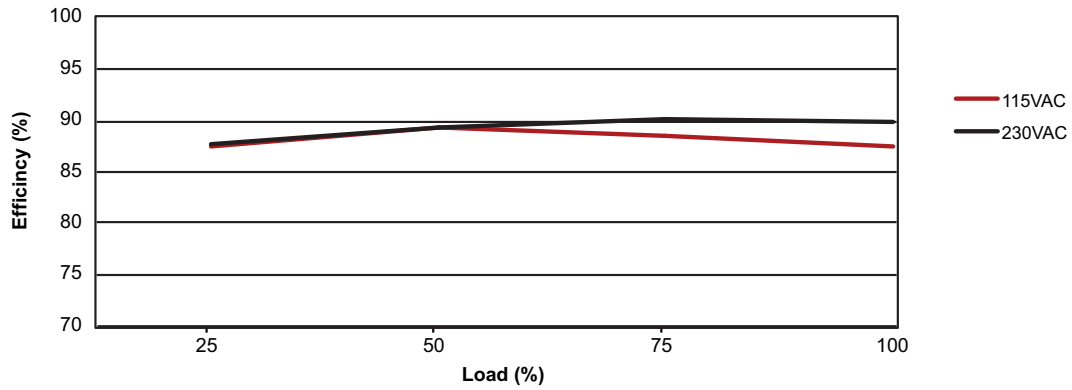


Figure 3
24 V Models

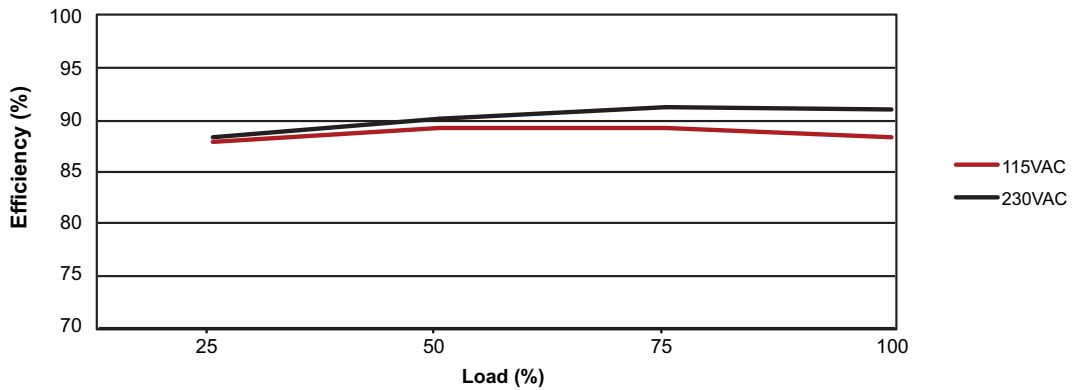
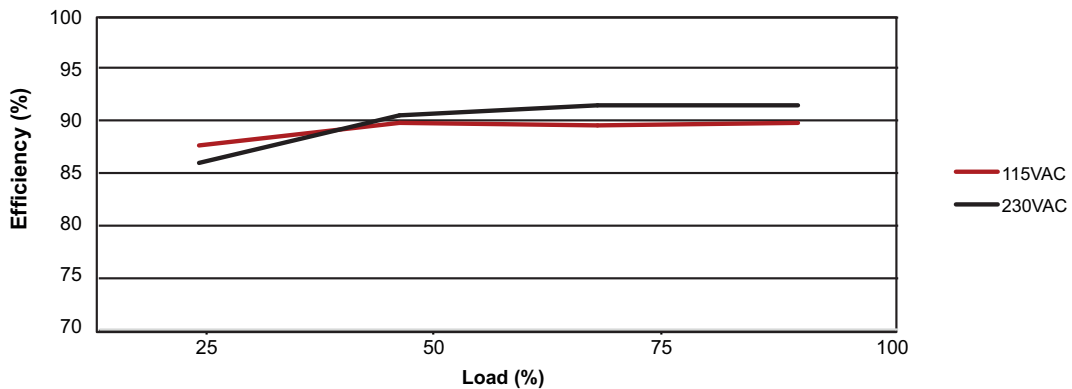


Figure 4
48 V Models

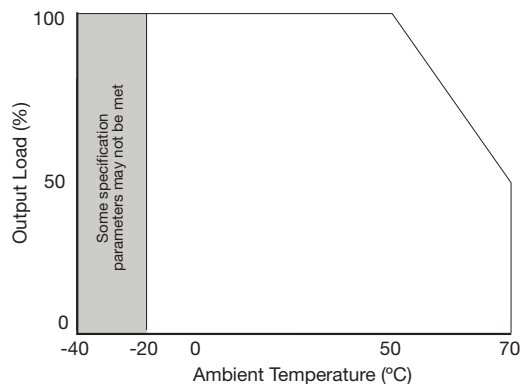


Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-40		+70	°C	Derate linearly above 50 °C to 50% of rated power at 70 °C, see fig 5
Storage Temperature	-40		+85	°C	
Operating Humidity	5		95	%	RH, non-condensing
Storage Humidity	5		95	%	RH, non-condensing
Shock	±3 x 30 g shocks in each plane, total 18 shocks. 30 g = 11 ms (±0.5 ms), half sine. Conforms to EN60068-2-27 & EN60068-2-47				
Vibration	Single axis 10-500 Hz at 2 g sweep and endurance at resonance in all 3 planes. Conforms to EN60068-2-6				

