

# 2 Watt RM Single Series DC/DC Converters



## Description

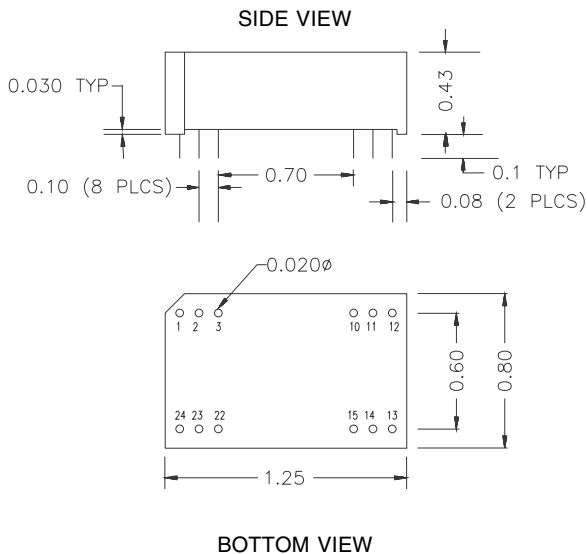
The CALEX RM series provides a regulated output in a small package with an industry standard pinout. Isolation allows flexibility. A regulated output means excellent voltage stability over the life of the product.

## Features

- 2 Watt Regulated Output
- 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
5S5.400RM	4.5	5.5	5.0	400	2
5S12.165RM	4.5	5.5	12.0	165	2
5S15.130RM	4.5	5.5	15.0	130	2
12S5.400RM	10.8	13.2	5.0	400	2
12S12.165RM	10.8	13.2	12.0	165	2
12S15.130RM	10.8	13.2	15.0	130	2
24S5.400RM	21.6	26.4	5.0	400	2
24S12.165RM	21.6	26.4	12.0	165	2
24S15.130RM	21.6	26.4	15.0	130	2

## Mechanical Specification



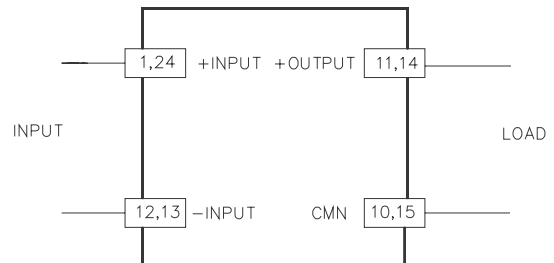
Mechanical tolerances unless noted:

X.XX dimensions:  $\pm 0.020$

X.XXX dimensions:  $\pm 0.005$

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

## Application



General Specifications*			
All Models			Units
<b>Isolation</b>			
Isolation Voltage	MIN	850	VDC
Input to Output Capacitance	TYP	20	pF
<b>Environmental</b>			
Case Operating Range	MIN	-40	°C
	MAX	85	
Thermal Impedance (2)	TYP	30	°C/Watt
Unit Weight	TYP	12	gram
Case Material	Non Conductive Plastic		

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Input Parameters*								
Model		5S5.400RM	5S12.165RM	5S15.130RM	12S5.400RM	12S12.165RM	12S15.130RM	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	800	695	660	330	290	275	mA
No Load	TYP	50	70	80	50	50	50	
Efficiency	TYP	50	57	59	50	57	59	%
Switching Frequency	TYP	350						kHz

Model		24S5.400RM	24S12.165RM	24S15.130RM	Units
Voltage Range	MIN	21.6	21.6	21.6	VDC
	MAX	26.4	26.4	26.4	
Input Current					
Full Load	TYP	173	150	142	mA
No Load	TYP	25	25	25	
Efficiency	TYP	48	55	57	%
Switching Frequency	TYP	350			kHz

Output Parameters*								
Model		5S5.400RM	5S12.165RM	5S15.130RM	12S5.400RM	12S12.165RM	12S15.130RM	Units
Output Voltage		5	12	15	5	12	15	VDC
Output Voltage Accuracy	MIN	4.80	11.50	14.40	4.80	11.50	14.40	VDC
	MAX	5.20	12.50	15.60	5.20	12.50	15.60	
Rated Load Range	MIN	0	0	0	0	0	0	mA
	MAX	400	165	130	400	165	130	
Load Regulation	TYP	0.4	0.2	0.2	0.4	0.2	0.2	%
	Min-Max Load	MAX	2	1	1	2	1	
Line Regulation	TYP	0.1	0.1	0.1	0.1	0.1	0.1	%
	Min-Max Line	MAX	1	0.5	0.5	1	0.5	
Noise, Peak - Peak (1)	TYP	60						mV P-P
Temperature Coefficient	TYP	200						ppm/°C
Short Circuit		Continuous, Auto Recovery						

Model		24S5.400RM	24S12.165RM	24S15.130RM	Units
Output Voltage		5	12	15	VDC
Output Voltage Accuracy	MIN	4.80	11.50	14.40	VDC
	MAX	5.20	12.50	15.60	
Rated Load Range	MIN	0	0	0	mA
	MAX	400	165	130	
Load Regulation	TYP	0.4	0.2	0.2	%
	Min-Max Load	MAX	2	1	
Line Regulation	TYP	0.1	0.1	0.1	%
	Min-Max Line	MAX	1	0.5	
Noise, Peak - Peak (1)	TYP	60			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 the CALEX Application Notes for the definition of terms, measurement circuits and other information.

All tests with connections to all active pins. Operation with connection to only one pin will not harm the unit.

(1) Noise is measured per CALEX application notes. Measurement bandwidth is 20 MHz.

- (2) The case thermal impedance is specified as the case temperature rise over ambient per package watt dissipated.
- (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.