

New Product 3 Watt Triple Outputs



3355 Vincent Road, Pleasant Hill, CA 94523-4389 Telephone (415) 932-3911 Telex: 269 888 Telefax: (415) 932-6017

T-57-11

FEATURES

- Six Sided Shielded Copper Case For Low EMI
- Low Input/Output Noise Operation
- Long Term Short Circuit Protection
- Highly Regulated, Fully Specified Outputs
- Low Profile 0.38 Inch Tall Case
- Constant Frequency Operation, Independent of Line or Load
- 500 VDC Isolation Between All Sections

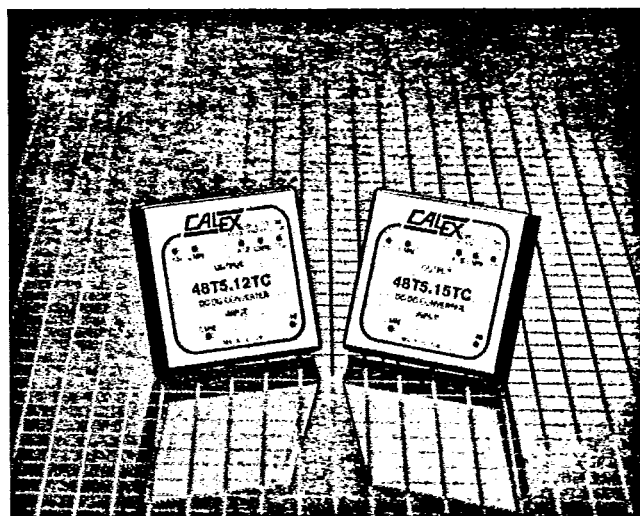
DESCRIPTION

These converters are specifically designed for modern telecommunications applications such as: central office test equipment, remote site repeater networks and small instrumentation systems where 48 volts is available and standard outputs of 5 and ± 12 or ± 15 are needed.

The converters consist of a rugged 50kHz MOSFET switching stage, low noise pot core transformer and post regulation for highly stable, low noise outputs. The extremely low noise operation of these converters is achieved by the use of CALEX's proprietary, low common mode noise switching topology.

The TC Triple series features a resettable semiconductor overtemperature circuit that disables the switching stage should the case temperature exceed 90 degrees C. Short circuit protection is provided for all outputs to common or any other output.

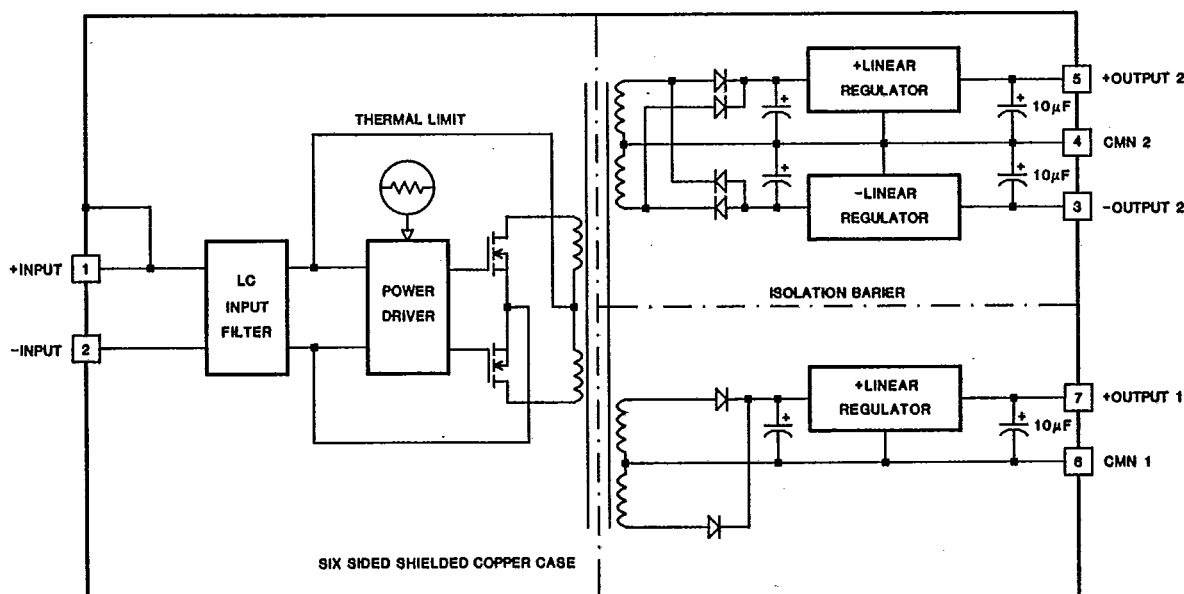
To provide maximum versatility the converter is arranged so that 500 VDC isolation is provided from input to any output and between output section 1 and section 2. This provides the systems designer with essentially 2 isolated converters (a single and a dual) that can drive two isolated non-related portions of the total system.



