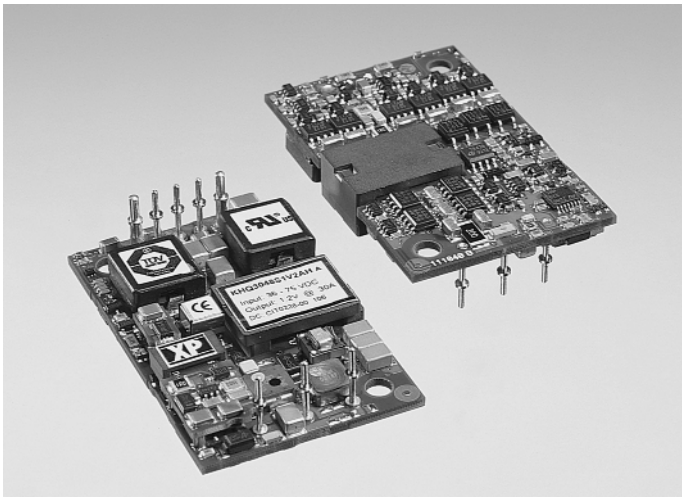
Quarter Brick DC/DC Converters

30 Amps
KHQ030 Series

XPiQ inc.
Intelligent Design Quality Product



Low Voltage Outputs
•
High Power Density
•
Efficiency 91% for 3.3V/30 A
•
ETS 300-321-2 Isolation
•
International Safety Approvals
•
Fixed Switching Frequency
•
Low Profile

Specification

Input

Input Voltage Range	•	*36-75 VDC*
Input Current	•	*See Table*
Input Reflected Ripple Current	•	*20 mA pk-pk*
Remote ON/OFF	•	*Shorted to -Vin (Logic Low) = ON Open (Logic high) = OFF Negative logic is standard, Positive logic is available (See Note 3)*
Input Reverse Voltage Protection	•	*External components required (See Note 4)*
Input Transient	•	*100 V for 100 ms*
Undervoltage Lockout	•	*Above 32 to 34 VDC = ON Below 30 to 32.2 VDC = OFF*

Output

Output Voltage	•	*1.2 VDC to 3.3 VDC*
Output Voltage Adjustment	•	*±10%*
Minimum Load	•	*No minimum load required*
Line Regulation	•	*±0.5% (36-75 VDC; full load)*
Load Regulation	•	*±0.5%*
Output Voltage Accuracy	•	*±50 mV*
Ripple & Noise	•	*100 mV pk-pk, 20 MHz bandwidth*
Transient Response	•	*3% max deviation, 100 µs recovery time for a 25% step load change*
Temperature Coefficent	•	*0.01%/°C*
Remote Sense	•	*Compensates for drop of up to 10% of output*
Overvoltage Protection	•	*120%-130%, recycle input to reset*
Overcurrent Protection	•	*110-135% auto restart*
Short Circuit Protection	•	*Protected from short circuit conditions, hiccup mode*
Overtemperature Protection	•	*Shutdown at 110 °C (measured on board), auto restart*

General

Efficiency	•	*See Table*
Isolation	•	*1500 VDC Input to Output*
Size	•	*2.280" x 1.450" x 0.417" (0.5" with baseplate)*
Switching Frequency	•	*330-350 kHz*
Weight	•	*35 g for open frame version 65 g for baseplate version*
MTBF	•	*2,000,000 hours calculated to Bellcore*

Environmental

Operating Temperature	•	*-40 ° C to +85 °C ambient with derating, full power to +50 °C with 200 LFM*
Storage Temperature	•	*-55 °C to +125 °C*
Cooling	•	*Convection cooled or forced air (See Derating Curve)*
Humidity	•	*5-95% RH non-condensing*

EMC & Safety

Safety Approvals	•	*UL 60950, IEC 60950, CSA 60950 per cUL, CE Marked for LVD*
EMI/EMC	•	*FCC level B Part 15 with external filtering (See Note)*

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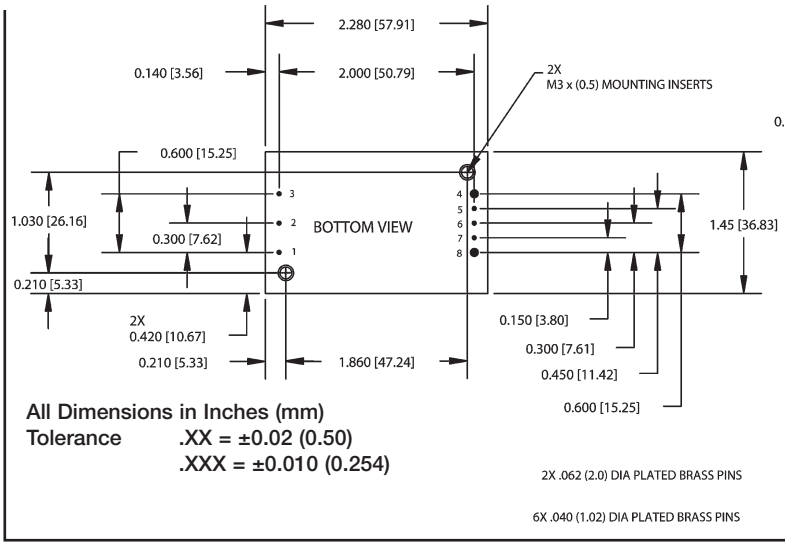
OUTPUT VOLTAGE & CURRENT RATINGS — KHQ030

