

1008W Isolated Quarter Brick DC-DC Converter



Test



COMM



Broadcast

The iQK series of isolated DC-DC converters provide a fully regulated 11.2V output. Rated at 1008W, the quarter brick sized module can deliver up to 90A output current. Its 48 to 56Vdc input range is suitable for use with regulated 48V front end supplies, primarily employed in computing, server and data communications applications. Featuring a high efficiency of up to 97%, it is ideal for use in distributed power architectures.

Features	Benefits
• 1008W in a Quarter Brick Footprint	• High Power Density, Less Board Area Needed
• High Efficiency - Up to 97%	• Lower Dissipated Power
• Baseplate Cooled	• Suitable for Cold plate or Heatsink Mounting
• Constant Switching Frequency	• Simplified EMI Filtering
• Optional Droop Current Share	• Easier to Connect in Parallel

Model Selector							
Model	Input Voltage(1) (V)	Output Voltage (V)	Max Current (A)	Max Power (W)	Efficiency (%)	Droop Load Share	Integrated Baseplate
iQK4N090A112V-1U9-R	48 - 56	11.2	90	1008	96%	Yes	Yes
iQK4N090A112V-1V9-R	48 - 56	11.2	90	1008	96%	No	Yes

Preferred Model

Notes

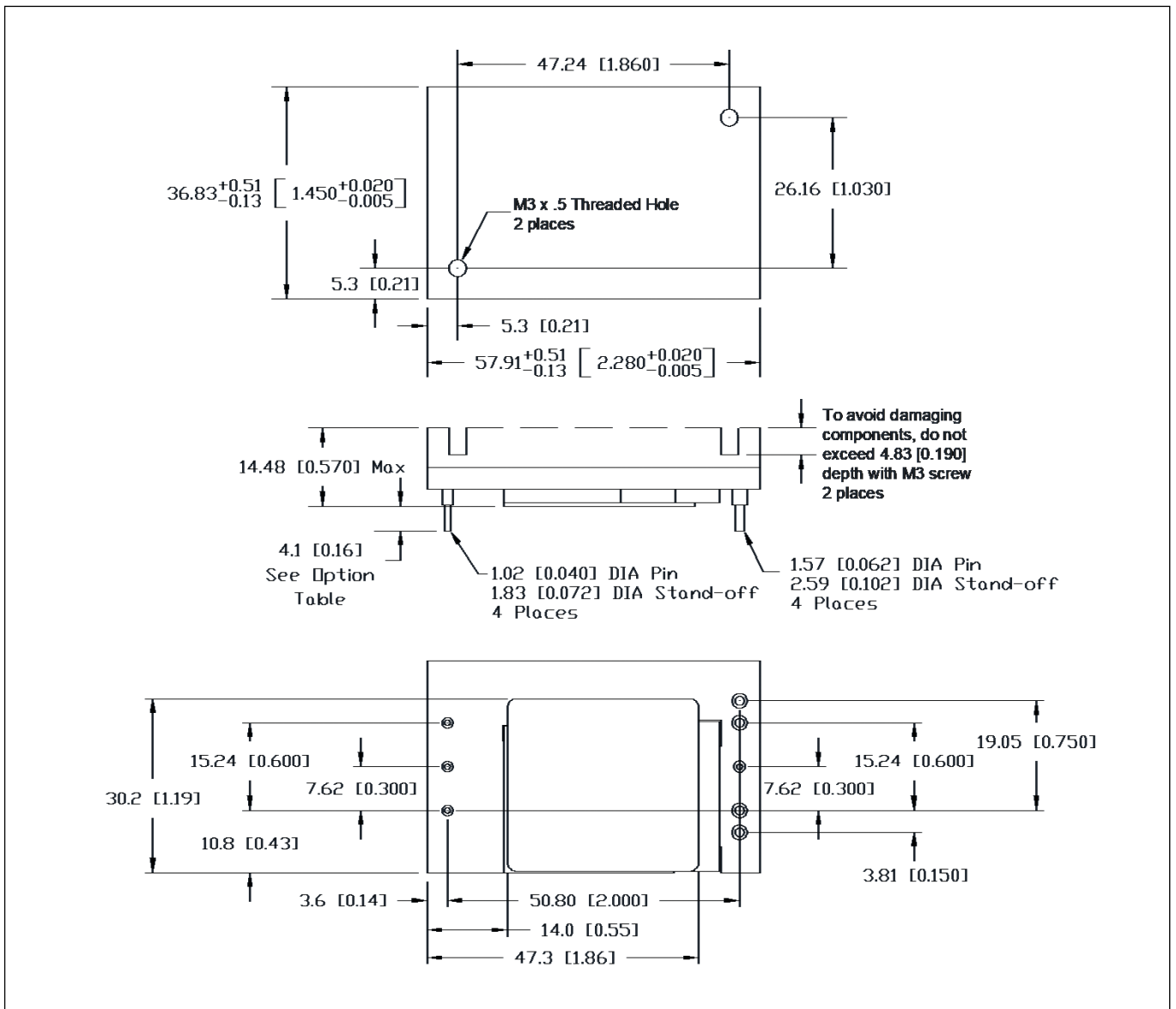
(1) Operation down to 45V input is possible. Output voltage will decrease as the load current increases.

