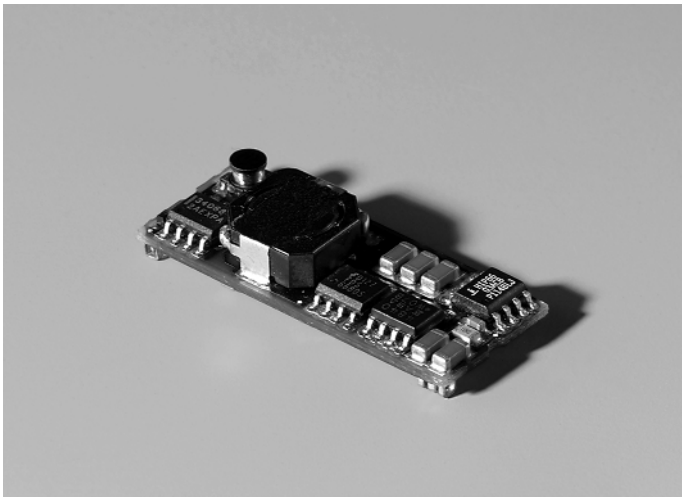
Non-Isolated DC/DC Converters

6 Amps
JWC006-L Series

XPiQ inc.
Intelligent Design Quality Product



- High Efficiency
- Small Footprint
- Parallelable/Current Sharing
- Single Control Pin
- Safety Approvals UL, cUL, TÜV
- Surface Mount

Specification

Input

Input Voltage Range	*3.3 V (3.0 V to 3.6 V) or 5.0 V (4.5 V to 5.5 V)*
Input Current	*5.5 A at 3.3 V, 5.0 A at 5.0 V*
Start-Up Time	*<10 ms*
Remote On/Off	*Open (logic high) = ON, Ground (logic low) = OFF*
Input Reflected Ripple (V)	*<250 mV pk-pk*
Input Reflected Ripple (I)	*100 mA pk-pk*

Output

Output Voltage Range	*1.5 V to 3.3 V - See Table*
Output Voltage Adj.	*±10%*
Line Regulation	*See Tables*
Load Regulation	*See Tables*
Output Voltage Accuracy	*See Tables*
Ripple & Noise	*100 mV pk-pk max for 5.0 V in, 80 mV pk-pk max for 3.3 V in*
Transient Response	*Max deviation of ±10% of Vout settling to within 90% nominal in <50 µs for 3 A step load change*
Overcurrent Protection	*Operates at 7.5 to 10.0 A*
Short Circuit Protection	*Operates in Hiccup mode*

General

Efficiency	*See Table*
Isolation Voltage	*Non-Isolated*
Size	*1.300" x 0.530" x 0.248"*
Weight	*3.9 g*
MTBF	*1,500 000 hours calculated to Bellcore*

Environmental

Operating Temperature	*0 °C to +80 °C (See Derating Chart) full power to +40°C*
Cooling	*See derating curve*

EMC & Safety

Safety Approvals	*Approved to UL 60950, IEC 60950 and CSA 60950*

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OUTPUT VOLTAGE & CURRENT RATINGS — JWC006-L

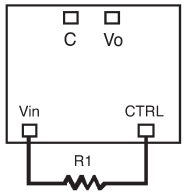
Input Voltage	Output Voltage[1]			Output Current		Efficiency	Model Number
	Minimum	Nominal[1]	Maximum	Minimum	Maximum		
3.3 V	1.455 V	1.5 V	1.545 V	0.0 A	6.0 A	80%	JWC00603S1V5-L
	1.746 V	1.8 V	1.854 V			83%	JWC00603S1V8-L
	1.940 V	2.0 V	2.060 V			85%	JWC00603S2V0-L
	2.425 V	2.5 V	2.575 V			88%	JWC00603S2V5-L
5.0 V	1.455 V	1.5 V	1.545 V	0.0 A	6.0 A	80%	JWC00605S1V5-L
	1.746 V	1.8 V	1.854 V			82%	JWC00605S1V8-L
	1.940 V	2.0 V	2.060 V			84%	JWC00605S2V0-L
	2.425 V	2.5 V	2.575 V			88%	JWC00605S2V5-L
	3.200 V	3.3 V	3.400 V			91%	JWC00605S3V3-L

Notes

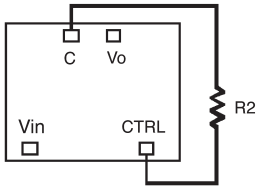
1. Output voltage includes initial setting, input voltage variation, load variation and temperature variation.
2. For parallel operation (4 units max), connect each control pin together but care must be taken to ensure each trace resistance to the load is approximately the same.

Output Trimming

To trim up:



To trim down:



Note: Resistor values R1 and R2 are in kΩ.

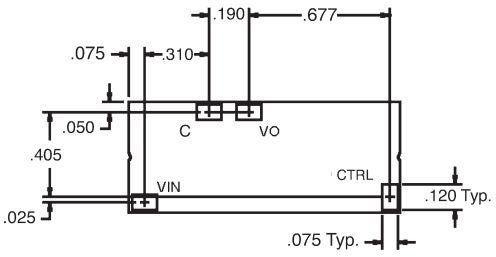
$$R1 = \left[\frac{1}{\frac{Vo\ HIGH}{Vo\ NOM} - 1}\right] \times \left[\frac{Vin}{1.5}\right] - 1\ (k\Omega)$$

$$R2 = \left[\frac{Vo\ LOW/Vo\ NOM}{1 - \frac{Vo\ LOW}{Vo\ NOM}}\right] (k\Omega)$$

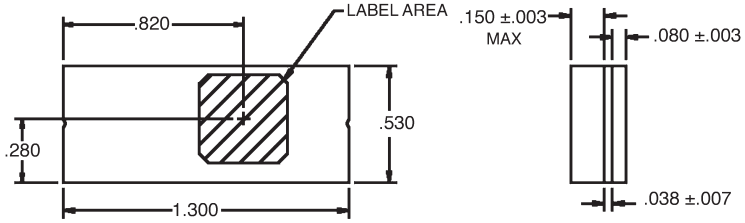
Safety Approvals

These modules are approved to UL60950 3rd edition, CSA60950 3rd edition and IEC60950. These modules are not provided with an internal fusing. To achieve maximum safety and system protection always use an input line fuse. It is recommended to use a maximum 10 A normal blow fuse on the ungrounded lead.

Mechanical Details

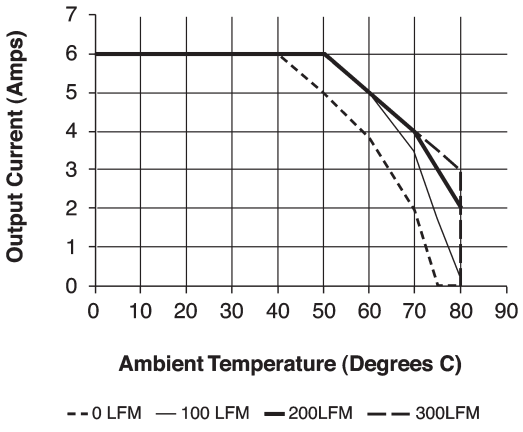


Bottom View of Board
(Mating side)



Top View of Board

Derating Curve JWC00605S3V3-L



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