

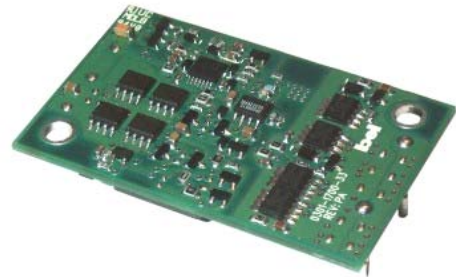
ISOLATED DC/DC CONVERTERS

48 VDC Input 12 VDC/20 A Output, 1/4 Brick

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POWER PRODUCTS

ORCM-20S/30S Series RoHS Compliant PRELIMINARY

- Industry standard quarter-brick package
- Up to 240 W at 96% efficiency
- 1500 V isolation
- Remote on/off
- Low cost
- Safety Agency Approvals



Description

The ORCM-20S/30S "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 240 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 V	48 V	20 A	240 W	96%	ORCM-20S12L
8 V	48 V	30 A	240 W	96%	ORCM-30S08L

- Notes:** 1. Change last character in part number from "L" to "H" for Active High On/Off Logic (e.g. ORCM-20S12H).
2. Add "G" suffix at the end of the model number to indicate Tray Packaging.
3. 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	48 V	55 V	
Input Current (no load)	-	-	80 mA	
Input Current (full load)	-	-	5.3 A	
Reflected Ripple Current(pk-pk)	-	-	100 mA	Reflected ripple current through a 12 uH source inductor at nominal input voltage and rated load current.
Reflected Ripple Current(rms)	-	-	50 mA	

Output Specifications

Parameter	Min	Typ	Max	Notes
Output Voltage	$\frac{36 V_{in}}{8.8 V}$ 8.8 V	$\frac{48 V_{in}}{12.0 V}$ 12.0 V	$\frac{55 V_{in}}{14.0 V}$ 14.0 V	Setpoint at no load.
	5.8 V	8.0 V	9.4 V	
Output Current	0 A	-	20 A	
	0 A	-	30 A	
Load Regulation	-	-	5%	
Ripple and Noise (pk-pk)	-	-	100 mV	0 to 20 MHz BW, use 1.0 uF ceramic cap and 15 uF/100 m ohm tantalum cap at the output.
Ripple and Noise (rms)	-	-	45 mV	

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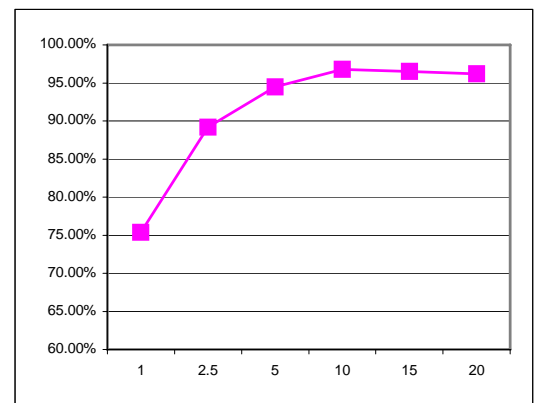
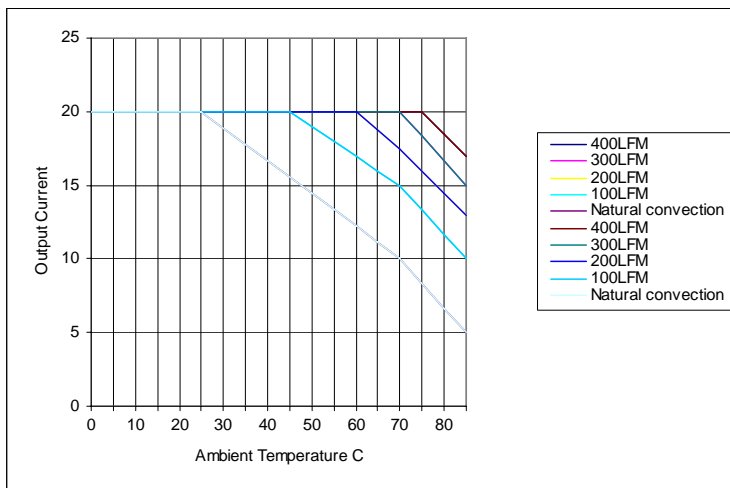


