

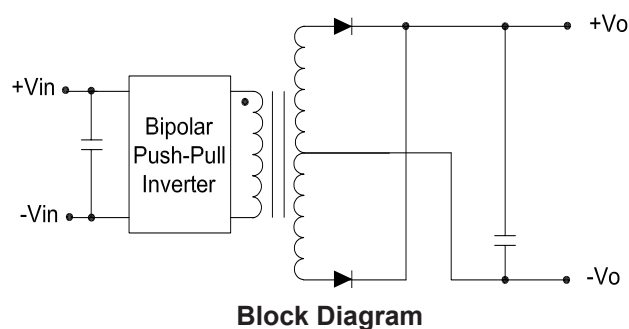
1 WATT SMT SINGLE DC/DC CONVERTERS



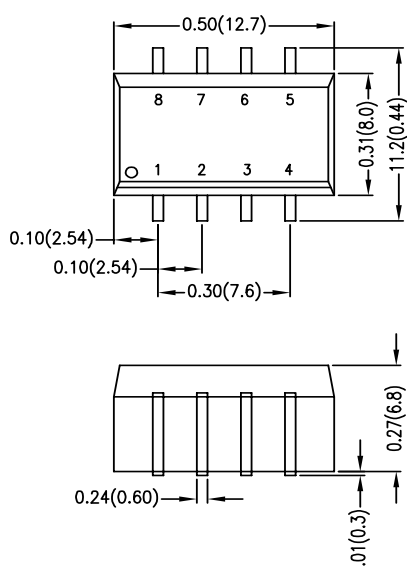
Features

- Lead Frame Technology
- Wide Temperature Performance
- I/O Isolation 1000VDC
- Efficiency Up to 82%
- MTBF > 2,000,000 Hours
- RoHS Compliant
- MSL3 (Moisture Sensitivity Level) per IPC/JEDEC J-STD-020D

Selection Chart					
Model	Input Range		Output		
	Min	Max	VDC	mA	Power W
5S5.200SMT	4.5	5.5	5	200	1
5S9.110SMT	4.5	5.5	9	110	1
5S12.084SMT	4.5	5.5	12	84	1
5S15.067SMT	4.5	5.5	15	67	1
12S5.200SMT	10.8	13.2	5	200	1
12S9.110SMT	10.8	13.2	9	110	1
12S12.084SMT	10.8	13.2	12	84	1
12S15.067SMT	10.8	13.2	15	67	1

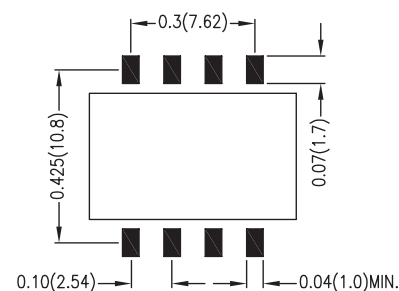
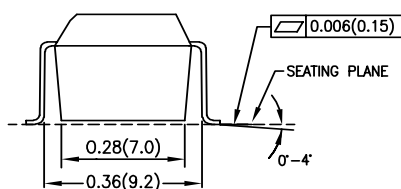


Case Mechanical Dimensions inches (mm)



Pin	Name
1	-Vin
2	+Vin
3	NC
4	-Vout
5	+Vout
6	NC
7	NC
8	NC

TOLERANCE: ALL DIMENSIONS ARE TYPICAL IN INCHES (mm) UNLESS OTHERWISE NOTED:	
X.X	±0.01 (0.25)
X.XX	±0.005 (0.13)
PINS	±0.002 (0.05)



Connecting Pin Pattern
 Dimensions are mm (±0.05)



