

6 Watt Dual Series DC/DC Converters

Features

- Low Profile Copper Case (0.375" High)
- Six-Sided Shielded Case
- Low Input/Output Noise Operation
- 700 VDC Input/Output Isolation
- Short Circuit Protected Output
- Fixed Frequency Operation Independent of Line and Load
- Highly Regulated/Low Drift Output
- Rugged High Speed MOSFET Power Chopper
- 5 Year Warranty

Description

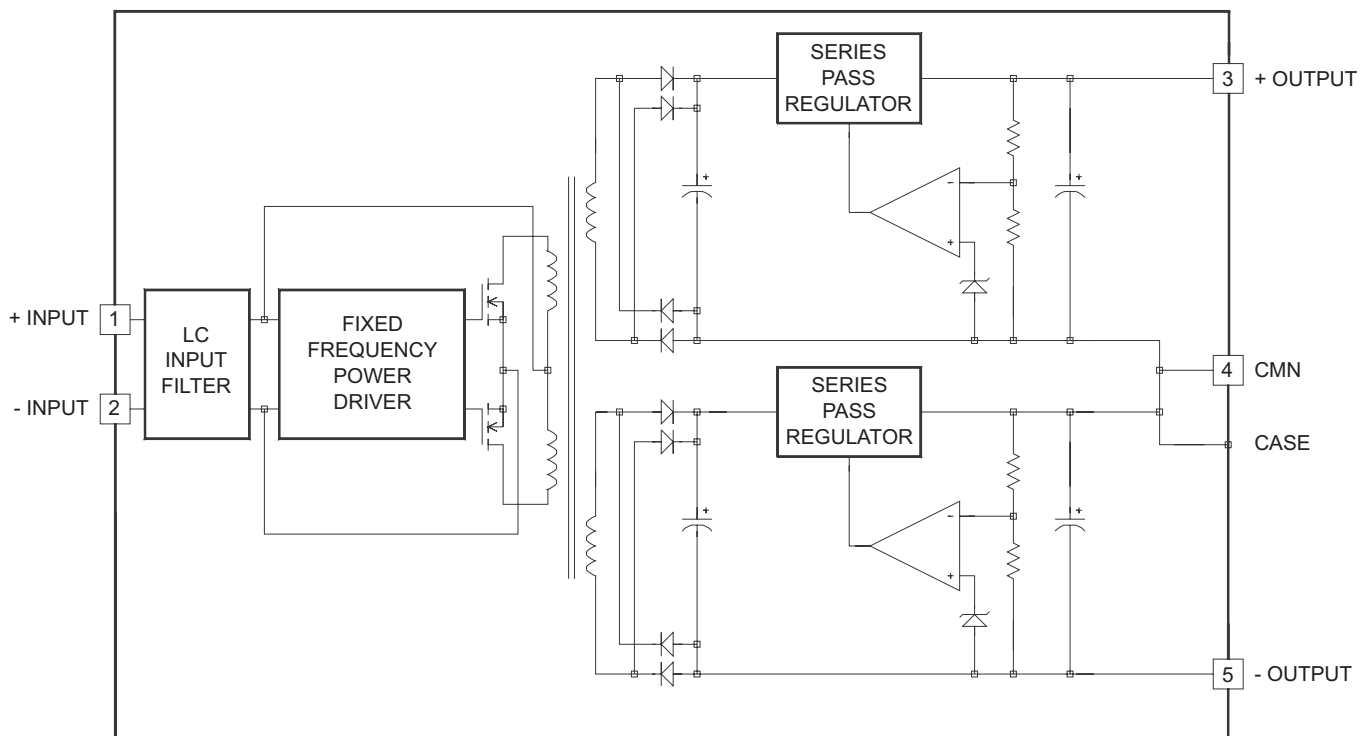
Ideal for industrial applications, these 6 Watt Dual Output converters are suitable for use in telecommunications, medical and other systems that require floating outputs.

These DC/DC converters operate at a fixed frequency that is independent of line and load. The isolation transformer provides 700 VDC isolation between input and output grounds allowing the outputs to be floated above or below the input ground. Designed for maximum performance, each unit has an LC input filter, high speed MOSFET power chopper and short circuit protected linear post regulators.

The copper case, measuring only 0.375" high, is shielded on all six sides to minimize radiated noise. All converters in this series are guaranteed under the CALEX 5 Year Warranty.

Selection Chart				
Model	Input Range VDC		Outputs VDC	Outputs mA
	MIN	MAX		
12D12.250A	11.16	13.20	±12	±250
12D15.200A	11.16	13.20	±15	±200
24D12.250A	22.32	26.40	±12	±250
24D15.200A	22.32	26.40	±15	±200
28D12.250A	26.04	30.80	±12	±250
28D15.200A	26.04	30.80	±15	±200
48D12.250A	44.64	52.80	±12	±250
48D15.200A	44.64	52.80	±15	±200

