

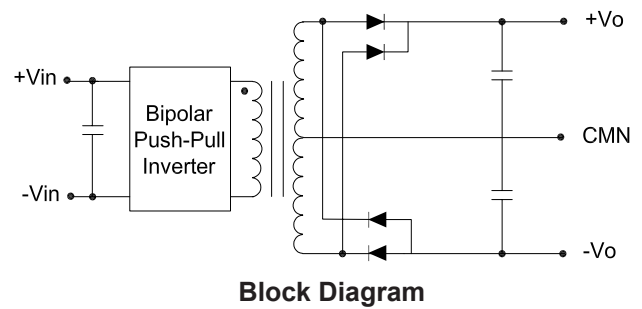
# 1 WATT SMT DUAL DC/DC CONVERTERS



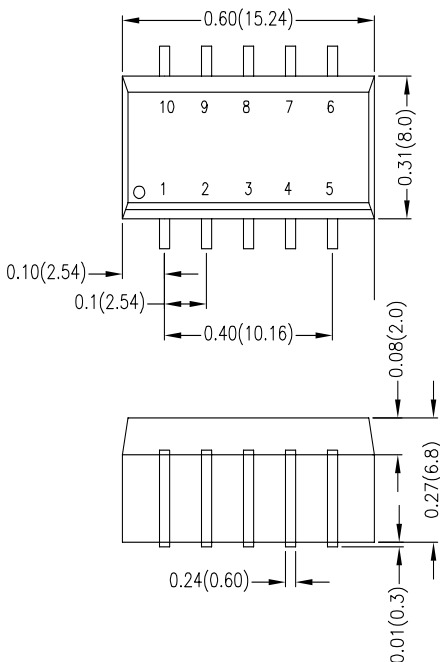
## Features

- 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
5D5.100SMT	4.5	5.5	±5	±100	1
5D9.055SMT	4.5	5.5	±9	±55	1
5D12.042SMT	4.5	5.5	±12	±42	1
5D15.033SMT	4.5	5.5	±15	±33	1
12D5.100SMT	10.8	13.2	±5	±100	1
12D9.055SMT	10.8	13.2	±9	±55	1
12D12.042SMT	10.8	13.2	±12	±42	1
12D15.033SMT	10.8	13.2	±15	±33	1

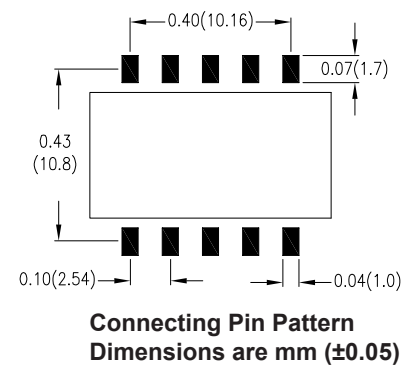
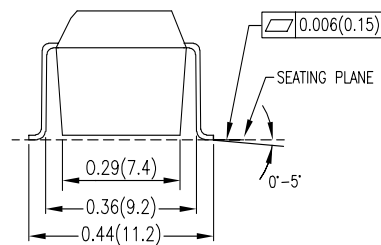


## Case Mechanical Dimensions inches (mm)



Pin	Name
1	-Vin
2	+Vin
3	NC
4	CMN
5	-Vout
6	NC
7	+Vout
8	NC
9	NC
10	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)