Specification		
Model	iQK	
Input		
Input Voltage Range	Vdc	48 - 56 (Operation down to 45V with increased output regulation)
Input Transient (max)	Vdc	80 (100 ms)
Input Current (max)	A	22.5
Turn-on Voltage (typ)	Vdc	46.3
Turn-off Voltage (typ)	Vdc	43.6
Hysteresis	Vdc	2.7
Efficiency (750 W)	%	97
Efficiency (1008 W)	%	96.5
Safety Agency Certifications	-	IEC/UL/CSA/EN62368-1, 60950-1, CE Mark
Output		
Output Voltage Initial Setpoint	%	± 1 (Nominal input voltage, no load)
Output Voltage Tolerance	%	± 2 (Across rated input and temperature range)
Output Voltage Adjustment Range	-	None
Switching Frequency	kHz	132
Line Regulation (Io = 50%)	mV	30
Load Regulation	mV/A	30
Load Share Accuracy (1U9-R)	%	± 10
External Load Capacitance	uF	1600 - 8000 (ESR > 2 mΩ)
Ripple & Noise (typ)	mVpp	170
Overcurrent Protection Threshold (typ)	A	92 - 99 (Non-Latching)
Overtemperature Protection	-	Yes
Over Voltage Protection	V	12.9 - 14.0 (Latching)
Remote Sense	-	None
Remote On/Off	-	Negative Logic
Power Good	-	Open-Drain, Active Low
Environmental		
Operating Baseplate Temperature (Tc)	°C	-40 to 119
Storage Temperature	°C	-55 to 125
Humidity (non condensing)	%RH	5 - 95 (Operating & Storage)
Cooling	-	Convection, conduction (baseplate) or forced air
Isolation Voltage (max)	Vdc	707 (Input to Output)
Isolation Capacitance	pF	700
Isolation Resistance	MΩ	> 15
Other		
Weight (max)	g	90
Size (LxWxH)	mm	57.91 x 36.83 x 14.48
Size (LxWxH)	Inches	2.28 x 1.45 x 0.57
MTBF - Telcordia SR-332	Hours	> 2,700,000 (Nominal Input, 100% Load, 40 °C ambient)
Warranty	yrs	3