6 Watt Dual Output Series Block Diagram



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Input Parameters*						
Model		12D12.250A	12D15.200A	24D12.250A	24D15.200A	Units
Voltage Range	MIN	11.16		22.32		VDC
	MAX	13.20		26.40		
Reflected Ripple, 0-20MHz bw	TYP	10		5		mA P-P
	MAX	25		15		
Input Current Full Load	TYP	780	769	378	362	mA
No Load	TYP	45	50	22	23	
Efficiency	TYP	64	65	66	69	%
Switching Frequency	TYP	75				kHz
Maximum Input Overvoltage, 100ms	MAX	15		30		VDC
No damage						
Turn-on Time, 1% Output Error (2)	TYP	3				ms
Recommended Fuse		(3)				
Model		28D12.250A	28D15.200A	48D12.250A	48D15.200A	Units
Voltage Range	MIN	26.04		44.64		VDC
	MAX	30.80		52.80		
Reflected Ripple, 0-20MHz bw	TYP	7		15		mA P-P
	MAX	15		25		
Input Current Full Load	TYP	325	315	198	189	mA
No Load	TYP	22	22	21	21	
Efficiency	TYP	66	68	63	66	%
Switching Frequency	TYP	75				kHz
Maximum Input Overvoltage, 100ms	MAX	35		60		VDC
No damage						
Turn-on Time, 1% Output Error (2)	TYP	3				ms
Recommended Fuse		(3)				

Output Parameters*						
Model		12D12.250A 28D12.250A	24D12.250A 48D12.250A	12D15.200A 28D15.200A	24D15.200A 48D15.200A	Units
Output Voltage		±12		±15		VDC
Rated Current (4)	MIN	0		0		mA
	MAX	±250		±200		
Voltage Range 100% Load	MIN	11.90		14.90		VDC
	TYP	12.00		15.00		
	MAX	12.10		15.10		
Output Balance (Plus to Minus Output, Full Load)	TYP	0.6		0.6		%
	MAX	1.0		1.0		
Load Regulation 0-100%	TYP	0.02				%
	MAX	0.10				
Line Regulation Vin = Min-Max VDC	TYP	0.05				%
	MAX	0.10				
Transient Response (6)	TYP	never exceeds 1%				µs
Dynamic Response (7)	TYP	10				mV peak
Input Ripple Rejection (8)	TYP	65				dB
Noise, 0-20MHz bw	TYP	10				mV P-P
	MAX	40				
Temperature Coefficient	TYP	100		150		ppm/°C
	MAX	250		300		
Short Circuit Protection to Common for all Outputs		Continuous, 8 Hours Minimum Current Limit				

NOTES

* All parameters measured at Tc=25°C, nominal input voltage and full rated load unless otherwise noted. Refer to the CALEX Application Notes for the definition of terms, measurement circuits and other information.

(2) Turn on time is defined as the time from the application of power until the output is within 1% of its final value.

(3) Determine the correct fuse size by calculating the maximum DC current drain at low line input, maximum load and then adding 20 to 25 percent.

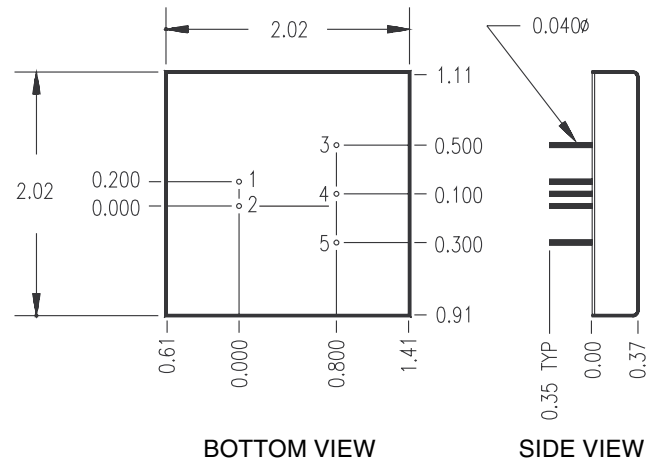
(4) No minimum load required.

(5) Short term stability is specified after a 30 minute warm-up at full load and with constant line, load and ambient conditions.

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General Specifications*				
All Models				Units
Isolation				
Isolation Voltage 10 μ A Leakage Input-Output	MIN	700		VDC
Input to Output Capacitance	TYP	75		pF
Environmental				
Case Operating Range No Derating	MIN MAX	-40 85		°C
Storage Range	MIN MAX	-55 100		°C
Thermal Impedance (9)	TYP	10		°C/Watt
General				
Unit Weight	TYP	1.7		oz
Mounting Kits		MS6 & MS15		

- (6) The transient response is specified as the time required for the output to settle from a 100% step load change (Rise time of step = 2 μ Sec.) to a 1% error band.
- (7) Dynamic response is the peak overshoot voltage during the transient response time as defined in note 6 above.
- (8) The input ripple rejection is specified for DC to 120Hz ripple with a modulation amplitude of 1% V_{in} .
- (9) The case thermal impedance is specified as the case temperature rise over ambient per package watt dissipated.
- (10) Water Washability - Callex 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.



Mechanical tolerances unless otherwise noted:

X.XX dimensions: ± 0.020 inches

X.XXX dimensions: ± 0.005 inches

Seal around terminals is not hermetic. Do not immerse units in any liquid.

Pin	Function
1	+INPUT
2	-INPUT
3	+OUTPUT
4	CMN
5	-OUTPUT