

# 2 Watt RM Dual Series DC/DC Converters



## Description

The CALEX RM dual output series provides a regulated  $\pm 5$ ,  $\pm 12$  and  $\pm 15$  Volt output from a power bus. The RM Duals are fully isolated input to output. The industry standard case and pinout makes the RM dual series an excellent choice for conversion requirements.

## Features

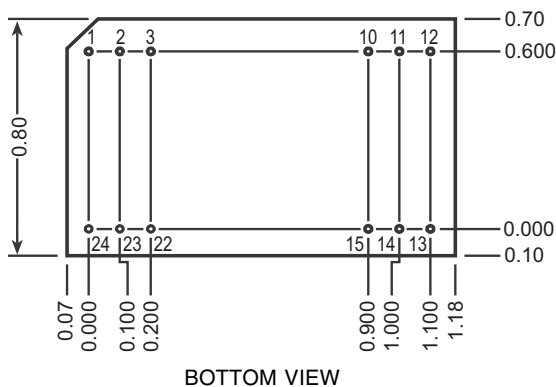
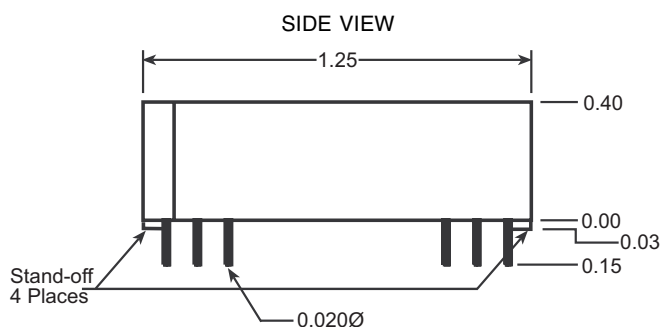
- 1-2 Watt Regulated Output
- Low Cost
- Industry Standard 24 Pin DIP Package
- Water Washable Construction
- 5 Year Warranty
- Customs and Specials Available

**Selection Chart**

MODEL	INPUT RANGE VDC		OUTPUT		
	MIN	MAX	VDC	mA	Power W
*5D5.090RM	4.5	5.5	$\pm 5.0$	$\pm 090$	1
5D12.085RM	4.5	5.5	$\pm 12.0$	$\pm 085$	2
5D15.070RM	4.5	5.5	$\pm 15.0$	$\pm 070$	2
12D5.090RM	10.8	13.2	$\pm 5.0$	$\pm 090$	1
12D12.085RM	10.8	13.2	$\pm 12.0$	$\pm 085$	2
12D15.070RM	10.8	13.2	$\pm 15.0$	$\pm 070$	2
24D5.090RM	21.6	26.4	$\pm 5.0$	$\pm 090$	1
24D12.085RM	21.6	26.4	$\pm 12.0$	$\pm 085$	2
24D15.070RM	21.6	26.4	$\pm 15.0$	$\pm 070$	2

\*Agency Approvals: CSA/UL 60950

## Mechanical Specification



Mechanical tolerances unless noted:  
 X.XX dimensions:  $\pm 0.025$   
 X.XXX dimensions:  $\pm 0.005$

## General Specifications \*

All Models			Units
<b>Isolation</b>			
Isolation Voltage Input to Output	MIN	850	VDC
Input to Output Capacitance	TYP	50	pF
<b>Environmental</b>			
Case Operating Range No Derating	MIN MAX	-25 85	$^{\circ}\text{C}$
Thermal Impedance (1)	TYP	30	$^{\circ}\text{C}/\text{Watt}$
Storage Range	MIN MAX	-55 100	$^{\circ}\text{C}$
Unit Weight	TYP	12	gram
Case Material	Non Conductive Plastic		

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

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Input Parameters*								
Model		5D5.090RM	5D12.085RM	5D15.070RM	12D5.090RM	12D12.085RM	12D15.070RM	Units
Voltage Range	MIN	4.5	4.5	4.5	10.8	10.8	10.8	VDC
	MAX	5.5	5.5	5.5	13.2	13.2	13.2	
Input Current								
Full Load	TYP	375	716	710	170	295	300	mA
No Load	TYP	40	53	60	50	50	50	
Efficiency	TYP	48	57	59	44	57	59	%
Switching Frequency	TYP	220						kHz

Model		24D5.090RM	24D12.085RM	24D15.070RM	Units
Voltage Range	MIN	21.6	21.6	21.6	VDC
	MAX	26.4	26.4	26.4	
Input Current					
Full Load	TYP	87	155	153	mA
No Load	TYP	20	20	20	
Efficiency	TYP	43	55	57	%
Switching Frequency	TYP	220			kHz

Output Parameters*								
Model		5D5.090RM	5D12.085RM	5D15.070RM	12D5.090RM	12D12.085RM	12D15.070RM	Units
Output Voltage		±5	±12	±15	±5	±12	±15	VDC
Output Voltage Accuracy	MIN	4.80	11.64	14.55	4.80	11.64	14.55	VDC
	MAX	5.20	12.36	15.45	5.20	12.36	15.45	
Rated Load Range	MIN	0	0	0	0	0	0	mA
	MAX	±90	±85	±70	±90	±85	±70	
Load Regulation	TYP	0.4	0.5	0.5	0.4	0.5	0.5	%
	MAX	2	1	1	2	1	1	
Line Regulation	TYP	0.1	0.5	0.5	0.1	0.5	0.5	%
	MAX	1	1	1	1	1	1	
Noise, Peak - Peak (2)	TYP	50						mV P-P
Temperature Coefficient	TYP	200						ppm/°C
Short Circuit		Continuous, Auto Recovery						

Model		24D5.090RM	24D12.085RM	24D15.070RM	Units
Output Voltage		±5	±12	±15	VDC
Output Voltage Accuracy	MIN	4.80	11.64	14.55	VDC
	MAX	5.20	12.36	15.45	
Rated Load Range	MIN	0	0	0	mA
	MAX	±90	±85	±70	
Load Regulation	TYP	0.4	0.5	0.5	%
	MAX	2	1	1	
Line Regulation	TYP	0.1	0.5	0.5	%
	MAX	1	1	1	
Noise, Peak - Peak (2)	TYP	50			mV P-P
Temperature Coefficient	TYP	200			ppm/°C
Short Circuit		Continuous, Auto Recovery			

## Notes:

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

- (1) The case thermal impedance is specified as the case temperature rise over ambient per internal watt dissipated.  
All tests with connections to all active pins. Operation with connection to only one pin will not harm the unit.

- (2) Noise is measured per CALEX Application Notes. Measurement bandwidth is 0 - 20 MHz. Noise measurements are made with 0.1µF ceramic capacitor connected between output and CMN pins.

- (3) Specifications subject to change without notice.

- (4) 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.