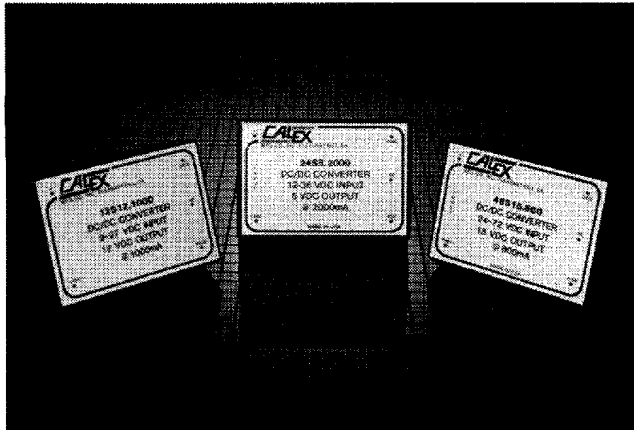


CALEX MANUFACTURING CO 52E D 1811250 0001158 02T CEX
12 Watt Single Output DC/DC Converters

3355 Vincent Road, Pleasant Hill, CA 94523-4389 800-542-3355 Telephone (415)932-3911 FAX: (415)932-6017



T-57-11



FEATURES

- UL Recognized
- Low Noise Output
- LC Type Input Filter
- Six-Sided Shielded Steel Case
- Very Wide Input Voltage Ranges (9-27, 12-36, and 24-72)
- High Efficiency Operation
- Long Term Output Fault Survival
- 5 Year Warranty

SELECTION CHART

MODEL	INPUT RANGE VDC		OUTPUTS VDC	OUTPUTS mA	CASE
	MIN	MAX			
12S5.2000*	9.00	27.00	5.0	2000	B1
12S12.1000*	9.00	27.00	12.0	1000	B1
12S15.800*	9.00	27.00	15.0	800	B1
24S5.2000*	12.00	36.00	5.0	2000	B1
24S12.1000*	12.00	36.00	12.0	1000	B1
24S15.800*	12.00	36.00	15.0	800	B1
48S5.2000*	24.00	72.00	5.0	2000	B1
48S12.1000*	24.00	72.00	12.0	1000	B1
48S15.800*	24.00	72.00	15.0	800	B1

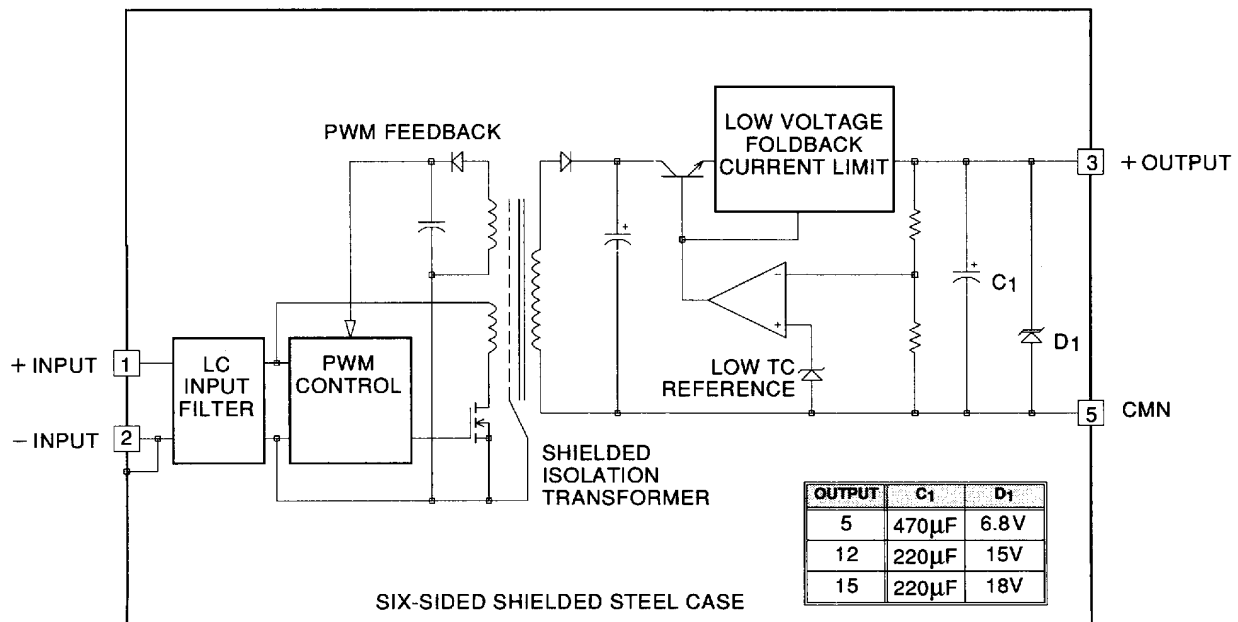
*These units are Recognized to UL 1012 and UL 1459-2.

