

**FEATURES**

- CE Mark
- 100% Burn In
- Isolated and Regulated
- Wide Input Voltage Ranges
- Fixed Operating Switching Frequency
- Short Circuit and Over Voltage Protected
- Input and Output Filtering Integral to Supply
- UL1950, cUL950, TUV EN60950 File E155800
- 50, 66, 75, and 100 Watt Output Rating from Same Package
- Industry Standard Package (2.28" x 2.4" x 0.5") and Footprint



**DESCRIPTION**

The SP & SPW series of single output half brick DC/DC converters offers up to 100 watts of output power in an industry standard package and footprint. It is intended to provide power and isolation for pc board and chassis mount applications requiring high power density. Some features include wide input voltage ranges, positive or negative remote on/off, remote sense, output trim, short circuit protection, and over voltage protection. Being encapsulated, these supplies have improved thermal dissipation and protection for ruggedized environments. All models are 100% burned-in.

**SPECIFICATIONS: SP & SPW Series**

*All specifications apply @ 25°C ambient unless otherwise noted*

**INPUT SPECIFICATIONS**

Input Voltage Range	
SP.....	24VDC nominal input..... 18 - 36 VDC
	48VDC nominal input..... 36 - 75 VDC
SPW.....	48VDC nominal input..... 18 - 75 VDC
Input Filter .....	Pi input filter
Input Voltage Lockout .....	<16 >38VDC, <34 > 78VDC (See Note 1)
Input Reflected Ripple.....	20mA-p-p (See Note 2)
Remote ON/OFF Control (See Note 12)	
Standard.....	Active High Enable (Positive Remote ON/OFF)
"R" suffix.....	Active Low Enable (Negative Remote ON/OFF)

**OUTPUT SPECIFICATIONS**

Output Voltage .....	See table
External Output Trim (minimum).....	±10%
Voltage Tolerance.....	±1% max.
Output Current .....	See table
Output Power .....	See table
Line Regulation .....	±0.1%
Load Regulation .....	±0.1%
Minimum load.....	none required
Ripple/Noise (20MHz BW).....	1.5% Vout (See note 3)
Remote Sense .....	Up to 0.5V power line drop
Transient Response.....	±5.0% deviation, 100µ/sec recovery to within ±1.0%

**PROTECTION SPECIFICATIONS**

Short Circuit Protection.....	continuous
Over Voltage Protection .....	Approximately 120% Vout, self-resetting
Current Limiting Inception.....	Approximately 125%
Thermal Overload.....	+110°C baseplate, self-resetting

**GENERAL SPECIFICATIONS**

Efficiency .....	85% typical
Switching Frequency (fixed) .....	400kHz ±10%
Isolation Voltage	
Input to Output.....	1500VDC min.
Input to Case .....	750VDC
Output to Case.....	750VDC
Isolation Resistance (Input to Output) .....	> 100MΩ

**ENVIRONMENTAL SPECIFICATIONS**

Operating Temperature .....	-40°C to +100°C baseplate
Storage Temperature .....	-55°C to +125°C
Humidity (non-condensing).....	20% to 95% RH
Temperature Coefficient.....	0.01%/°C max

**PHYSICAL SPECIFICATIONS**

Weight .....	Approximately 4.0 oz
Dimensions.....	2.28(L) x 2.4(W) x 0.5(H) inches 57.91(L) x 60.96(W) x 12.7(H) mm
Case Material .....	non-metallic with aluminum baseplate

