

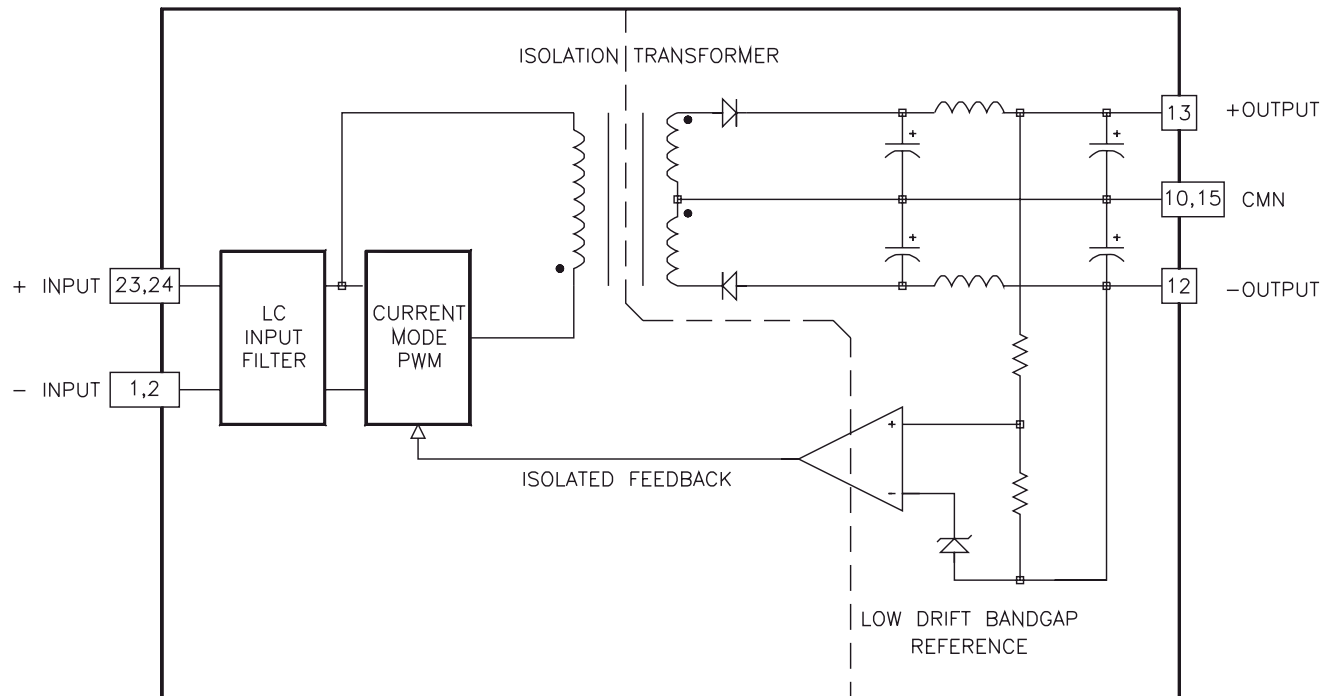
3 Watt SML Dual Series DC/DC Converters



Features

- SMT Technology
- 2:1 Input Range
- High Efficiency up to 83%
- I/O Isolation 1500VDC
- Short Circuit Protected

Selection Chart					
Model	Input Range VDC		Output		
	Min	Max	VDC	mA	Power W
12D5.300SML	9	18	±5	±300	3
12D12.125SML	9	18	±12	±125	3
12D15.100SML	9	18	±15	±100	3
24D5.300SML	18	36	±5	±300	3
24D12.125SML	18	36	±12	±125	3
24D15.100SML	18	36	±15	±100	3
48D5.300SML	36	75	±5	±300	3
48D12.125SML	36	75	±12	±125	3
48D15.100SML	36	75	±15	±100	3



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Input Parameters								
Model		12D5.300SML	12D12.125SML	12D15.100SML	24D5.300SML	24D12.125SML	24D15.100SML	Units
Voltage Range	MIN	9.0 (6) 12.0 18.0			18.0 24.0 36.0			VDC
	TYP							
	MAX							
Input Current	No Load	TYP	20	20	20	5	5	mA
	Full Load	TYP	321	309	309	158	152	
Input Filter		Pi Filter						
Efficiency	TYP	78	81	81	79	82	82	%
Switching Frequency	TYP	300						kHz
Recommended Fuse		(7)						mA
Input Parameters								
Model		48D5.300SML		48D12.125SML		48D15.100SML		Units
Voltage Range	MIN	36.0 48.0 75.0						VDC
	TYP							
	MAX							
Input Current	No Load	TYP	3	3	3	3	mA	
	Full Load	TYP	79	76	76	76		
Input Filter		Pi Filter						
Efficiency	TYP	79		82		82		%
Switching Frequency	TYP	300						kHz
Recommended Fuse		(7)						mA

