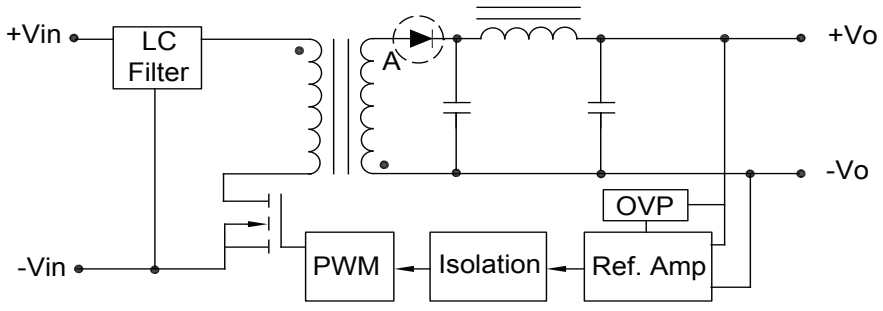
10 WATT EW SINGLE

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 Currrent	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	20 479	20 478	mA
Reflected Ripple	TYP	40					mA
Under Voltage Shutdown	MAX	17					VDC
Reverse Polarity Input Currrent	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	10 239	mA
Reflected Ripple	TYP	40					mA
Under Voltage Shutdown	MAX	34					VDC
Reverse Polarity Input Currrent	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 MAX	300 3000	300 3000	200 2000	83 833	66 666	mA
Output Voltage Accuracy	TYP MAX	±0.6 ±1.2					%
Load Regulation Io = 10% to 100%	TYP MAX	±0.5 ±1.2					%
Line Regulation Vin = Min. to Max.	TYP MAX	±0.3 ±1.0					%
Ripple & Noise (20MHz)	TYP MAX	50 85					mV P-P
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 MAX	250 500					µs
Transient Response Deviation, 25% Load Step Change	TYP MAX	±3 ±5					%
Temperature Coefficient	TYP MAX	±0.01 ±0.02					% / ºC
Short Circuit Protection		Continuous					

Notes:

(1) All parameters measured at Tc=+25ºC, resistive load, nominal input voltage, full rated output current unless otherwise noted.

(2) Transient recovery time is measured to within 1% error band for a step change in output load 75% to 100%

(3) When measuring output ripple & noise, an external 0.1µF ceramic capacitor is recommended to be placed from +Vout to -Vout.

(4) Specifications subject to change without notice

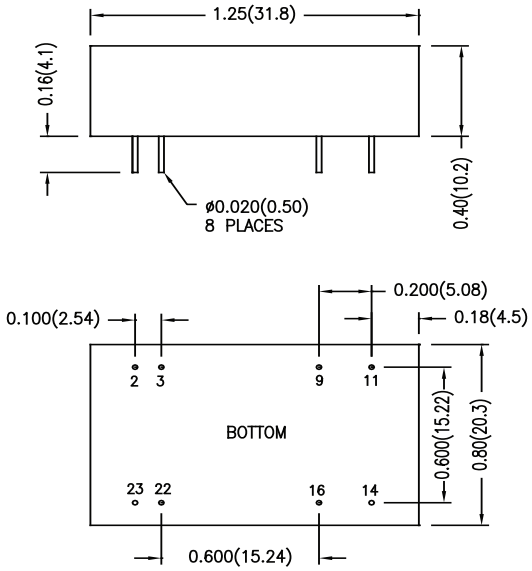
(5) Water Washability - Calex DC/DC converters are designed to withstand most solder/wash processes. Careful attention should be used when assessing the applicability in your specific manufacturing process. Converters are not hermetically sealed.

(6) 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.

Pb
RoHS

General Specifications			
All Models			**Units**
Isolation			
Isolation Voltage, 60 seconds	MIN	1500	VDC
Isolation Resistance, 500VDC	MIN	1000	Mohms
Isolation Capacitance, 100kHz, 1V	TYP MAX	1000 1200	pF
Environmental			
Operating Temperature Case	MIN MAX	-40 +90	ºC
Storage Temperature	MIN MAX	-40 +125	ºC
Humidity	MAX	95	%
Cooling		Free-Air Convection	
General			
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	

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