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Input Parameters						
Model		5D5.100SMT	5D9.055SMT	5D12.042SMT	5D15.033SMT	Units
Voltage Range	MIN TYP MAX	4.5 5.0 5.5				VDC
Input Current	No Load Full Load TYP TYP	30 267	30 260	30 255	30 251	mA
Reverse Polarity Input Current	MAX	0.3				A
Input Filter		Internal Capacitor				
Efficiency	TYP	75	76	79	79	%
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		12D5.100SMT	12D9.055SMT	12D12.042SMT	12D15.033SMT	Units
Voltage Range	MIN TYP MAX	10.8 12.0 13.2				VDC
Input Current	No Load Full Load TYP TYP	15 111	15 109	15 105	15 103	mA
Reverse Polarity Input Current	MAX	0.3				A
Input Filter		Internal Capacitor				
Efficiency	TYP	75	76	80	80	%
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		5D5.100SMT 12D5.100SMT		5D9.055SMT 12D9.055SMT		5D12.042SMT 12D12.042SMT		5D15.033SMT 12D15.033SMT		Units	
Output Voltage		±5		±9		±12		±15		VDC	
Output Current	MIN MAX	±2 ±100		±1 ±55		±0.8 ±42		±0.7 ±33		mA	
Output Voltage Accuracy	TYP MAX	±1.0 ±3.0									%
Output Balance, Dual Output Balance Load	TYP MAX	±0.1 ±1.0									%
Load Regulation I <sub>o</sub> = 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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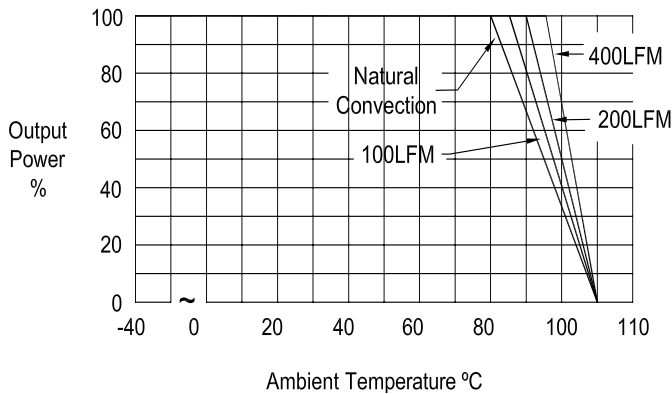
General Specifications			
All Models			Units
<b>Isolation</b>			
Isolation Voltage, 60 seconds	MIN	1000	VDC
Isolation Resistance, 500VDC	MIN	1000	Mohms
Isolation Capacitance, 100kHz, 1V	TYP MAX	40 100	pF
<b>Environmental</b>			
MTBF (Calculated), MIL-HDBK-217F @ 25°C, Ground Benign		>2,000,000	h
Operating Temperature	MIN MAX	-40 +85	°C
Storage Temperature	MIN MAX	-40 +125	°C
Humidity	MAX	95	%
Cooling	Free-Air Convection		
<b>General</b>			
Case Size	0.60 x 0.31 x 0.27 inches 15.24 x 8.0 x 6.8 mm		
Case Material	Non Conductive Black Plastic		
Weight	1.8g		

## Notes:

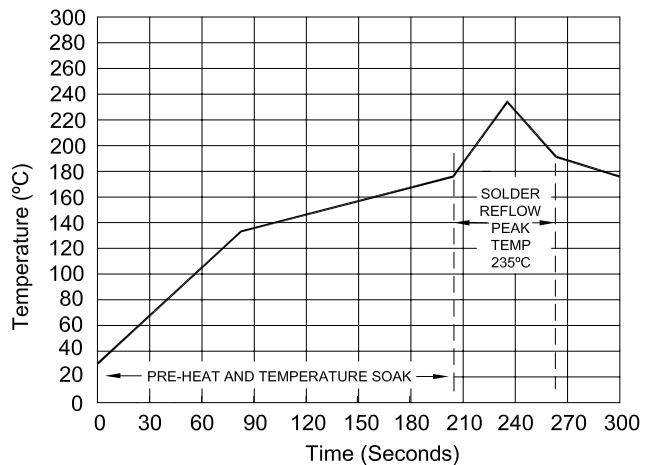
- (1) Specifications typical at Ta=+25°C, resistive load, nominal input voltage, rated output current unless otherwise noted.
- (2) Specifications subject to change without notice.
- (3) Water Washability - Calex DC/DC converters are designed to withstand most solder/wash processes. Careful attention 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

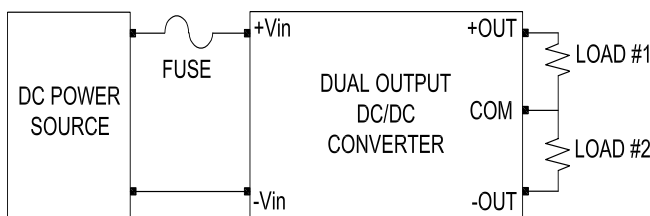


## Solder Reflow Profile



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 +235°C for an extended period of time.

