

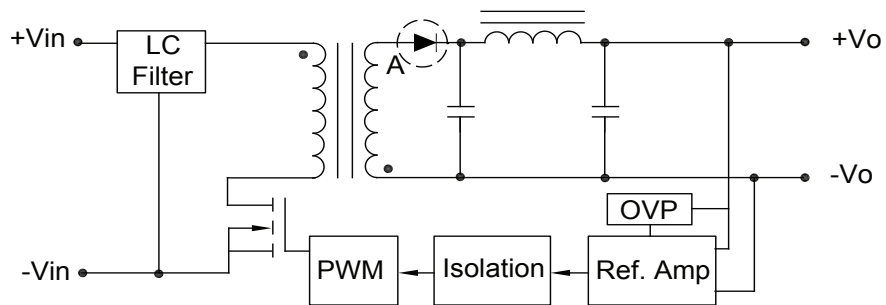
# 10 WATT EW SINGLE



## Features

- 2:1 Wide Input Range
- Efficiency up to 88%
- I/O Isolation 1500VDC
- Over Voltage Protection
- MTBF > 1,000,000 Hours
- RoHS Compliant

Selection Chart			
Model	Input Range	Output	
		VDC	mA
12S3R3.3000EW	9.0 - 18.0	3.3	3000
12S5.2000EW	9.0 - 18.0	5	2000
12S12.833EW	9.0 - 18.0	12	833
12S15.666EW	9.0 - 18.0	15	666
24S2R5.3000EW	18.0 - 36.0	2.5	3000
24S3R3.3000EW	18.0 - 36.0	3.3	3000
24S5.2000EW	18.0 - 36.0	5	2000
24S12.833EW	18.0 - 36.0	12	833
24S15.666EW	18.0 - 36.0	15	666
48S2R5.3000EW	36.0 - 75.0	2.5	3000
48S3R3.3000EW	36.0 - 75.0	3.3	3000
48S5.2000EW	36.0 - 75.0	5	2000
48S12.833EW	36.0 - 75.0	12	833
48S15.666EW	36.0 - 75.0	15	666



2.5V, 3.3V and 5V output models use the synchronous-rectifier configuration shown above.

12V and 15V output models employ a standard, diode rectification architecture.

## Block Diagram

# 10 WATT EW SINGLE

Input Parameters							
Model		12S3R3.3000EW		12S5.2000EW	12S12.833EW	12S15.666EW	Units
Voltage Range	MIN TYP MAX	9.0 12.0 18.0				VDC	
Input Current	No Load Full Load	TYP TYP	40 1006	40 1004	40 957	40 968	mA
Reflected Ripple	TYP	60				mA	
Under Voltage Shutdown	MAX	8.5				VDC	
Reverse Polarity Input Current	MAX	0.5				A	
Input Filter		Pi Filter					
Efficiency	TYP	82	83	87	86	%	
Switching Frequency	TYP	400				kHz	
Input Surge Voltage (1000 ms)	MIN MAX	-0.7 25				VDC	
Recommended Fuse		2000 mA Slow - Blow Type				mA	
Model		24S2R5.3000EW	24S3R3.3000EW	24S5.2000EW	24S12.833EW	24S15.666EW	Units
Voltage Range	MIN TYP MAX	18.0 24.0 36.0				VDC	
Input Current	No Load Full Load	TYP TYP	20 377	20 485	20 479	20 478	mA
Reflected Ripple	TYP	40				mA	
Under Voltage Shutdown	MAX	17				VDC	
Reverse Polarity Input Current	MAX	0.5				A	
Input Filter		Pi Filter					
Efficiency	TYP	83	85	87	87	87	%
Switching Frequency	TYP	400				kHz	
Input Surge Voltage (1000 ms)	MIN MAX	-0.7 50				VDC	
Recommended Fuse		1000 mA Slow - Blow Type				mA	
Model		48S2R5.3000EW	48S3R3.3000EW	48S5.2000EW	48S12.833EW	48S15.666EW	Units
Voltage Range	MIN TYP MAX	36.0 48.0 75.0				VDC	
Input Current	No Load Full Load	TYP TYP	10 188	10 243	10 239	10 240	mA
Reflected Ripple	TYP	40				mA	
Under Voltage Shutdown	MAX	34				VDC	
Reverse Polarity Input Current	MAX	0.5				A	
Input Filter		Pi Filter					
Efficiency	TYP	83	85	87	87	87	%
Switching Frequency	TYP	400				kHz	
Input Surge Voltage (1000 ms)	MIN MAX	-0.7 100				VDC	
Recommended Fuse		500 mA Slow - Blow Type				mA	