Thermal Derating Curve

Figure 5

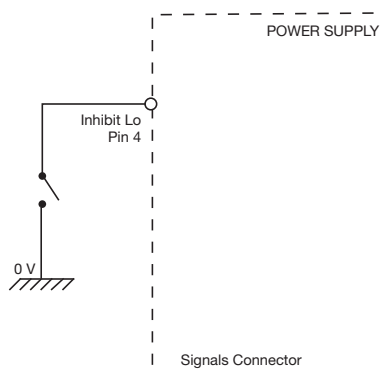


Signals & Controls

Characteristic		Notes & Conditions
Remote Sense		Compensates for 0.5 V total voltage drop
Remote On/Off	Inhibit	The inhibit lo (pin 4), should be pulled below 0.4 V to switch V1 & Vfan off. Open circuit or >4 V to switch on (see fig. 6)
	Enable	With the inhibit lo (pin 4) pulled low as detailed above, connecting inhibit hi (pin 5) to inhibit lo (pin 4) will enable V1 & V fan output. (see fig. 7)

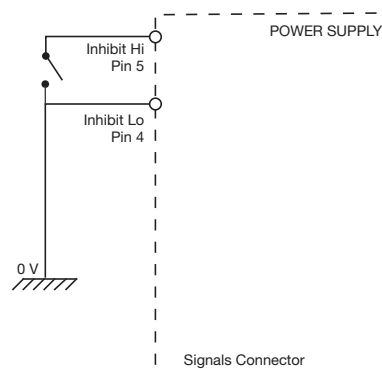
Remote On/Off (Inhibit)

Figure 6



Remote On/Off (Enable)

Figure 7



EMC: Emissions

Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
Conducted	EN55011/32	Class B		
Radiated	EN55011/32	Class A		
Harmonic Fluctuations	EN61000-3-3			

