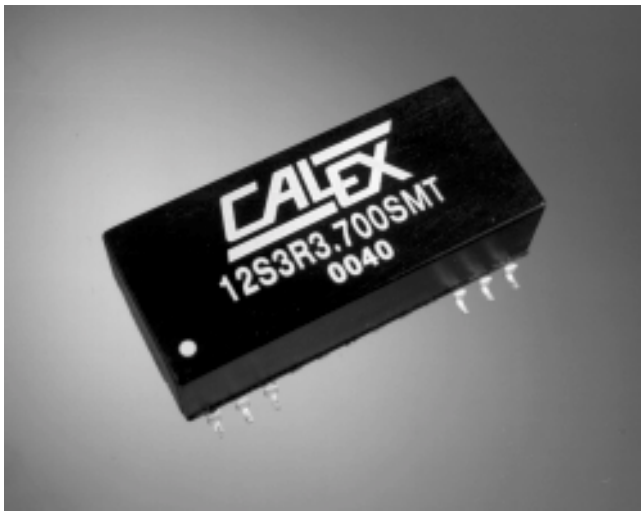
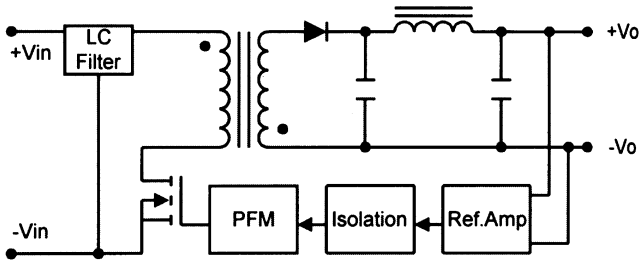
3 Watt SMT Single Series DC/DC Converters



Features

- SMT Technology
- 2:1 Input Range
- High Efficiency up to 83%
- I/O Isolation 1500VDC
- Short Circuit Protected
- CECC00802 Reflow
- MTBF > 1,000,000 Hours



Selection Chart					
Model	Input Range VDC		Output		
	Min	Max	VDC	mA	Power W
12S3R3.700SMT	9	18	3.3	700	3
12S5.600SMT	9	18	5	600	3
12S12.250SMT	9	18	12	250	3
12S15.200SMT	9	18	15	200	3
24S3R3.700SMT	18	36	3.3	700	3
24S5.600SMT	18	36	5	600	3
24S12.250SMT	18	36	12	250	3
24S15.200SMT	18	36	15	200	3
48S3R3.700SMT	36	75	3.3	700	3
48S5.600SMT	36	75	5	600	3
48S12.250SMT	36	75	12	250	3
48S15.200SMT	36	75	15	200	3

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Input Parameters						
Model		**12S3R3.700SMT**	**12S5.600SMT**	**12S12.250SMT**	**12S15.200SMT**	**Units**
Voltage Range	MIN TYP MAX	9.0 12.0 18.0				VDC
Input Current No Load Full Load	TYP TYP	20 257	20 316	20 305	20 305	mA
Reflected Ripple	TYP	25				mA
Under Voltage Shutdown	MAX	8				VDC
Reverse Polarity Input Current	MAX	0.5				A
Short Circuit Input Power	MAX	1500				mW
Input Filter		Pi Filter				
Efficiency	TYP	75	79	82	82	%
Switching Frequency	TYP	300				kHz
Input Surge Voltage (1000 ms)	MIN MAX	-0.7 25				VDC
Internal Power Dissipation	MAX	2500				mW
Recommended Fuse		750 mA Slow Blow Type				mA
Model		**24S3R3.700SMT**	**24S5.600SMT**	**24S12.250SMT**	**24S15.200SMT**	**Units**
Voltage Range	MIN TYP MAX	18.0 24.0 36.0				VDC
Input Current No Load Full Load	TYP TYP	5 127	5 156	5 151	5 151	mA
Reflected Ripple	TYP	15				mA
Under Voltage Shutdown	MAX	16				VDC
Reverse Polarity Input Current	MAX	0.5				A
Short Circuit Input Power	MAX	1500				mW
Input Filter		Pi Filter				
Efficiency	TYP	76	80	83	83	%
Switching Frequency	TYP	300				kHz
Input Surge Voltage (1000 ms)	MIN MAX	-0.7 50				VDC
Internal Power Dissipation	MAX	2500				mW
Recommended Fuse		350 mA Slow Blow Type				mA
Model		**48S3R3.700SMT**	**48S5.600SMT**	**48S12.250SMT**	**48S15.200SMT**	**Units**
Voltage Range	MIN TYP MAX	36.0 48.0 75.0				VDC
Input Current No Load Full Load	TYP TYP	3 63	3 78	3 75	3 75	mA
Reflected Ripple	TYP	10				mA
Under Voltage Shutdown	MAX	32				VDC
Reverse Polarity Input Current	MAX	0.5				A
Short Circuit Input Power	MAX	1500				mW
Input FIlter		Pi Filter				
Efficiency	TYP	76	80	83	83	%
Switching Frequency	TYP	300				kHz
Input Surge Voltage (1000 ms)	MIN MAX	-0.7 100				VDC
Internal Power Dissipation	MAX	2500				mW
Recommended Fuse		200 mA Slow Blow Type				mA