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Output Parameters					
Model		12D5.300SML 24D5.300SML 48D5.300SML	12D12.125SML 24D12.125SML 48D12.125SML	12D15.100SML 24D15.100SML 48D15.100SML	Units
Output Voltage		±5	±12	±15	VDC
Output Current (5)	MIN MAX	±30 ±300	±12.5 ±125	±10 ±100	mA
Output Voltage Accuracy	TYP MAX	±1.0 ±2.5			%
Output Voltage Balance, Dual Output Balance Load	TYP MAX	±0.5 ±1.5			%
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) (3)	TYP MAX	50 100			mV P-P
Fundamental Ripple	MAX	15			mV P-P
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, Auto Restart			

NOTES

- (1) Specifications typical at Ta=+25°C, resistive load, nominal input voltage, rated output current unless otherwise noted.
- (2) Transient recovery time is measured to within 1% error band for a step change in output load 50% to 75%
- (3) When measuring output ripple & noise, an external 0.1µF ceramic capacitor is recommended to be placed from each output to common.
- (4) Specifications subject to change without notice.
- (5) Requires minimum load to regulate. No harm to the unit when operated at less than minimum load.
- (6) Unit will require 10 VDC to start.
- (7) External fusing should be used for system protection due to catastrophic failure. See Calex Application Notes for information on fusing.
- (8) 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.

APPLICATIONS

Start-up: A minimum load is required for the SML to have a nominal output. The specification indicates a minimum load of 10% of the maximum load, but will usually start with less. The type of load will also vary the start-up characteristics. Such as an electronic load or some types of active circuitry (vs. a pure resistive load) will require more load for start-up.

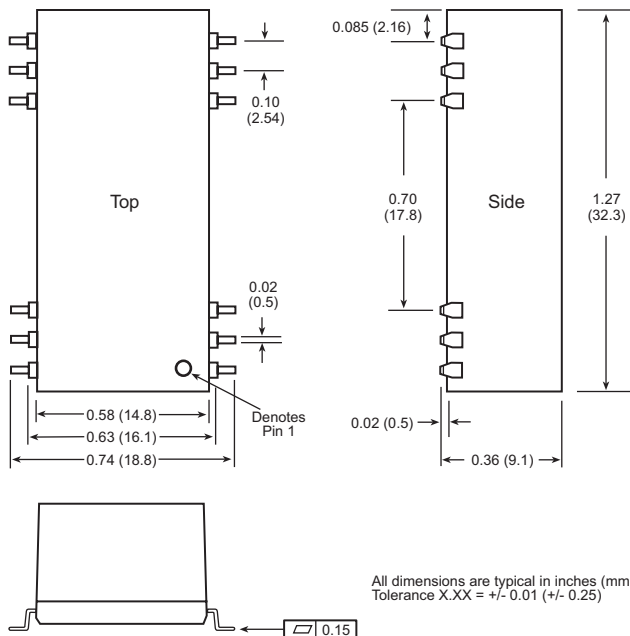
Each application should be verified and an additional resistive load added if needed.

The output may be in a burp mode (output pulsing) with less than a minimum load, causing the output voltage to vary.

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				
Calculated MTBF, Bellcore Method 1, Case 1	>2,000,000			Hr
Ambient Operating Temperature	MIN MAX	-40 +85	°C	
Case Operating Temperature	MIN MAX	-40 +105	°C	
Storage Temperature	MIN MAX	-40 +125	°C	
Thermal Impedance	TYP	38	°C/watt	
Humidity	MAX	95	%	
Cooling		Free-Air Convection		
General				
Case Size		1.27 x 0.74 x 0.36 inches 32.3 x 18.8 x 9.1mm		
Case Material		Non-Conductive Black Plastic		
Weight		8g		

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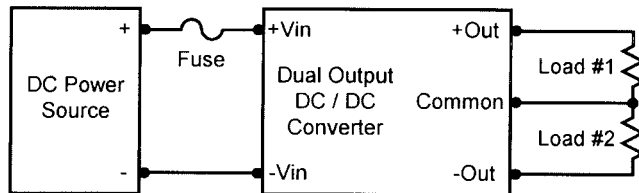
Mechanical Configuration



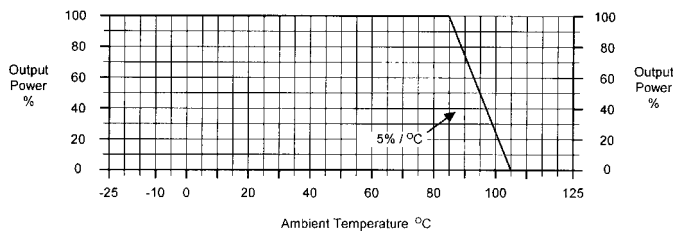
Pin	Function
1, 2	-INPUT
10	CMN
3, 11, 14, 22	NC
12	-OUTPUT
13	+OUTPUT
15	CMN
23, 24	+INPUT

NC: No Connection

Typical Application



Derating Curve



Connecting Pin Patterns