SELECTION CHART

MODEL	INPUT RANGE VDC		OUTPUTS VDC	OUTPUTS mA	CASE
	MIN	MAX			
48T5.12TC	45	51	5, ± 12	100, ± 100	D
48T5.15TC	45	51	5, ± 15	100, ± 80	D

TC TRIPLE SERIES BLOCK DIAGRAM



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INPUT PARAMETERS (1)				
MODEL		48T5.12TC	48T5.15TC	UNITS
Voltage Range (2) 100% Rated Load	MIN	45.0		VDC
	TYP	48.0		
	MAX	51.0		
	MIN	44.0		
	MAX	57.0		
Reflected Ripple 0-20MHz BW	TYP	10		mA p-p
	MAX	20		
Input Current Full Load	TYP	110		mA
	No Load	22		
Efficiency	TYP	55		%
Switching Frequency	TYP	50		kHz
Maximum Input Overvoltage 100mS No Damage	MIN	65		VDC
Recommended Fuse				Slo-Blo Type 1/4 Amp

OUTPUT PARAMETERS (1)					
MODEL		48T5.12TC 48T5.15TC	48T5.12TC	48T5.15TC	UNITS
Output Voltage		5	± 12	± 15	VDC
Rated Current	MIN	0	0	0	mA
	MAX	100	100	80	
Voltage Range 100% Load	MIN	4.75	11.50	14.40	VDC
	TYP	5.00	12.00	15.00	
	MAX	5.25	12.50	15.60	
Load Regulation 0–100% Full Load	TYP	0.22	0.20	0.20	%
	MAX	1.20	1.20	1.20	
Line Regulation Vin = Min–Max VDC	TYP	0.22	0.20	0.20	%
	MAX	1.20	1.20	1.20	
Short Term Stability 0–24 Hrs (3)	TYP	0.10	0.10	0.10	%
Long Term Stability	TYP	0.30	0.30	0.30	%/kHrs
Transient Response (4)	TYP	10	20	20	μSec
Noise, 0–20MHz BW	TYP	5	5	5	mV p-p
	MAX	35	35	35	
Temperature Coefficient	TYP	75	75	75	ppm/°C
	MAX	150	150	150	
Short Circuit Protection to Common for all Outputs		Continuous, 8 Hrs Minimum			

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) An extended input voltage range is possible if the maximum current for all outputs is reduced to 60% (i.e. 5Volt output is 60mA maximum, etc.).
- (3) Short term stability is specified after a 30 minute warmup at rated load and with constant line, load and ambient conditions.
- (4) After a 25% step change of the load, the output voltage will be within ± 1% of the final value within the transient response time.

- (5) Case is connected to + Input, Pin 1.

- (6) Case thermal impedance is defined as the case temperature rise per package watt dissipated.

