

ISOLATED DC/DC CONVERTERS

48 VDC Input 9.4 VDC/36 A Output, 1/4 Brick

bel
POWER PRODUCTS

0RCM-36S10L RoHS Compliant

- Industry standard quarter-brick package
- Up to 300 W at 96% efficiency
- 1500 V isolation
- Safety Agency Approvals



Description

The 0RCM-36S “Cimarron” Series are isolated DC/DC converters that operate from a nominal 48 V DC 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 54 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
9.4 V	48 V	36 A	300 W	96%	0RCM-36S10L

- 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	48 V	55 V	
Input Current (no load)	-	-	120 mA	
Input Current (full load)	-	-	7.2 A	
Reflected Ripple Current (rms)	-	-	200 mA	See figure 1 for measurement technique
Under-voltage Lockout				
Turn-on	-	35.3 V	-	
Turn off	-	34.0 V	-	
Over-voltage Lockout	-	57.1 V	-	

Output Specifications

Parameter	Min	Typ	Max	Notes
Output Voltage				
36V _{in}	-	7.1 V	-	Setpoint at no load.
48V _{in}	-	9.4 V	-	
55V _{in}	-	10.8 V	-	
Output Current	0 A	-	36 A	
Output Power	-	-	300 W	
Load Regulation	-	-	0.4 V	
Ripple and Noise (pk-pk)	-	-	175 mV	0 to 20MHz BW, use 4 x 22 uF ceramic caps on output
Load Capacitance	88 uF	-	3000 uF	

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Output Specifications (continued)

Parameter	Min	Typ	Max	Notes
Transient Response				
Max deviation	-	150 mV	250 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	-	128 kHz	-	fixed
Operating Temperature	-40 °C	-	85 °C	
Non-Operating Temperature	-55 °C	-	125 °C	
Weight	-	TBD	-	
Overtemp Shutdown	-	135 °C	-	10 °C hysteresis, measured on Q4
Dimensions				
Inches (L × W × H)		2.28 x 1.45 x .477		
Millimeters (L × W × H)		57.9 x 36.8 x 12.1		
Protection Features				
Short circuit		UVLO Vin < 35.0		
Over current		OVSD Vin > 57.0		
Undervoltage		Latching		
Overvoltage		110% to 125% max Io		
Remote On/Off				
Active Low	0 V	-	0.4 V	
Active High	2.0 V	-	20 V	
Turn on delay	-	3.0 ms	-	
Output voltage rise time	-	5.0 ms	-	
Safety Agency Approvals (pending)	UL / cUL Recognized Certified to EN60950			

Derating @ 38VDC Input

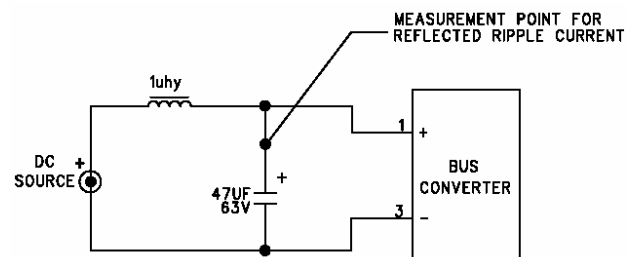
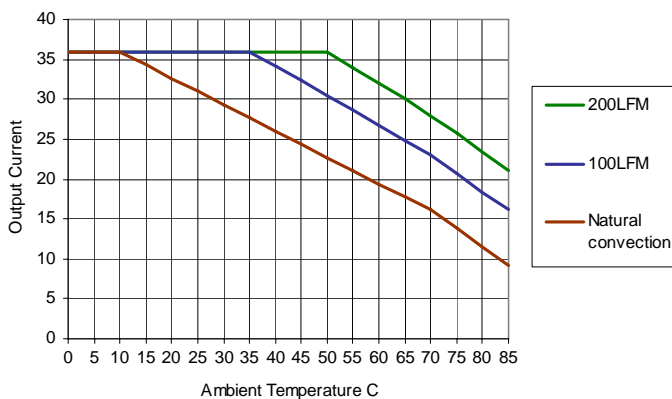


Figure 1: Measurement circuit for reflected ripple current.