Output Specifications (continued)

Parameter	Min	Typ	Max	Notes
Transient Response				
Max deviation	-	200 mV	350 mV	di/dt = 0.1 A/uS, Vin = 48 V Ta = 25 °C, 25% load change.
Recovery to within ± 1%	-	50 uS	100 uS	

General Specifications

Parameter	Min	Typ	Max	Notes
Switching Frequency	-	120 kHz	-	
Operating Temperature	0 °C	-	70 °C	
Non-Operating Temperature	-55 °C	-	125 °C	
Weight	-	42 g (1.5 oz)	-	
MTBF (MIL-HDBK-217K)	>1,000,000 hours			
Dimensions				
Inches (L × W × H)	2.28 x 1.45 x 0.50			
Millimeters (L × W × H)	57.9 x 36.8 x 12.7			
Protection Features				
Short circuit	Continuous			
Over current	120% to 140% max Io			
Under-voltage	UVLO Vin < 39.0			
Remote On/Off				
Active Low	0 V	-	0.8 V	
(Optional Active High)	2.4 V	-	18 V	
Safety Agency Approvals (pending)	UL / cUL Recognized Certified to EN60950			



Efficiency vs. Output Current (A)

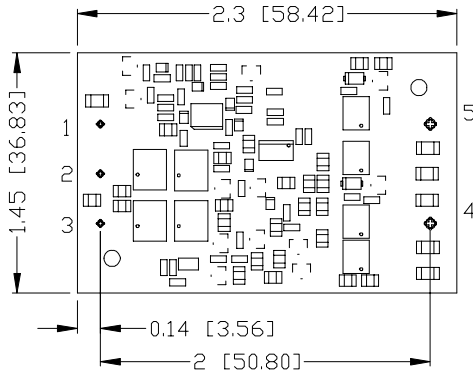
air flowing from input to output (nominal input voltage).

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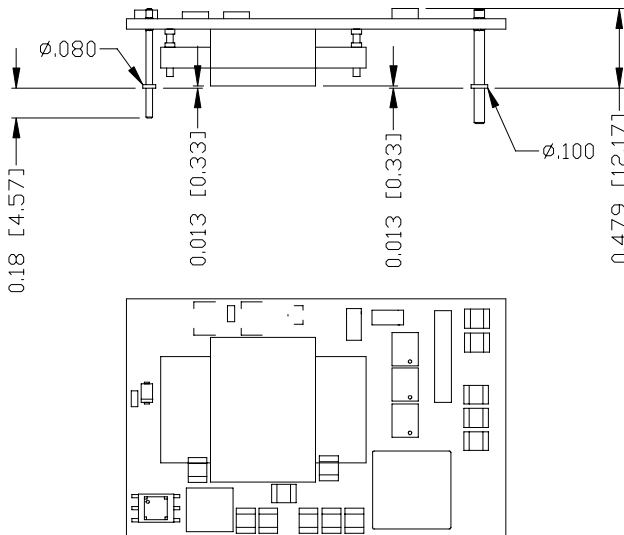
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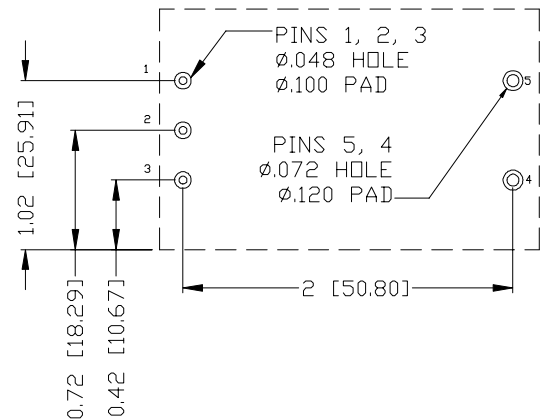
Mechanical drawing



PIN ASSIGNMENTS	PIN DIAMETER
1 +VIN	.039
2 ON/OFF	.039
3 -VIN	.039
4 -VOUT	.062
5 +VOUT	.062



RECOMMENDED PCB FOOTPRINT



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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