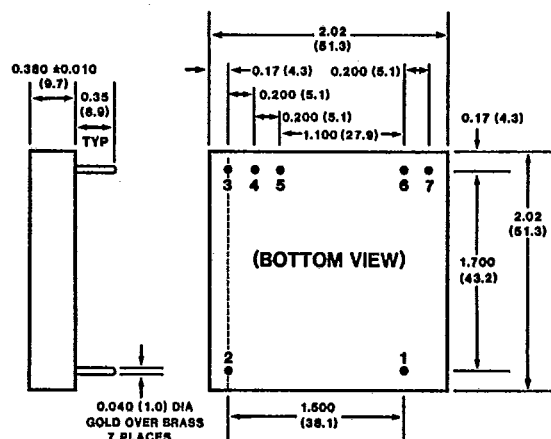
- (7) Thermal shutdown is defined as the case temperature when the converter is switched to a low power state by the thermal shutdown circuitry.

CALEX

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GENERAL SPECIFICATIONS			
MODEL	ALL MODELS		UNITS
ISOLATION (5)			
Isolation Voltage	MIN	500	VDC
10 μ A Leakage			
Input to Output Capacitance	TYP	80	pF
ENVIRONMENTAL			
Case Operating Range, No Derating	MIN MAX	- 25 80	°C
Storage Range	MIN MAX	- 55 90	°C
Thermal Impedance (6)	TYP	10	°C/Watt
Thermal Shut Down Case Temperature (7)	TYP	90	°C

TC TRIPLE SERIES CASE SIZE D

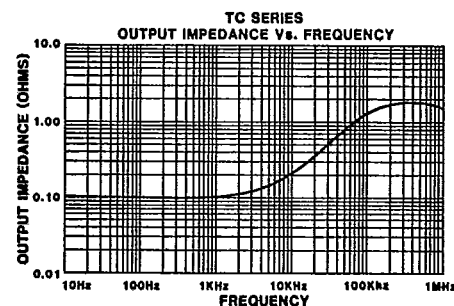
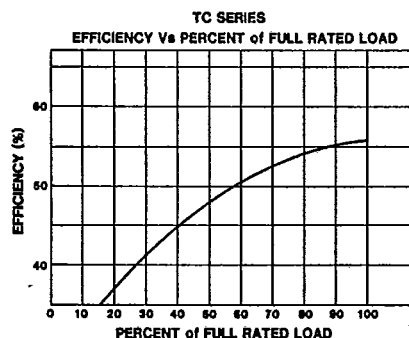
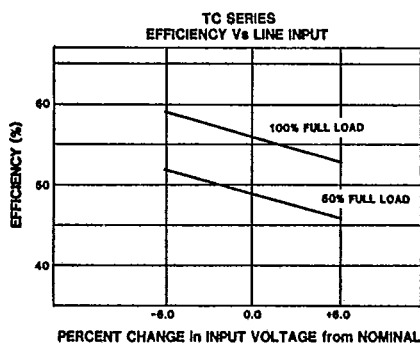
Dimensions in parentheses are in mm. Mechanical tolerances unless otherwise noted:

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 (5)
2	- INPUT
3	- OUTPUT 2
4	COMMON 2
5	+ OUTPUT 2
6	COMMON 1
7	+ OUTPUT 1