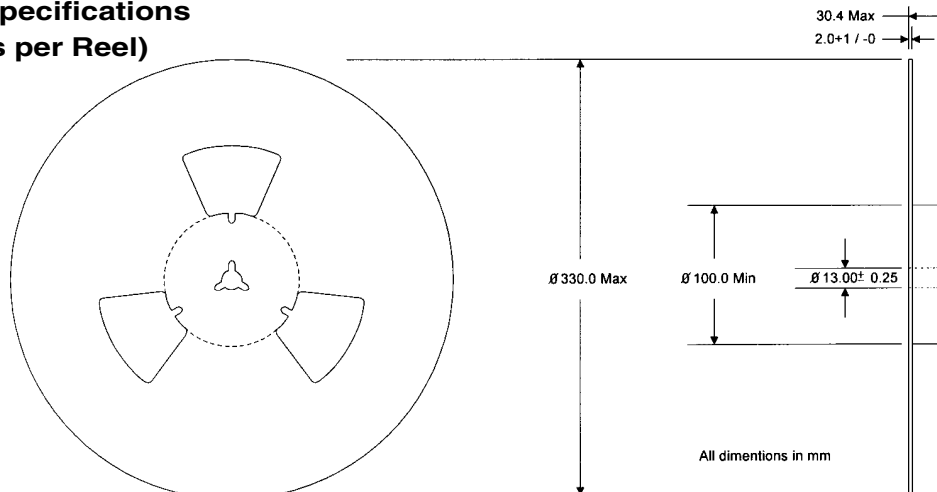
## Typical Application



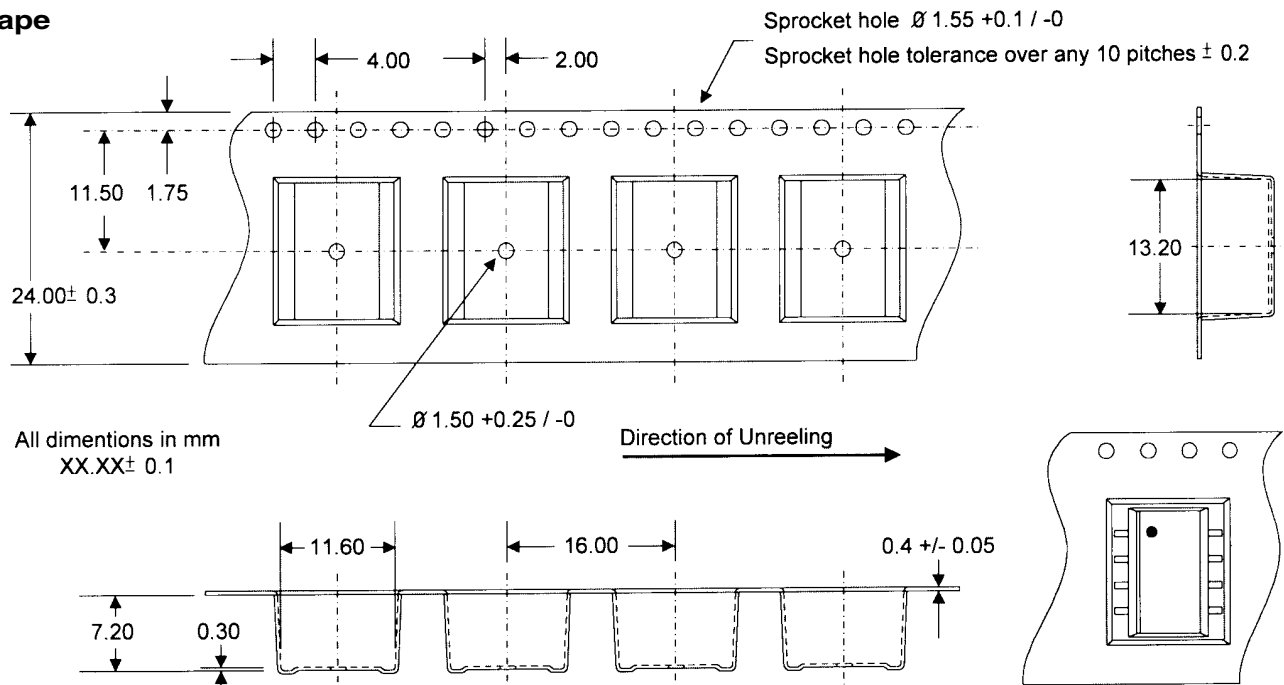
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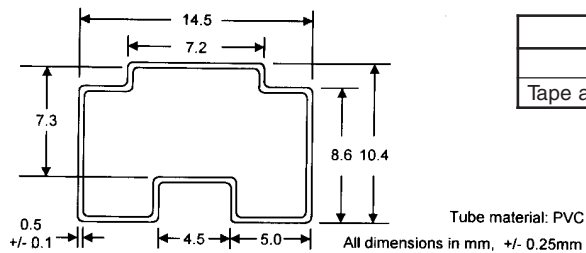
## Packaging Specifications Reel (500pcs per Reel)



## Tape



## Tube (25pcs per Tube)



## Packaging Details

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