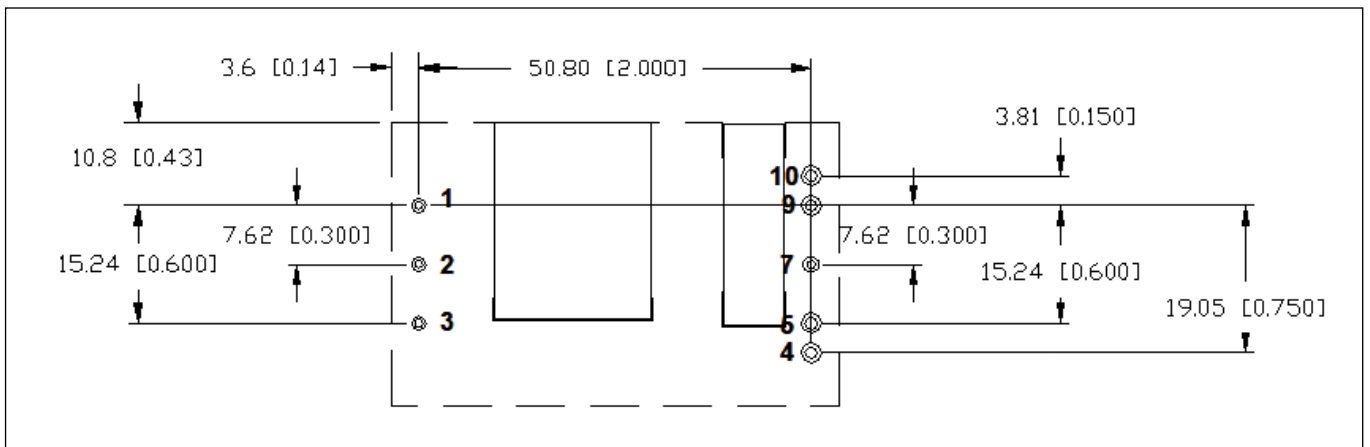
Notes

See website for detailed [specifications](#).

Outline Drawing



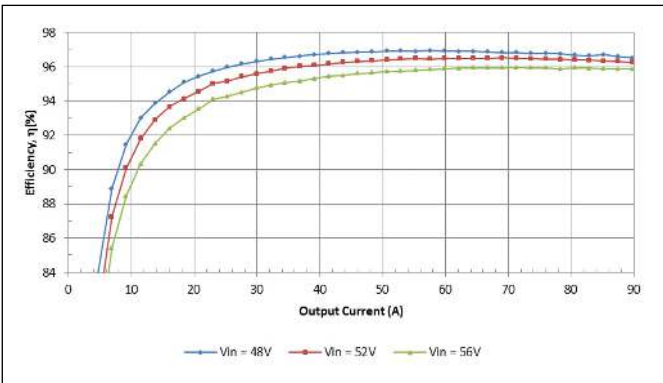
Recommended Hole Pattern (Top View)



Pinout			
PIN	Function	PIN	Function
1	Vin (+)	6	N/A
2	On/Off	7	Power Good
3	Vin (-)	8	N/A
4	Vout (-)	9	Vout (+)
5	Vout (-)	10	Vout (+)

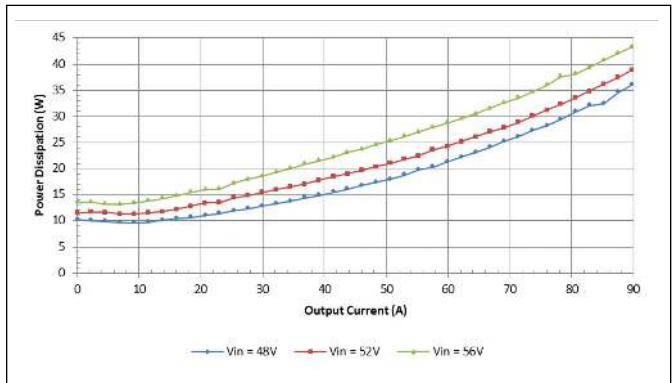
Pin base material is copper with gold plating. The maximum module weight is 90g.

Efficiency Curve



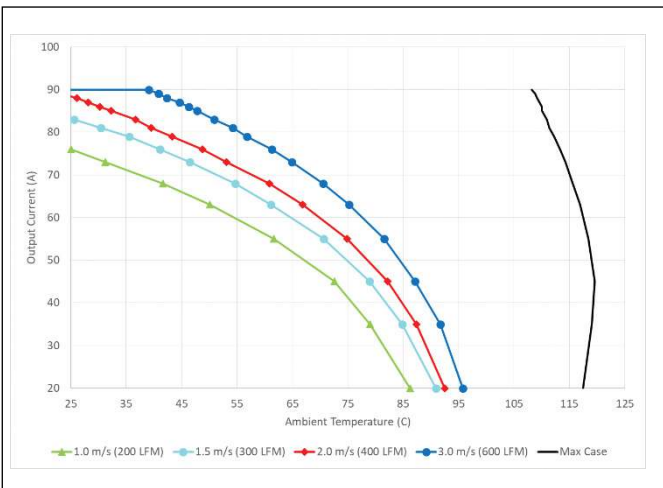
Typical Efficiency vs. Vin and Iout (no Droop).

Power Dissipation



Power Dissipation vs. Vin and Iout (no Droop).

Thermal Derating



Output current vs. ambient temperature curves @ nominal input voltage, airflow direction from pin 3 to pin 1.



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