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Output Parameters						
Model		**12S3R3.700SMT 24S3R3.700SMT 48S3R3.700SMT**	**12S5.600SMT 24S5.600SMT 48S5.600SMT**	**12S12.250SMT 24S12.250SMT 48S12.250SMT**	**12S15.200SMT 24S15.200SMT 48S15.200SMT**	**Units**
Output Voltage		3.3	5	12	15	VDC
Output Current	MIN MAX	70 700	60 600	25 250	20 200	mA
Output Voltage Accuracy	TYP MAX	±0.5 ±1.0				%
Load Regulation, Io=10% to 100%	TYP MAX	±0.3 ±1.0				%
Line Regulation, Vin=Min. to Max.	TYP MAX	±0.1 ±0.3				%
Ripple & Noise (20MHz)	TYP MAX	50 75				mV P-P
Ripple & Noise (20MHz), Over Line, Load & Temp	MAX	100				mV P-P
Ripple & Noise (20MHz)	MAX	10				mV RMS
Over Load	MIN	120				%
Transient Recovery Time, 25% Load Step Change	TYP MAX	200 500				µs
Transient Response Deviation, 25 % Load Step Change	TYP MAX	±2 ±6				%
Temperature Coefficient	TYP MAX	±0.01 ±0.02				%/°C
Short Circuit		Continuous				

NOTES

(1) Specifications typical at Ta=+25°C, resistive load, nominal input voltage, full rated output current unless otherwise noted.

(2) Transient recovery time is measured to within 1% error band for a step change in output load 75% to 100%

(3) When measuring output ripple & noise, an external 0.1µF ceramic capacitor is recommended to be placed from +Vout to -Vout.

(4) Specifications subject to change without notice.

General Specifications			
All Models			**Units**
Isolation			
Isolation Voltage, 60 Seconds	MIN	1500	VDC
Isolation Resistance, 500 VDC	TYP	1000	Mohms
Isolation Capacitance, 100kHz, 1V	TYP MAX	65 100	pF
Environmental			
Operating Temperature	MIN MAX	-40 +71	°C
Storage Temperature	MIN MAX	-40 +125	°C
Humidity	MAX	95	%
Cooling		Free-Air Convection	
General			
Case Size		1.27 x 0.74 x 0.4 inches 32.3 x 18.8 x 10.2mm	
Case Material		Non-Conductive Black Plastic	
Weight		10g	