# 10 WATT EW SINGLE

Output Parameters							
Models		24S2R5.3000EW 48S2R5.3000EW	12S3R3.3000EW 24S3R3.3000EW 48S3R3.3000EW	12S5.2000EW 24S5.2000EW 48S5.2000EW	12S12.833EW 24S12.833EW 48S12.833EW	12S15.666EW 24S15.666EW 48S15.666EW	Units
Output Voltage		2.5	3.3	5	12	15	VDC
Output Current	MIN	300	300	200	83	66	mA
	MAX	3000	3000	2000	833	666	
Output Voltage Accuracy	TYP	±0.6					%
	MAX						
Load Regulation I <sub>o</sub> = 10% to 100%	TYP	±0.5					%
	MAX						
Line Regulation V <sub>in</sub> = Min. to Max.	TYP	±0.3					%
	MAX						
Ripple & Noise (20MHz)	TYP	50					mV P-P
	MAX						
Ripple & Noise (20MHz) Over Line, Load & Temp	MAX	100					mV P-P
Ripple & Noise (20MHz)	MAX	15					mV RMS
Transient Recovery Time, 25% Load Step Change	TYP	250					µs
	MAX						
Transient Response Deviation, 25% Load Step Change	TYP	±3					%
	MAX						
Temperature Coefficient	TYP	±0.01					% / °C
	MAX						
Short Circuit Protection		Continuous					

## Notes:

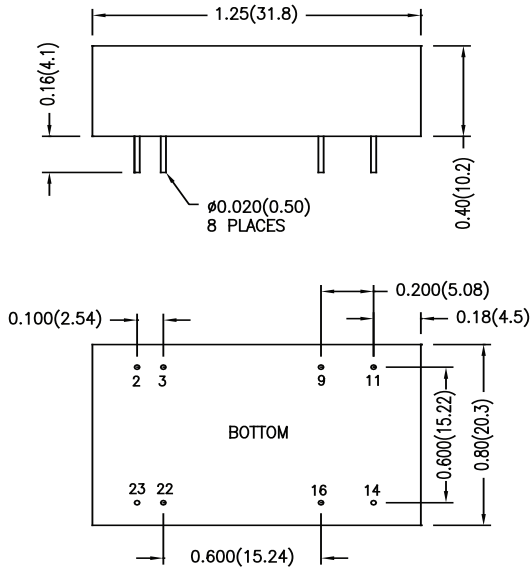
- All parameters measured at T<sub>c</sub>=+25°C, resistive load, nominal input voltage, full rated output current unless otherwise noted.
- Transient recovery time is measured to within 1% error band for a step change in output load 75% to 100%
- When measuring output ripple & noise, an external 0.1µF ceramic capacitor is recommended to be placed from +V<sub>out</sub> to -V<sub>out</sub>.
- Specifications subject to change without notice
- 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.
- RoHS Compliance means conformity to EU Directive 2002/95/EC of 27 January 2003, on the restriction of the use of certain hazardous substances in electrical and electronic equipment, lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyls, and polybrominated diphenyl ethers are not present in quantities exceeding the following maximum concentrations in any homogeneous material, except for applicable exemptions. 0.1% (by weight of homogeneous material) lead, mercury, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers, or 0.01% (by weight of homogeneous material) cadmium. The RoHS marking is as follows.



General Specifications			
All Models			Units
<b>Isolation</b>			
Isolation Voltage, 60 seconds	MIN	1500	VDC
Isolation Resistance, 500VDC	MIN	1000	Mohms
Isolation Capacitance, 100kHz, 1V	TYP	1000	pF
	MAX	1200	
<b>Environmental</b>			
Operating Temperature Case	MIN	-40	°C
	MAX	+90	
Storage Temperature	MIN	-40	°C
	MAX	+125	
Humidity	MAX	95	%
Cooling	Free-Air Convection		
<b>General</b>			
Case Size	1.25 x 0.80 x 0.40 inches 31.8 x 20.3 x 10.2 mm		
Case Material	Metal with Non-Conductive Baseplate		
Weight	17.3g		

# 10 WATT EW SINGLE

## Case Mechanical Dimensions inches (mm)



Pin	Name
2	-Vin
3	-Vin
9	No Pin
11	NC
14	+Vout
16	-Vout
22	+Vin
23	+Vin

TOLERANCE: ALL DIMENSIONS ARE TYPICAL IN INCHES (mm) UNLESS OTHERWISE NOTED:	
X.X	±0.01 (0.25)
X.XX	±0.005 (0.13)
PINS	±0.002 (0.05)

## Derating Curve

