

ISOLATED DC/DC CONVERTERS

48 VDC Input / 140 W Output , 1/8 Brick



0RCR "Cimarron" Series

RoHS Compliant

- Industry standard eighth-brick package
- Up to 140 W at 95% efficiency
- 1500 V Isolation
- Remote On/Off
- Low Cost

Description

The 0RCR "Cimarron" Series are isolated DC/DC converters that operate from a nominal 48 VDC source. These converters use a half bridge power train to provide isolation and step down. These units will provide up to 140 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 eighth-brick package.

Part Selection

Output Voltage	Input Voltage	Max. Output Current	Max. Output Power	Typical Efficiency	Model Number Active Low	Model Number Active High
8 V	48 V	18 A	140 W	95%	0RCR-18S08L	0RCR-18S08H
12 V	48 V	12 A	140 W	95%	0RCR-12S12L	0RCR-12S12H

- 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.

Absolute Maximum Ratings

Parameter	Min	Typ	Max	Notes
Input Voltage (continuous)	V	-	V	
Remote On/Off	0 V	-	60 V	
Operating Temperature	-40 °C	-	85 °C	
Non-Operating Temperature	-55 °C	-	125 °C	

Input Specifications

Parameter	Min	Typ	Max	Notes
Input Voltage	36 V	-	60 V	
Input Current (full load)	-	-	3 A	
Input Current (no load)	-	-	45 mA	
Input Reflected Ripple Current (pk-pk)	-	-	30 mA	Reflected ripple current through a 10uH source inductor at nominal input voltage and rated load current.
Input Reflected Ripple Current (rms)	-	-	10 mA	

Note: All specifications are typical at 25 °C unless otherwise stated.

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Output Specifications

Parameter	Min	Typ	Max	Notes
Output Voltage Set Point 0RCR-18S080 0RCR-12S120	- -	$V_{in} / 6$ $V_{in} / 4$	- -	Unregulated output will track input voltage with a 6:1 or 4:1 ratio.
Output Current 0RCR-18S080 0RCR-12S120	- -	- -	18 A 12 A	
Load Regulation 0RCR-18S080 0RCR-12S120	- -	0.5 V 0.7 V	- -	
Ripple and Noise (rms) 0RCR-18S080 0RCR-12S120	- -	- -	20 mV 40 mV	Test conditions: 0 to 20MHz Bandwidth Use 1.0uF ceramic cap and 15uF/100mOhm tantalum on output.
Ripple and Noise (pk-pk) 0RCR-18S080 0RCR-12S120	- -	- -	110 mV 150 mV	

Note: All specifications are typical at 25 °C unless otherwise stated.

General Specifications

Parameter	Min	Typ	Max	Notes
Efficiency	-	95%	-	$V_{in}=48\text{ V}$, $I_o=I_{omax}$
Switching Frequency 6:1 4:1	- -	200 kHz 150 kHz	- -	
Over Temperature Protection	-	°C	-	Average PCB temperature will not exceed 115 °C.
MTBF	2,569,594 hours			Calculated Per Bell Core SR-332 ($I_o = \text{Nominal}$; $T_a = 25\text{ °C}$)
Dimensions Inches (L x W x H) Millimeters (L x W x H)	2.30 x 0.9 x 0.39 58.4 x 22.8 x 9.8			
Weight	-	23 g	-	

Note: All specifications are typical at 25 °C unless otherwise stated.

Control Specifications

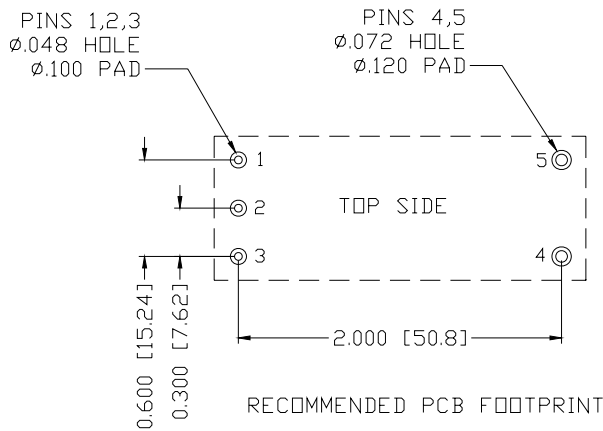
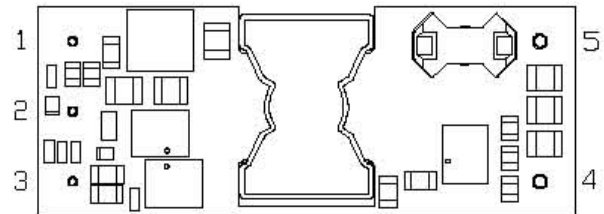
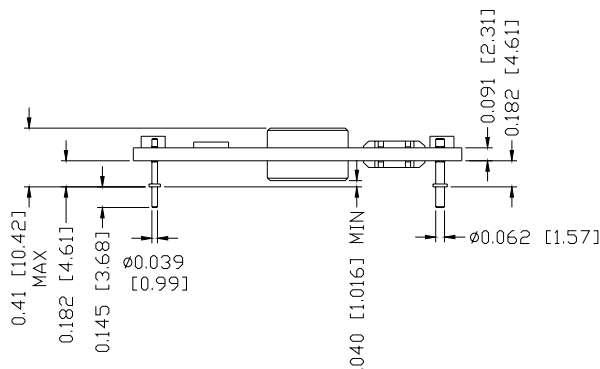
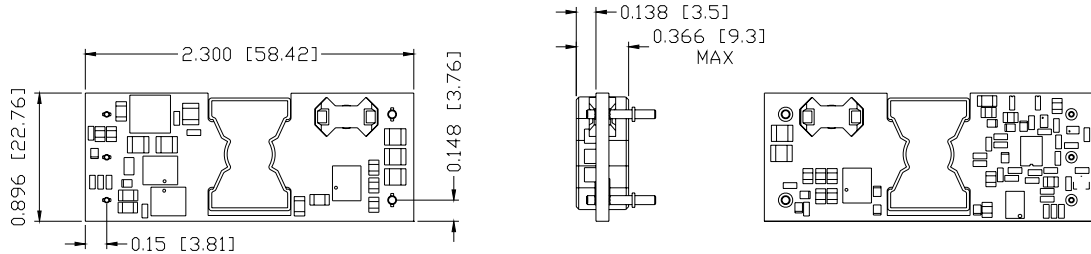
Parameter	Min	Typ	Max	Notes
Remote On/Off				
Signal Low (Unit On)	Active Low	0 V	-	The remote on/off pin open, Unit on.
Signal High (Unit Off)		2.5 V	-	
Signal Low (Unit Off)	Active High	0 V	-	The remote on/off pin open, Unit on.
Signal High (Unit On)		2.5 V	-	

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Mechanical Outline



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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