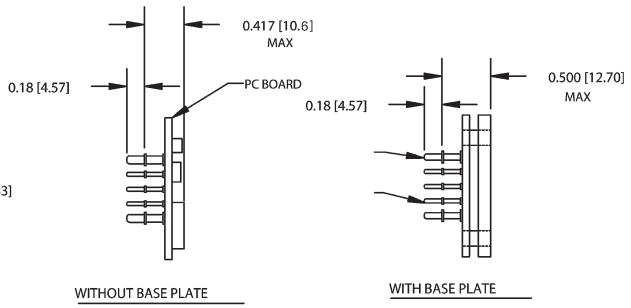
Output Power	Output Voltage	Output Current Maximum	Efficiency	Input Current	Model Number[3]
36 W	1.2 V	30 A	82%	0.92 A	KHQ03048S1V2
45 W	1.5 V	30 A	85%	1.11 A	KHQ03048S1V5
54 W	1.8 V	30 A	87%	1.30 A	KHQ03048S1V8
75 W	2.5 V	30 A	89%	1.80 A	KHQ03048S2V5
100 W	3.3 V	30 A	91%	2.29 A	KHQ03048S3V3

Notes

1. *Standard product is open frame with negative logic.*
2. *Baseplate versions are built to order.*
3. *Please add one of the following suffix code to the part number when ordering:*
   AL = Open Frame/Negative logic, AH = Open Frame/Positive logic, BL = Baseplate/Negative logic, BH = Baseplate/Positive logic.
4. *For input reverse voltage protection, use a parallel diode across the input terminals preceded by a 5 A fuse.*
5. *For details of external filtering, contact Technical Sales.*

Mechanical Details





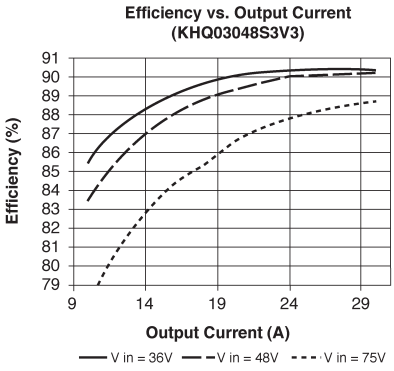
All Dimensions in Inches (mm)
Tolerance .XX = ±0.02 (0.50)
.XXX = ±0.010 (0.254)

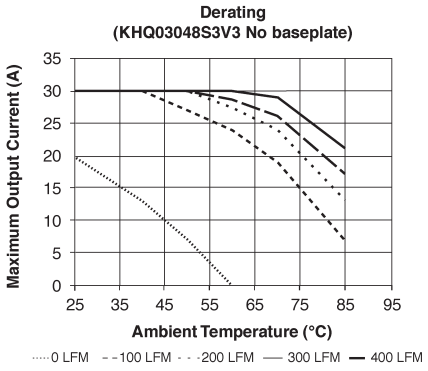
2X .062 (2.0) DIA PLATED BRASS PINS

6X .040 (1.02) DIA PLATED BRASS PINS

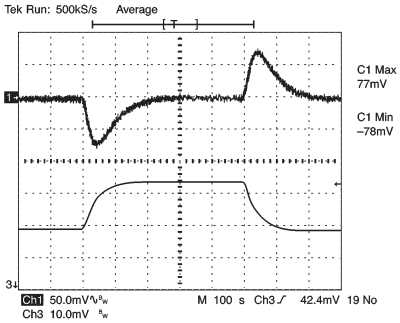
Pin Connections			
Pin	Function	Pin	Function
1	+Input	5	-Sense
2	On/Off	6	Trim
3	-Input	7	+Sense
4	-Output	8	+Output

Derating Curves

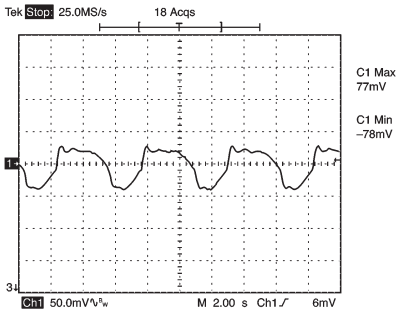




(3.3 V) Transient Response
Load Step 50% to 75% of 1 out



(3.3 V) Output Ripple & Noise at full load



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