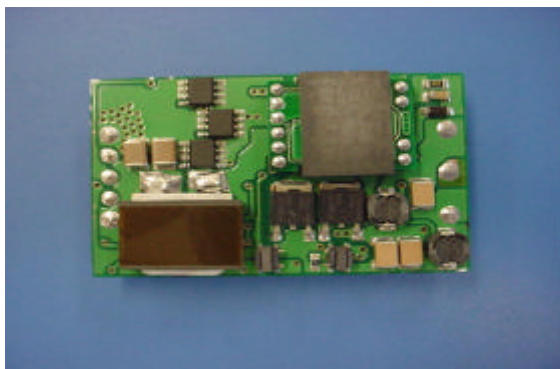




The HBQ SERIES is a new line of isolated DC/DC converters in the industry standard quarter brick format.

Shindengen's design offers high efficiency (up to 91%) and excellent reliability. Typical applications include:

48V TELECOM
NETWORKING
DATACOM

FEATURES

3.3v and 5.0v output voltage
Up to 30A output current
Quarter brick size (2.3" x 1.45")
Up to 91% efficiency
100 Watts
Safety Approvals - UL/C-UL 60950
- TUV EN60950

MODEL NUMBER DETAIL

Ex: [H B Q 3 R 3 3 0 0 N]
 ① ② ③ ④ ⑤

- ① "HB" = DC/DC part number within Shindengen
- ② "Q" = Quarter brick
- ③ "3R3" = 3.3V output (ex: "5R0" = 5.0V)
- ④ "300" = 30.0A (ex: "200" = 20.0A)
- ⑤ "N" = Negative logic for on/off control (ex: "P" = positive logic for on/off control)

ELECTRICAL CHARACTERISTICS

SPECIFICATION	MARK	HBQ3.3V30A	HBQ5V20A	REMARKS
Operating Input Voltage Range	Vi	36-75 (48 Typical)		
Maximum Input Current	Iimax	3.5A		
Inrush Current Transient Rating	I2t	.01A2s		
Input Reflected-Ripple Current	Ii	10mA		Requires external input filter
Input Voltage Ripple Rejection		(82dB)		
Output Voltage		3.3V	5.0V	
Output Voltage Set Point	Vo set	3.267V min 3.3V typical 3.333V max.	4.95V Min. 5.00 typical 5.05V max.	
Total Output Voltage Range		3.2V min 3.4V max	4.85V min 5.15V max	
Output Voltage Regulation				
Over Line		+/- 2 mV min. +/-5 mV max.	-/-2 mV min. +/-10 mV max	
Over Load		+/- 2 mV min. +/-7 mV max.	-/-2 mV min. +/-10 mV max	
Over Temperature		+/-20 mV min. +/-50 mV max.	+/-30mV min +/-75 mV max	
Output Voltage Ripple and Noise		50mV p-p 100mV p-p		1uF Ceramic Capacitor 10uF Tantalum Capacitor (ESR=100M ohm) 20Mhz
Output Current (Max)		30A	20A	
Output DC Current-Limited Inception		31A min. 36A typical 39A max.	21A min. 24A typical 26A max.	Vo=90% Vo nominal
Efficiency		90%	91%	Ta=25 deg. C, Vi=48v, Io=max
Switching Frequency		330kHz	400kHz	
Dynamic Response Output Voltage Current Transient				Delta Io/delta t=5A/1us Load Capacity: 470uF
Load Change from 50% Io to 75% Io		200mV	200mV	
Setting Time		400us	300us	
Load Change from 75%Io to 50% Io		200mV	200mV	
Setting Time		400us	300us	
EMI Class based on FCC part 15 subpart B with external filter				

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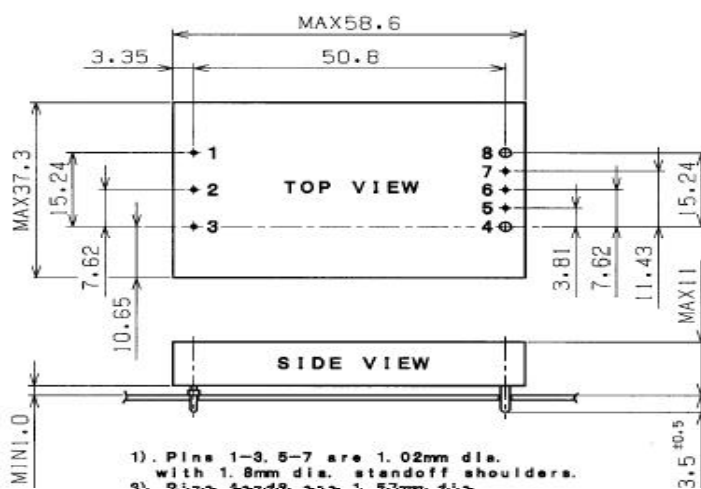
ISOLATION CHARACTERISTICS

SPECIFICATION	MARK	HBQ3.3V30A	HBQ5V20A	REMARKS
Isolation Voltage		1500V		
Isolation Resistance		10 M ohm		
Isolation Capacitance	li	5000pf		

FEATURE CHARACTERISTICS

SPECIFICATION	MARK	HBQ3.3V30A	HBQ5V20A	REMARKS
Remote Control				
On/Off Control—On-State Control	V/off	0-1.2V		
	I/off	1.0mA		
On/Off Control—Off-State Control	V/on	15V		
	I/on	50uA		
Turn-on Time		15ms max	8ms max	10%Vo to 90% Vo Io=100%Io
Output Voltage Adjustment				
Output Voltage Remote Sense Range		.5V		
Output Voltage Trim Range		90-110%		%Vo, nom.
Output Over-Voltage Protection		3.96Vmin. 4.62V max.	6.0Vmin. 7.0V max.	
Over-Temperature Shutdown		115 deg. C		
Operating Temperature Range: -40 to 85 degrees C				

DIMENSIONS



Pin No.	Name	Function
1	Vin (+)	Positive input voltage
2	ON/OFF	TTL input to turn converter on and off, referenced to Vin (-) , with internal pull up.
3	Vin (-)	Negative input voltage
4	Vout (-)	Negative output voltage
5	SENSE (-)	Negative remote sense ¹
6	TRIM	Output voltage trim ²
7	SENSE (+)	Positive remote sense ³
8	Vout (+)	Positive output voltage

Notes:

- Pin5 must be connected to Vout (-) at load.
- Leave Pin6 open for normal output voltage.
- Pin7 must be connected to Vout (+) at load.

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