*Due to advances in technology, specifications subject to change without notice*

**MODEL SELECTION GUIDE**

Model Number	Input Voltage Range	Output Voltage	Output Current	Output Power
SP24S3.3-66	24 VDC (18 – 36 VDC)	3.3 VDC	20A	66W
SP24S3.3-75		3.3 VDC	22.7A	75W
SP24S5-50		5 VDC	10A	50W
SP24S5-75		5 VDC	15A	75W
SP24S5-100		5 VDC	20A	100W
SP24S12-50		12 VDC	4.16A	50W
SP24S12-75		12 VDC	6.25A	75W
SP24S12-100		12 VDC	8.33A	100W
SP24S15-50		15 VDC	3.33A	50W
SP24S15-75		15 VDC	5A	75W
SP24S15-100		15 VDC	6.66A	100W
SP24S24-50		24 VDC	2.08A	50W
SP24S24-75		24 VDC	3.12A	75W
SP24S24-100		24 VDC	4.17A	100W
SP24S48-50		48 VDC	1.04A	50W
SP24S48-75		48 VDC	1.56A	75W
SP24S48-100		48 VDC	2.08A	100W
SP48S3.3-66		48 VDC (36 – 75 VDC)	3.3 VDC	20A
SP48S3.3-75	3.3 VDC		22.7A	75W
SP48S5-50	5 VDC		10A	50W
SP48S5-75	5 VDC		15A	75W
SP48S5-100	5 VDC		20A	100W
SP48S6-50	6 VDC		8.33A	50W
SP48S6-75	6 VDC		12.5A	75W
SP48S6-100	6 VDC		16.67A	100W
SP48S12-50	12 VDC		4.16A	50W
SP48S12-75	12 VDC		6.25A	75W
SP48S12-100	12 VDC		8.33A	100W
SP48S15-50	15 VDC		3.33A	50W
SP48S15-75	15 VDC		5A	75W
SP48S15-100	15 VDC		6.66A	100W
SP48S24-50	24 VDC		2.08A	50W
SP48S24-75	24 VDC		3.12A	75W
SP48S24-100	24 VDC		4.17A	100W
SP48S28-100	28 VDC		3.57A	100W
SP48S48-50	48 VDC	1.04A	50W	
SP48S48-75	48 VDC	1.56A	75W	
SP48S48-100	48 VDC	2.08A	100W	
SPW48S3.3-66	48 VDC (18 – 75 VDC)	3.3 VDC	20A	66W
SPW48S3.3-75		3.3 VDC	22.7A	75W
SPW48S5-50		5 VDC	10A	50W
SPW48S5-75		5 VDC	15A	75W
SPW48S5-100		5 VDC	20A	100W
SPW48S9-50		9 VDC	5.56A	50W
SPW48S12-50		12 VDC	4.16A	50W
SPW48S12-75		12 VDC	6.25A	75W
SPW48S12-100		12 VDC	8.33A	100W
SPW48S15-50		15 VDC	3.33A	50W
SPW48S15-75		15 VDC	5A	75W
SPW48S15-100		15 VDC	6.67A	100W
SPW48S24-50		24 VDC	2.08A	50W
SPW48S24-75		24 VDC	3.12A	75W
SPW48S24-100		24 VDC	4.16A	100W
SPW48S28-100		28 VDC	3.57A	100W
SPW48S48-50 <sup>(10)</sup>		48 VDC	1.04A	50W

**NOTES**

1. Auto off power train protection.
2. For input reflected ripple of 20mA p-p, use an industry standard 12uH source impedance with a low ESR aluminum 33uf capacitor across input.
3. Ripple & Noise is measured with a 10uf // 0.1uf across output.
4. All case, pin to case, and pin to header dimensions reference only unless otherwise noted.
5. Pin diameters are 0.04" except: those used for +Vout and -Vout are 0.08". Pin length is 0.20" min.
6. Pin to pin tolerance  $\pm 0.01"$ . Pin diameter tolerance  $\pm 0.005"$ .
7. Significant capacitive load on output may inhibit start-up and operation, consult factory.
8. All DC/DC converters should be externally fused on the front end for protection.
9. Heatsinks available, consult factory.
10. 48VDC input with 48VDC output not available in 75 and 100 watt models.
11. Through-hole instead of threaded inserts available (0.125" diameter), add suffix "TH"
12. Positive Remote ON/OFF control is standard. To order negative logic Remote ON/OFF control add the suffix "R" to the part number (Ex: SP48S48-100R).

**MECHANICAL DRAWING**

Unit: inches

(BOTTOM VIEW)