DESCRIPTION

These 12 Watt Single Output DC/DC converters are designed for telecommunications, industrial controls, medical equipment and instrumentation systems. The converters feature very wide input voltage ranges.

The converter consists of a hi-speed chopper circuit using state-of-the-art MOSFET technology, isolation transformer, and high regulation linear post regulator. These provide very low noise and ultra stable output voltages.

12 WATT SINGLE SERIES BLOCK DIAGRAM



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MODEL		INPUT PARAMETERS (1)				UNITS
		12S5.2000 12S15.800	12S12.1000 24S15.800	24S5.2000 24S12.1000	48S5.2000 48S15.800	
Voltage Range	MIN	9.00		12.00	24.00	VDC
	MAX	27.00		36.00	72.00	
Reflected Ripple, 0-20MHz BW	TYP	30		20	15	mA p-p
	MAX	75		45	30	
Input Current Full Load No Load	TYP	1480		720	360	mA
	TYP	68		40	24	
Efficiency	TYP			70		%
Switching Frequency	TYP			90		kHz
Maximum Input Over Voltage, 100mS No Damage	MAX	33		40	80	VDC
Turn-on Time, 1% Output Error	TYP			60		mSec
Recommended Fuse				(2)		

MODEL		OUTPUT PARAMETERS (1)				UNITS
		12S5.2000 48S5.2000	24S5.2000 48S12.1000	12S12.1000 24S15.800	24S12.1000 48S15.800	
Output Voltage		5		12	15	VDC
Rated Current (3)	MIN	0		0	0	mA
	MAX	2000		1000	800	
Voltage Range 100% Load	MIN	4.95		11.90	14.90	VDC
	TYP	5.00		12.00	15.00	
	MAX	5.05		12.10	15.10	
Load Regulation 0-100% Load	TYP			0.02		%
	MAX			0.05		
Line Regulation Vin = Min-Max VDC	TYP			0.02		%
	MAX			0.05		
Short Term Stability (4)	TYP			0.05		%
Long Term Stability	TYP			0.3		%/kHrs
Transient Response (5)	TYP			20		µSec
Dynamic Response (6)	TYP	30		20	20	mV peak
Input Ripple Rejection (7)	TYP			60		dB
Noise, 0-20MHz BW	TYP			10		mV p-p
	MAX			40		
Temperature Coefficient	TYP			120		ppm/°C
	MAX			200		
Overvoltage Clamp (8)	TYP	6.8		15	18	VDC
Short Circuit Protection to Common for all Outputs		Continuous, 8 Hours Minimum Current Limit				

