

3 Watt UM Single Series DC/DC Converters

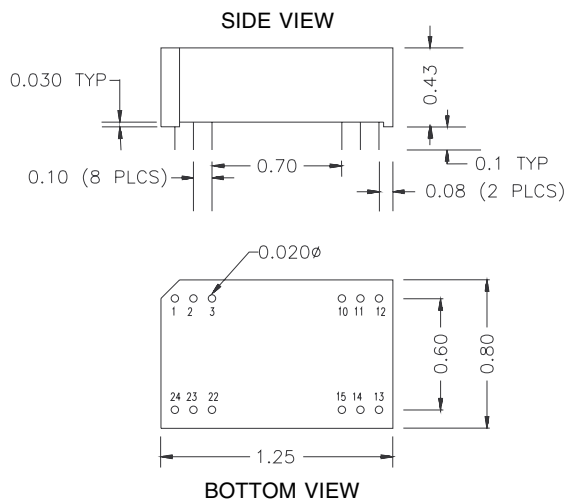


Description

The CALEX UM series provides a semi-regulated output in a small package with an industry standard pinout. Isolation allows flexibility in connecting grounds for lowest system noise. The high efficiency means efficient use of your system power.

The UM series contains filters at the input and output and generally no extra parts are required. Four terminal operation allows using negative inputs and/or connections to provide a negative output.

Mechanical Specification



Mechanical tolerances unless noted:

X.XX dimensions: ± 0.020

X.XXX dimensions: ± 0.005

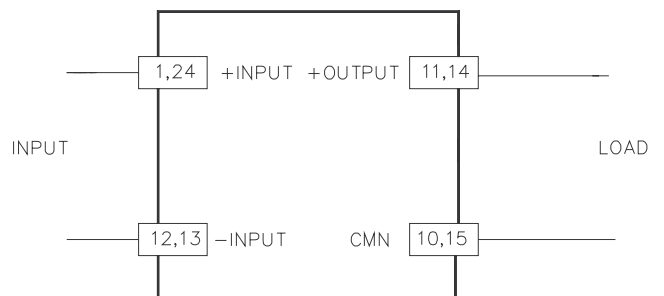
Pin	Function
1, 24	+INPUT
2, 23	N/C
3, 22	N/C
10, 15	CMN
11, 14	+OUTPUT
12, 13	-INPUT

Features

- 3 Watts Semi-Regulated Outputs
- High Efficiency
- 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
5S5.600UM	4.5	5.5	5.0	600	3
5S12.250UM	4.5	5.5	12.0	250	3
5S15.200UM	4.5	5.5	15.0	200	3
12S5.600UM	10.8	13.2	5.0	600	3
12S12.250UM	10.8	13.2	12.0	250	3
12S15.200UM	10.8	13.2	15.0	200	3
24S5.600UM	21.6	26.4	5.0	600	3
24S12.250UM	21.6	26.4	12.0	250	3
24S15.200UM	21.6	26.4	15.0	200	3

Application



General Specifications*			
All Models			Units
Isolation			
Isolation Voltage	MIN	850	VDC
Isolation Current	TYP	20	pF
Input to Output Capacitance			
Environmental			
Case Operating Range	MIN	-40	°C
	MAX	85	
Thermal Impedance (3)	TYP	30	°C/Watt
Unit Weight	TYP	12	gram
Case Material	Non Conductive Plastic		

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Input Parameters*								
Model		5S5.600UM	5S12.250UM	5S15.200UM	12S5.600UM	12S12.250UM	12S15.200UM	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	770	840	770	325	325	320	mA
	No Load	30	30	30	30	30	30	
Efficiency	TYP	80	82	80	80	81	80	%
Switching Frequency	TYP	175			148			kHz

Model		24S5.600UM	24S12.250UM	24S15.200UM	Units
Voltage Range	MIN	21.6	21.6	21.6	VDC
	MAX	26.4	26.4	26.4	
Input Current	Full Load	170	170	175	mA
	No Load	30	30	30	
Efficiency	TYP	80	82	80	%
Switching Frequency	TYP	130			kHz

Output Parameters*									
Model		5S5.600UM	5S12.250UM	5S15.200UM	12S5.600UM	12S12.250UM	12S15.200UM	Units	
Output Voltage		5	12	15	5	12	15	VDC	
Output Voltage Accuracy	MIN	4.8	11.5	14.3	4.8	11.5	14.3	VDC	
	MAX	5.2	12.5	15.7	5.2	12.5	15.7		
Output Voltage, No Load		TYP	8.0	14.0	19.0	6.5	16.0	19.0	
Rated Load Range	MIN	0	0	0	0	0	0	mA	
	MAX	600	250	200	600	250	200		
Load Regulation 25%-100%	TYP	11							%
	MAX	14							
Line Regulation (1) Min-Max Line	TYP	1.1							%/%
	MAX	1.5							
RMS Noise, 0 - 20 MHz (2)		TYP	50		35			mV RMS	
Temperature Coefficient		TYP	200					ppm/°C	
Short Circuit		Short Term (Momentary), Auto Restart							

Model		24S5.600UM	24S12.250UM	24S15.200UM	Units
Output Voltage		5	12	15	VDC
Output Voltage Accuracy	MIN	4.8	11.5	14.3	VDC
	MAX	5.2	12.5	15.7	
Output Voltage, No Load		TYP	8.0	16.0	19.0
Rated Load Range	MIN	0	0	0	mA
	MAX	600	250	200	
Load Regulation 25%-100%	TYP	11			%
	MAX	14			
Line Regulation (1) Min-Max Line	TYP	1.1			%/%
	MAX	1.5			
RMS Noise, 0 - 20 MHz (2)		TYP	35		
Temperature Coefficient		TYP	200		
Short Circuit		Short Term (Momentary), Auto Restart			

Notes:

* All parameters measured at $T_c = 25^\circ\text{C}$, 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) Line regulation is for a 1.0% change in input voltage.
- (2) Noise is measured per CALEX application notes. Measurement bandwidth is 20 MHz. Output noise is measured with a $10\mu\text{F}/25\text{V}$

solid tantalum capacitor connected across the output pins.

- (3) The case thermal impedance is specified as the case temperature rise over ambient per package watt dissipated.
- (4) Specifications subject to change without notice.
- (5) 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.