2401 Stanwell Drive, Concord Ca. 94520

Ph: 925-687-4411

Fax: 925-687-3333

www.calex.com

Email: sales@calex.com

ECO# 041112-4, 080213-1, 131114-3

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Input Parameters							
Model		5S5.200SMT	5S9.110SMT	5S12.084SMT	5S15.067SMT	Units	
Voltage Range		MIN	4.5				VDC
		TYP	5.0				
		MAX	5.5				
Input Current	No Load Full Load	TYP TYP	30 250	30 254	30 252	30 248	mA
Reverse Polarity Input Current		MAX	0.3				A
Input Filter			Internal Capacitor				
Efficiency		TYP	80	78	80	81	%
Switching Frequency		MIN TYP MAX	50 100 140				kHz
Input Surge Voltage (1000 ms)		MIN MAX	-0.7 9				VDC
Internal Power Dissipation		MAX	450				mW
Recommended Fuse			500 mA Slow Blow Type				mA

		Input Parameters					
Model		12S5.200SMT	12S9.110SMT	12S12.084SMT	12S15.067SMT	Units	
Voltage Range	MIN TYP MAX	10.8 12.0 13.2				VDC	
Input Current	No Load Full Load	TYP TYP	15 103	15 106	15 104	15 102	mA
Reverse Polarity Input Currrent		MAX	0.3				A
Input Filter			Internal Capacitor				
Efficiency		TYP	81	78	81	82	%
Switching Frequency	MIN TYP MAX	50 100 140				kHz	
Input Surge Voltage (1000 ms)	MIN MAX	-0.7 18				VDC	
Internal Power Dissipation		MAX	450				mW
Recommended Fuse		200 mA Slow - Blow Type				mA	

Output Parameters										
Models		5S5.200SMT 12S5.200SMT		5S9.110SMT 12S9.110SMT		5S12.084SMT 12S12.084SMT		5S15.067SMT 12S15.037SMT		Units
Output Voltage		5		9		12		15		VDC
Output Current	MIN MAX	4 200		2 110		1.5 84		1 67		mA
Output Voltage Accuracy	TYP MAX	±1.0 ±3.0								%
Load Regulation Io = 20% to 100%	MAX	10	8	10	8	8	5	7	5	%
Line Regulation for Vin change 1%	TYP MAX	±1.2 ±1.5								%
Ripple & Noise (20MHz)	TYP MAX	60 120								mV P-P
Ripple & Noise (20MHz) Over Line, Load & Temp	MAX	150								mV P-P
Ripple & Noise (20MHz)	MAX	15								mV RMS
Over Load	MAX	120								%
Temperature Coefficient	TYP MAX	±0.01 ±0.02								% / °C
Short Circuit Protection		0.5 Second								



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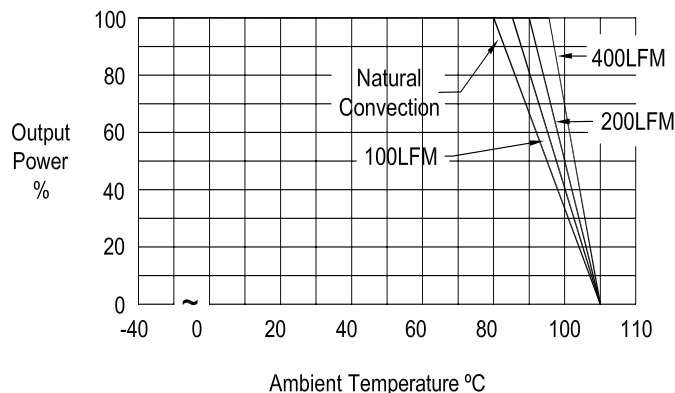
General Specifications			
All Models			Units
Isolation			
Isolation Voltage, 60 seconds	MIN	1000	VDC
Isolation Resistance, 500VDC	MIN	1000	Mohms
Isolation Capacitance, 100kHz, 1V	TYP MAX	40 100	pF
Environmental			
MTBF (Calculated), MIL-HDBK-217F @ 25°C, Ground Benign	>2,000,000		h
Operating Temperature	MIN MAX	-40 +85	°C
Storage Temperature	MIN MAX	-40 +125	°C
Humidity	MAX	95	%
Cooling		Free-Air Convection	
General			
Case Size		0.50 x 0.31 x 0.27 inches 12.7 x 8.0 x 6.8 mm	
Case Material		Non Conductive Black Plastic	
Weight		1.5g	