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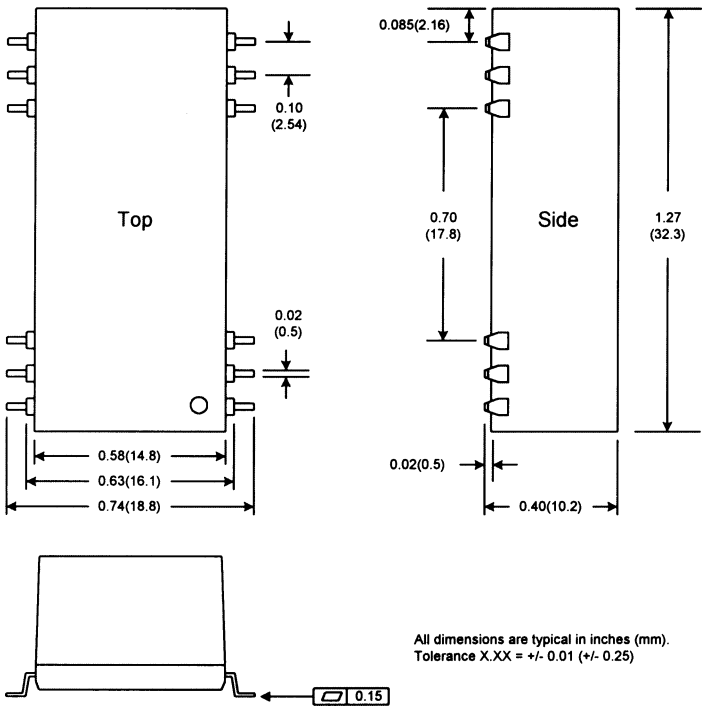
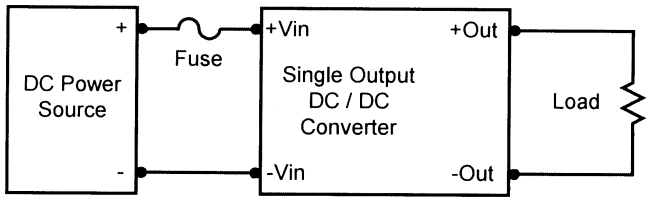
Mechanical Configuration



Pin	Function
1, 2	-INPUT
3, 10, 11, 12, 14, 22	NC
13	+OUTPUT
15	-OUTPUT
23, 24	+INPUT

NC: No Connection

Typical Application



Solder Reflow Profile

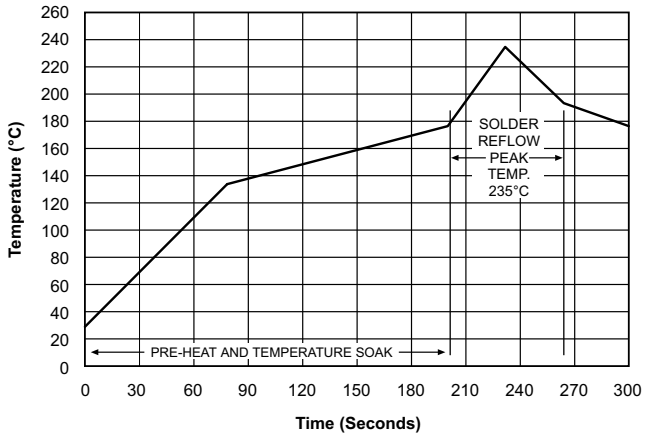
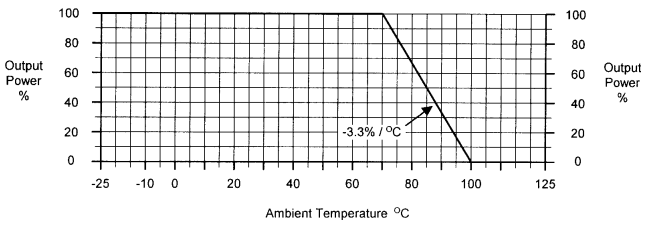


Figure 1.

The profile in Figure 1 should be used as a starting point for your own experiments. Obviously your optimal profile will be a function of many factors including, type of paste, paste thickness, board thickness, number of conductive layers, copper weight, the density of surrounding components, etc. It is recommended that the peak temperature should not exceed +235°C for an extended period of time.

Derating Curve



Connecting Pin Patterns