

ISOLATED DC/DC CONVERTERS

48 VDC Input 12 VDC/27 A Output, 1/4 Brick

bel
POWER PRODUCTS

ORCM-27S12L RoHS Compliant Rev.A

- Industry standard quarter-brick package
- Up to 300 W at 95% efficiency
- 1500 V isolation
- Safety Agency Approvals



Description

The ORCM-27S “Cimarron” Series are isolated DC/DC converters that operate from a nominal 48 VDC source. These converters use a full bridge power train to provide isolation and step down. These units will provide up to 300 W of output power from a nominal 48 VDC input. These units are designed to be highly efficient and low cost. Features include remote on/off, over current protection and under voltage lockout. These converters are provided in an industry standard quarter-brick package.

Part Selection

Output Voltage	Input Voltage	Max. Output Current	Max. Output Power	Typical Efficiency	Model Number
12 Vdc	48 Vdc	27 A	300 W	95%	ORCM-27S12L

- Notes:** 1. Add “G” suffix at the end of the model number to indicate Tray Packaging.
2. All part numbers above indicate RoHS 6. Change the second letter “R” to “7” for RoHS 5 part numbers.

Input Specifications

Parameter	Min	Typ	Max	Notes
Input Voltage Range	36 V	-	55 V	
Input Current (no load)	-	-	110 mA	
Input Current (full load)	-	-	6.82 A	
Reflected Ripple Current (rms)	-	-	50 mA	with a 12uH source inductor at nom. Vin and full load.
Reflected Ripple Current (pk-pk)	-	-	100 mA	
Under-voltage Lockout	Turn-on	-	35.8 V	-
	Turn off	-	33.8 V	-
Over-voltage Lockout	-	57.1 V	-	

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Output Specifications

Parameter	Min	Typ	Max	Notes
Output Voltage 36V _{in} 48V _{in} 55V _{in}	- - -	8.7 V 11.7 V 13.3 V	- - -	Setpoint at no load.
Output Current	0 A	-	27 A	
Output Power	-	-	300 W	
Load Regulation	-	-	0.4 V	
Ripple and Noise (pk-pk)	-	-	150 mV	0 to 20 MHz Bandwidth, use 1.0 uF ceramic cap and 100 uF/50mOhm tantalum on output
Load Capacitance	100 uF (50mohm)	-	3000 uF	
Transient Response Max deviation Recovery to within ± 1%	- -	150 mV 50 uS	250 mV 100 uS	di/dt = 0.1 A/uS, V _{in} = 48 V Ta = 25 °C, 25% load change.

General Specifications

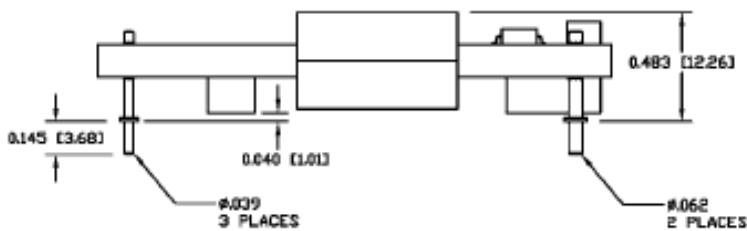
Parameter	Min	Typ	Max	Notes
Switching Frequency	-	96 kHz	-	fixed
Weight	-	TBD	-	
Operating Temperature	-40 °C	-	70 °C	
Non-Operating Temperature	-55 °C	-	125 °C	
Overtemp Shutdown	-	120 °C	-	10 °C hysteresis measured on Q4
Dimensions Inches (L × W × H) Millimeters (L × W × H)	2.28 x 1.45 x 0.50 57.9 x 36.8 x 12.7			
Protection Features Short circuit Over current Undervoltage Overvoltage	Latching 110% to 125% max I _o UVLO V _{in} < 35.0 OVSD V _{in} > 57.0			
Remote On/Off Active Low (Optional Active High) Turn on delay Output voltage rise time	0 V 1.0 V - -	- - 2.7 ms 4.3 ms	0.4 V 18 V - -	
Safety Agency Approvals (pending)	UL / cUL Recognized Certified to EN60950			

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Mechanical Drawing



Pin Connections

Pin	Function
1	+ Vin
2	Remote On/Off
3	- Vin
4	- Vout
5	+ Vout

RoHS Compliance

Complies with the European Directive 2002/95/EC, calling for the elimination of lead and other hazardous substances from electronic products.



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