NOTES

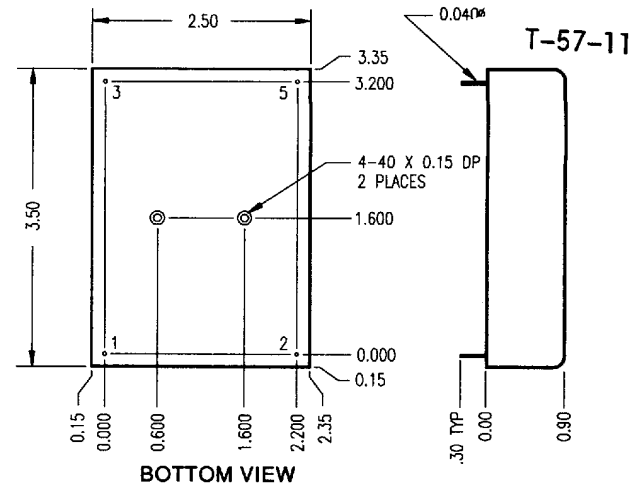
- (1) All parameters measured at 25°C, nominal input voltage and full rated load unless otherwise noted. Refer to the CALEX Application Notes for the definition of terms, measurement circuits and other information.
- (2) Determine the correct fuse size by calculating the maximum DC current drain at low line input, maximum load then adding 20 to 25 percent. Slow blow type recommended.
- (3) No minimum load required.
- (4) Short term stability is specified after a 30 minute warm-up at full load.
- (5) Transient response is defined as the time for the output to settle from 100% step load change to a 1% error band (rise time of step = 2 µSec).
- (6) Dynamic response is defined as the peak overshoot during a transient as defined in note 5 above.
- (7) The input ripple rejection is specified for DC to 120Hz ripple with a modulation amplitude of 1% of Vin.
- (8) For module protection only, with use of external fuse on input circuit, see note 2.
- (9) The functional temperature range is intended to give an additional data point for use in evaluating this power supply. At the low functional temperature the power supply will function with no side effects, however sustained operation at the high functional temperature will reduce expected operational life. The data sheet specifications are not guaranteed over the functional temperature range.
- (10) The case thermal impedance is specified as the case temperature rise over ambient per package watt dissipated.

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GENERAL SPECIFICATIONS (1)			
MODEL	ALL MODELS		UNITS
ISOLATION			
Isolation Voltage	MIN	500	VDC
Input-Output 10 μ A Leakage			
Input to Output Capacitance	TYP	120	pF
ENVIRONMENTAL			
Case Operating Range, No Derating	MIN MAX	-25 80	$^{\circ}$ C
Case Functional Range (9)	MIN MAX	-40 85	$^{\circ}$ C
Storage Range	MIN MAX	-55 100	$^{\circ}$ C
Thermal Impedance (10)	TYP	6	$^{\circ}$ C/Watt
Unit Weight	TYP	6.5	oz
Case	B1		
Mounting Kits	MK215-022 & MK215-08B		



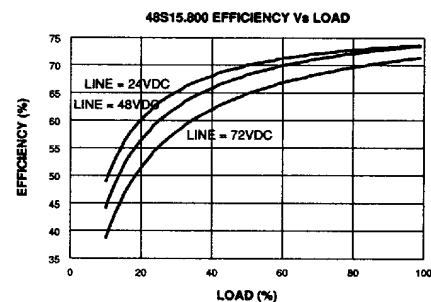
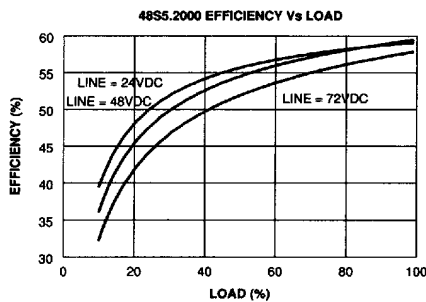
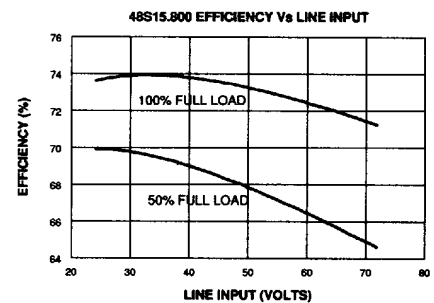
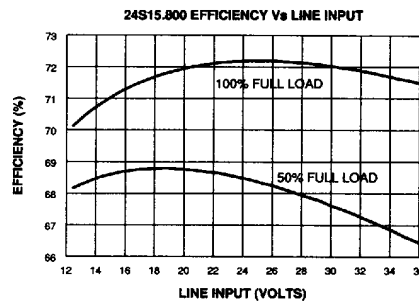
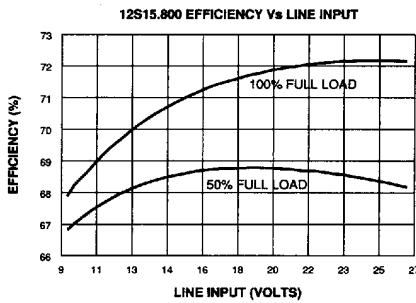
Mechanical tolerances unless otherwise noted:

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
5	CMN



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Typical Performance (Tc=25°C; Full Rated Load).

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