EMC: Immunity

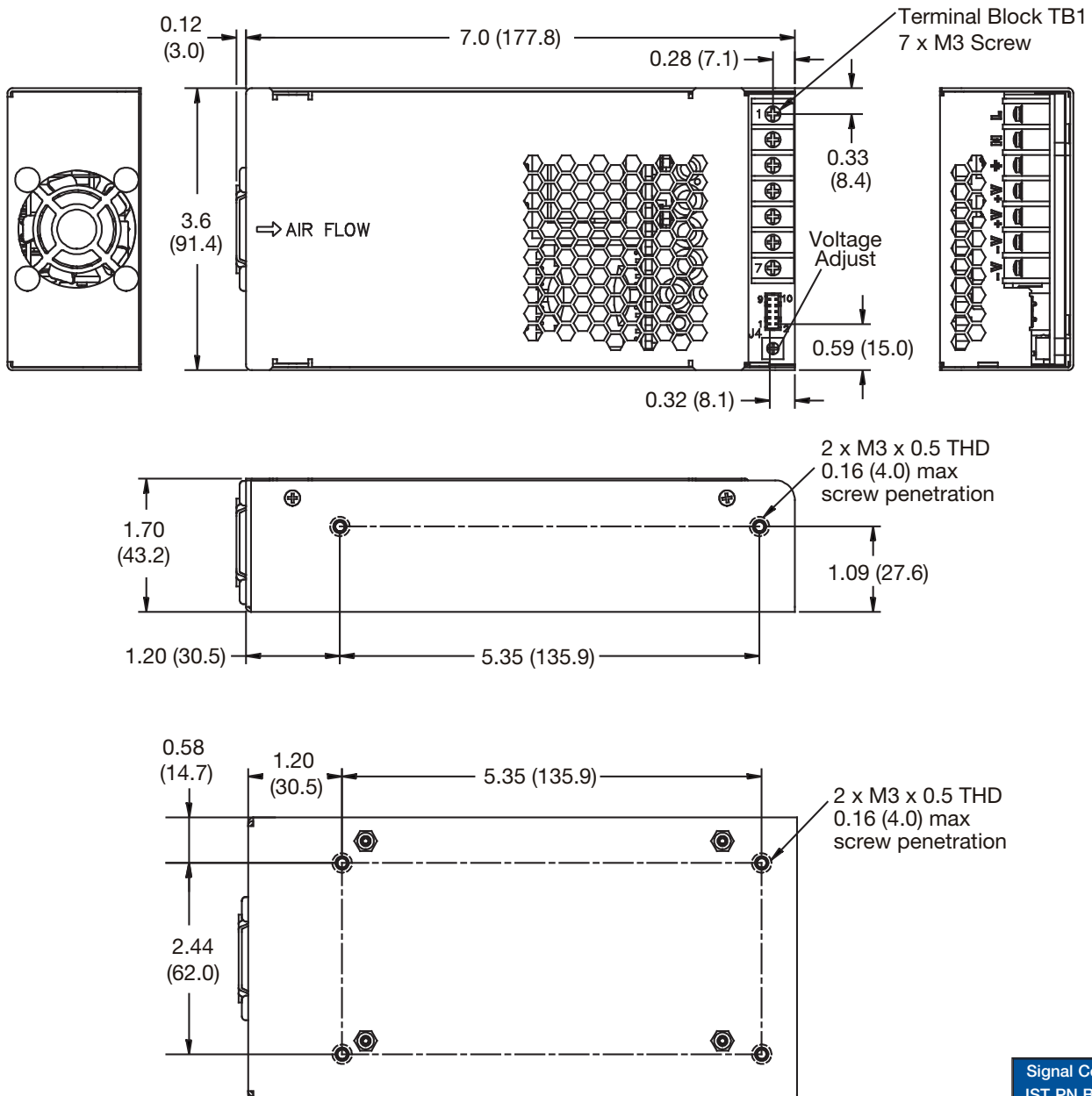
Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
Low Voltage PSU EMC	EN61204-3	High severity level	as below	
Harmonic Current	EN61000-3-3	Class A		All models
		Class C		> 125 W
Radiated	EN61000-4-3	3	A	
EFT	EN61000-4-4	3	A	
Surges	EN61000-4-5	Installation class 3	A	
Conducted	EN61000-4-6	3	A	
Dips and Interruptions	EN61000-4-11 (100 VAC)	Dip 100% (0 VAC), 8.4ms	A	
		Dip 100% (0 VAC), 16.7ms	B	
		Dip 60% (40 VAC), 200ms	B	
		Dip 30% (70 VAC), 500ms	B	
		Dip 20% (80 VAC), 5000ms	B	
		Int 100% (0 VAC), 5000ms	B	
	EN61000-4-11 (240 VAC)	Dip 100% (0 VAC), 10ms	A	
		Dip 100% (0 VAC), 20ms	B	
		Dip 60% (96 VAC), 200ms	B	
		Dip 30% (168 VAC), 500ms	B	
		Dip 20% (192 VAC), 5000ms	B	
		Int 100% (0 VAC), 5000ms	B	
	EN60601-1-2 (100 VAC)	Dip 100% (0 VAC), 10ms	A	
		Dip 60% (40 VAC), 100ms	A	Derate Power to 150 W
		Dip 30% (70 VAC), 500ms	A	
		Int 100% (0 VAC), 5000ms	B	
	EN60601-1-2 (240 VAC)	Dip 100% (0 VAC), 10ms	A	
		Dip 60% (96 VAC), 100ms	A	
		Dip 30% (168 VAC), 500ms	A	
		Int 100% (0 VAC), 5000ms	B	
	SEMI F47 (100 VAC)	Dip 33% (70 VAC), 500ms	A	

Safety Approvals

Safety Agency	Safety Standard	Notes & Conditions
CB Report	IEC60950-1:2005 Ed 2	Information Technology
	IEC62368-1 Ed 2	Information Technology
	IEC60601-1 Ed 3 Including Risk Management	Medical
UL	UL62368-1, CSA C22.2 No. 62368-1	Information Technology
	ANSI/AAMI ES60601-1:2005 & CSA C22.2, No.60601-1:08	Medical
TUV	EN62368-1	Information Technology
	EN60601-1/2006	Medical
CE	LVD & RoHS	
Equipment Protection Class	Class I	See safety agency conditions of acceptability for details

Means of Protection		Category
Primary to Secondary	2 x MOPP (Means of Patient Protection)	IEC60601-1 Ed 3
Primary to Earth	1 x MOPP (Means of Patient Protection)	
Secondary to Earth	1 x MOPP (Means of Patient Protection)	

Mechanical Details



Notes

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2. Tolerance .xx = ± 0.02 (0.50); .xxx = ± 0.01 (0.25)
3. Weight: 1.5 lbs (0.68 kg)
4. J4 mates with JST Housing Pn. PHDR-10VS and with JST SPHD-001T-P0.5 crimp terminals.

Terminal Block TB1	
Pin	Function
1	Line
2	Neutral
3	Ground
4	+V1
5	+V1
6	-V
7	-V

Signal Connector J4 JST PN B10B-PHDSS	
Pin	Function
1	+Sense
2	-Sense
3	XP Internal Use
4	Inhibit LO
5	Inhibit HI
6	N/C
7	N/C
8	N/C
9	N/C
10	N/C