Notes:

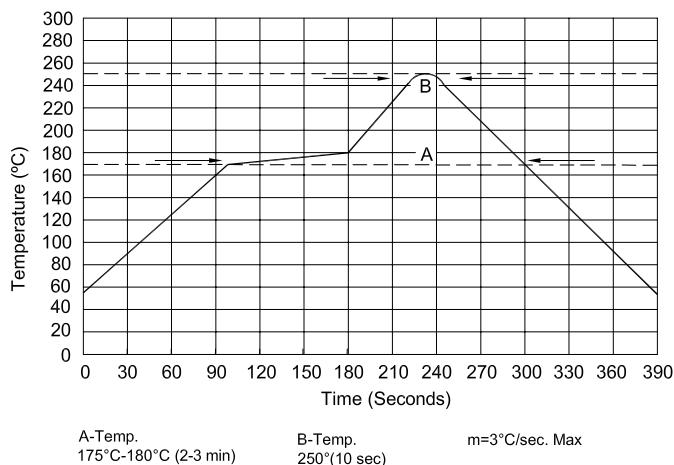
- (1) Specifications typical at Ta=+25°C, resistive load, nominal input voltage, rated output current unless otherwise noted.
- (2) Specifications subject to change without notice.
- (3) Water Washability - Calex DC/DC converters are designed to withstand most solder/wash processes. Careful attention should be used when assessing the applicability in your specific manufacturing process. Converters are not hermetically sealed.
- (4) RoHS Compliance means conformity to EU Directive 2002/95/EC of 27 January 2003, on the restriction of the use of certain hazardous substances in electrical and electronic equipment, lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyls, and polybrominated diphenyl ethers are not present in quantities exceeding the following maximum concentrations in any homogeneous material, except for applicable exemptions. 0.1% (by weight of homogeneous material) lead, mercury, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers, or 0.01% (by weight of homogeneous material) cadmium. The RoHS marking is as follows.



Derating Curve

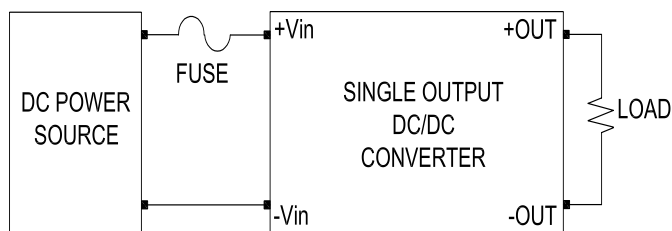


Solder Reflow Profile



The Solder Reflow Profile should be used as a starting point for your own experiments. 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 +245°C for an extended period of time.