Case Sizes and Mounting Kits

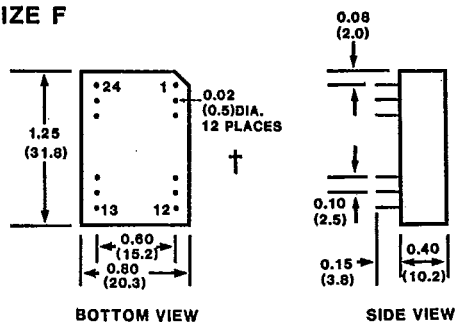


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T-90-20

0.5 to 1.0 Watt Case pages 4-6

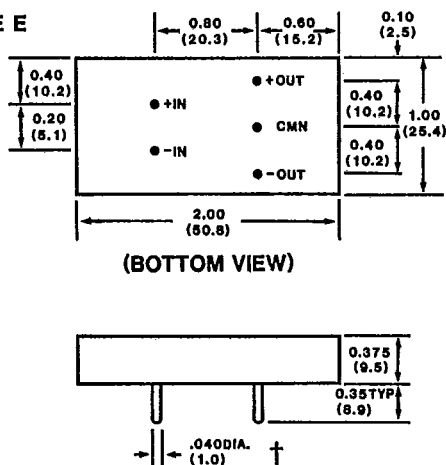
CASE SIZE F



PIN NUMBER	SINGLE OUTPUTS	DUAL OUTPUTS
1	+Vin	+Vin
2	NC	-Vout
3	NC	OUT COM
10	-Vout	OUT COM
11	+Vout	+Vout
12	-Vin	-Vin
13	-Vin	-Vin
14	+Vout	+Vout
15	-Vout	OUT COM
22	NC	OUT COM
23	NC	-Vout
24	+Vin	+Vin

1.8 Watt thru 6 Watt Cases pages 7-27

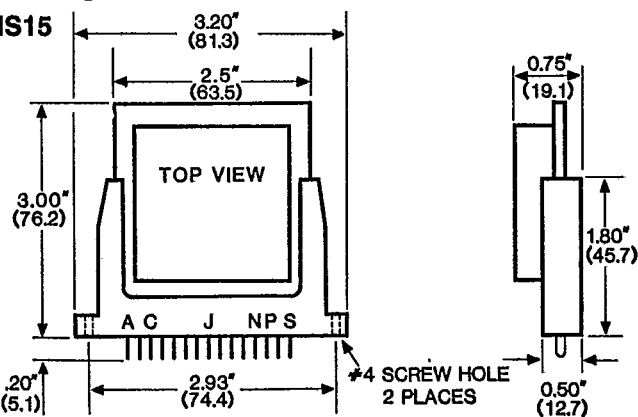
CASE SIZE E



NOTE: Single output pin configuration not shown.

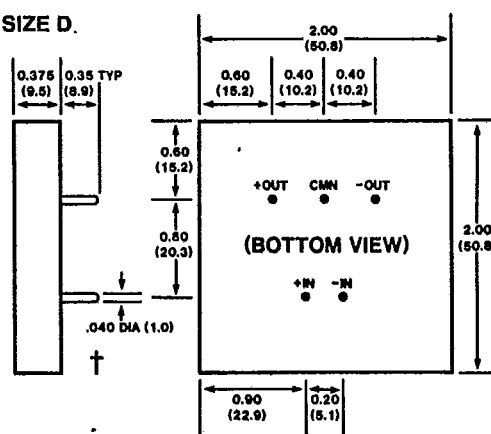
Mounting Kits for D and E Cases

MS15



PIN	FUNCTION	
	SINGLE	DUAL
A	+ DC INPUT	+ DC INPUT
C	- DC INPUT	- DC INPUT
J	N/C	CMN.
N	KEY	KEY
P	+ OUTPUT	+ OUTPUT
S	CMN.	- OUTPUT

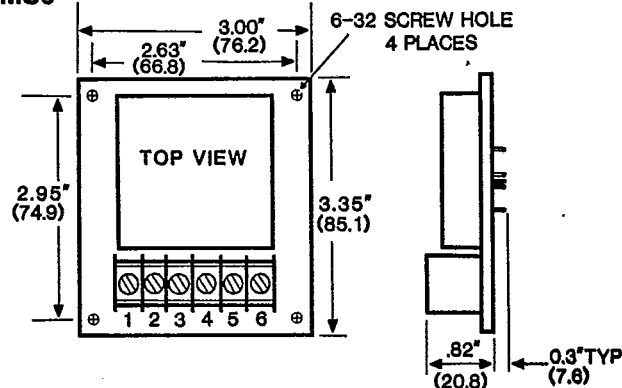
CASE SIZE D.



Alternate Industry Standard 5 pin configuration available upon request. Consult factory for details (415)932-3911.

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

MS6



SCREW TERMINAL	FUNCTION	
	SINGLE	DUAL
1	+ OUTPUT	+ OUTPUT
2	N/C	CMN.
3	CMN.	- OUTPUT
4	N/C	N/C
5	+ DC INPUT	+ DC INPUT
6	- DC INPUT	- DC INPUT