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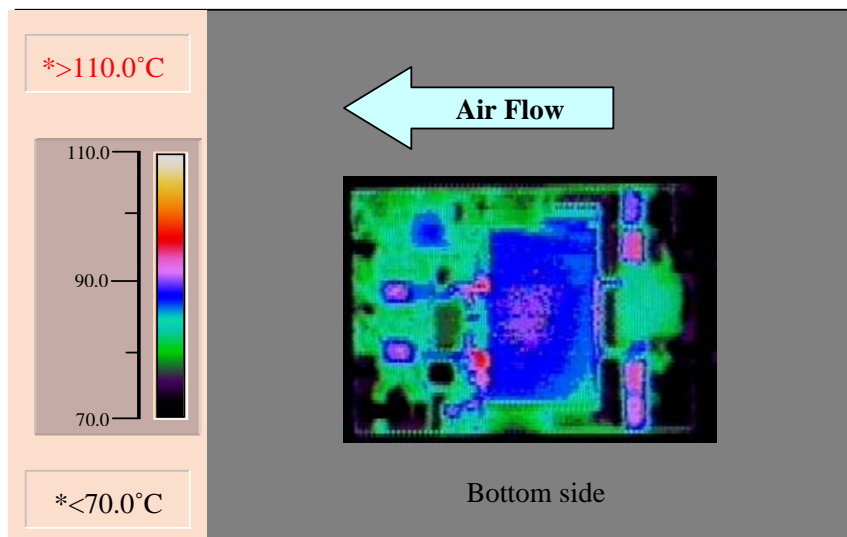
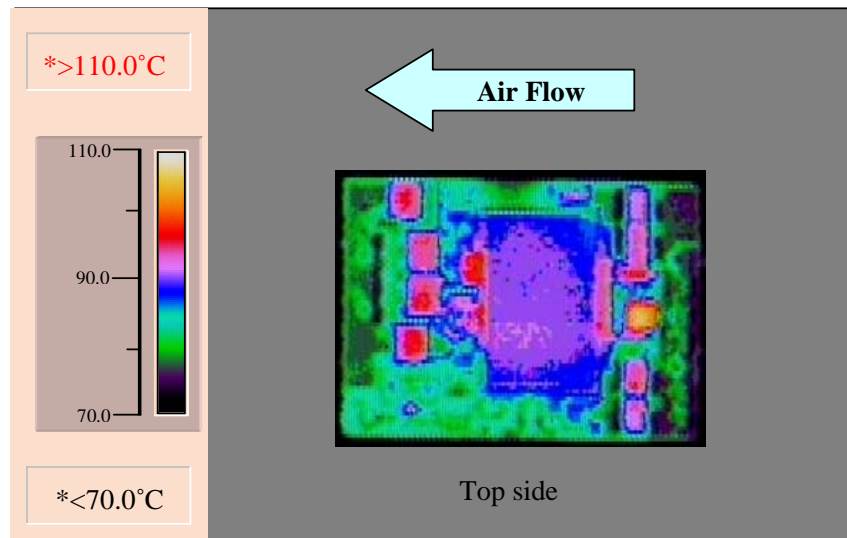
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POWER PRODUCTS

Thermal Images

Test Conditions:

Input Voltage: 39 V
Output current: 32 A
Output power: 240 W
Airflow: 200 lfm
Ambient: 55 C

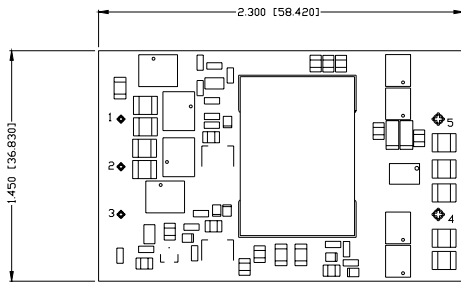


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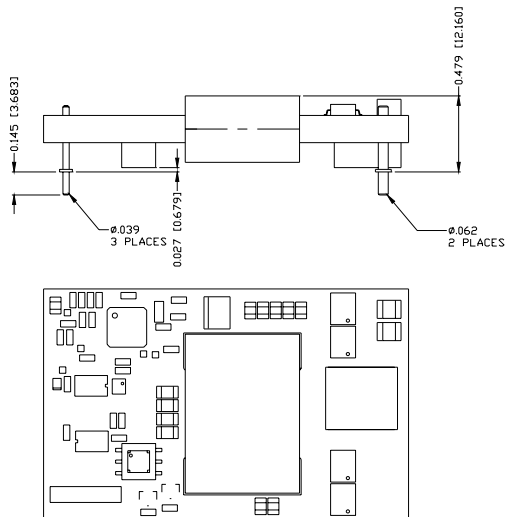
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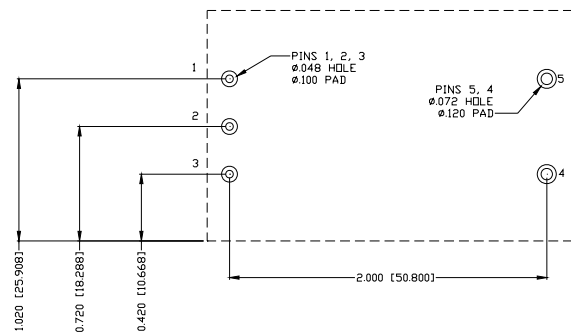
Mechanical Drawing



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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