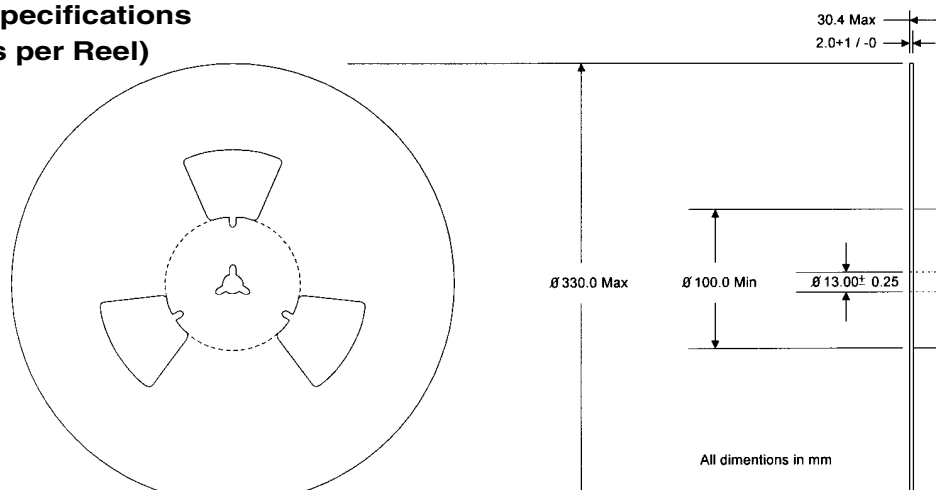
Typical Application



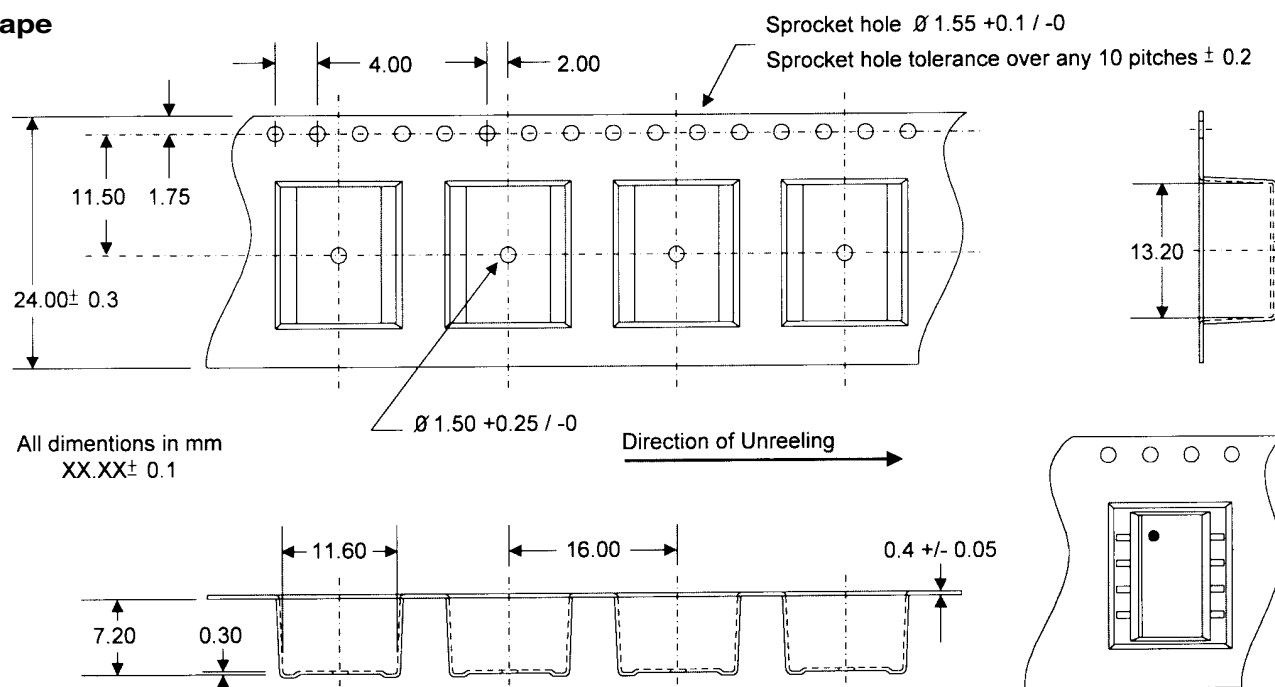
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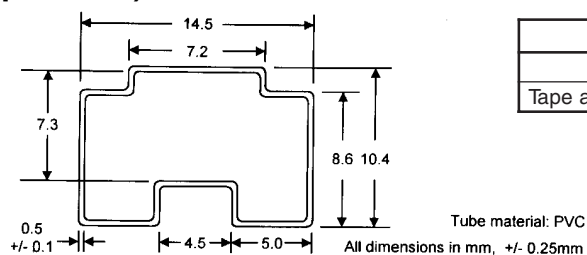
Packaging Specifications Reel (500pcs per Reel)



Tape



Tube (25pcs per Tube)



Packaging Details

Packaging Style	Quantity
Tube	25
Tape and Reel to IEC 286-3 Specifications	500



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