

## Quarter-Brick Series

### 2nd Generation IBC

**Total Power:** 336 - 450W  
**Input Voltage:** 36 - 75 Vdc

### Special Features

- 48V input with isolated 12 V output
- Ultra-high efficiency, 95.5% 12 V @ 37.5 A
- High power density (337 W/in<sup>3</sup>) open-frame technology
- Wide operating ambient temperature range
- Industry standard quarter-brick footprint and pinout
- Low profile, 0.40 " (10.2 mm)
- Meets basic insulation requirements of EN60950-1
- Remote ON/OFF and overtemperature protection
- Available RoHS compliant
- 2 Year Warranty

### Safety

UL/cUL : CAN/CSA 22.2  
No. 60950-1  
UL60950-File No. E135734

VDE File No. 10401-3336-0206  
Licence No. 40012752



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## Electrical Specifications

### Output

Output setpoint accuracy		See table
Line regulation:	Low line to high line	See table
Load regulation	Full load to min. load	See table
Total error band	IBC38AQT4812J	9.70 - 13.40 Vdc
(including setpoint, line, load and temperature)	IBC30AQS4812J	11.52 - 12.48 Vdc
	IBC28AQW4812J	11.40 - 12.60 Vdc
Minimum load		0 A
Overshoot	At turn on and turn-off	None
Undershoot		None
Ripple and noise	(See note 2)	100 mV pk-pk typ. 40 mV rms typ.
5 - 20 MHz		

### Input

Input voltage range		See table
Input current	Remote OFF	6 mA typ.
Input current (max.)	(See note 1)	12 A max. @ Io max. and Vin = min. rated
Input reflected ripple	(See note 4)	1000 - 1560 mA (pk-pk)
Remote ON/Off	(See note 6)	
Logic compatibility		Open collector ref. to- input
On		>2.4 Vdc
OFF		<0.4 Vdc
Undervoltage lockout (non-latching):	Power-up	40 V
IBC38AQT4812J and	Power-down	38 V
IBC30AQS4812J	Power up	35.2 V
IBC28AQW4812J	Power down	34 V
Startup time (see note 3)	Power-up	15 ms
	Remote ON/OFF	5 ms



All specifications are typical at nominal input, full load at 25° C unless otherwise stated.

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## EMC Characteristics

### Immunity:

ESD air enclosure	EN61000-4-2 8 kV, 6 kV	(O/P within spec.)
Radiated field enclosure	EN61000-4-3 10 V/m	(O/P within spec.)
Conducted (DC power)	EN61000-4-6 10 V	(O/P within spec.)
Input transients	60 V to 100 V, 100 ms	

## General Specifications

Efficiency		See table
Basic insulation	Input/output	2250 Vdc
Switching frequency	Fixed	400 kHz typ.
Approvals and standards (see note 5)		EN60950-1 VDE UL/cUL60950-1
Material flammability		UL94V-0
Weight		49 g (1.73 oz)
MTBF	Telcordia Tech SR-332	5,500,000 hours
Representative model:	48 Vin, 40 °C, 50% load ground benign	

## Environmental Specifications

Thermal performance	Operating ambient, temperature	-40 °C to +85 °C
	Non-operating	-55 °C to +125 °C

### Protection

Short-circuit		Hiccup
Overvoltage	(See note 9)	Non-latching
Thermal		125 °C hot spot

## Ordering Information

Output Power (Max.)	Input Voltage	Output Voltage	Output Current (Min.)	Output Current (Max.)	Efficiency (Typ.)	Set Point Accuracy %	Regulation <sup>2</sup> Line %	Load	Model Number
450 W	42 - 53 Vdc	12 V	0 A	37.5 A <sup>(7)</sup>	95.5%	---	+10, -12.5%	±1.5%	IBC38AQT4812J
360 W	42 - 53 Vdc	12 V	0 A	30 A	94.5%	±0.25%	±0.3%	±1.5%	IBC30AQS4812J
336 W	36 - 75 Vdc	12 V	0 A	28 A	94.5%	±0.25%	±1.0%	±1.5%	IBC28AQW4812J

**CAUTION: Hazardous internal voltages and high temperatures. Ensure that unit is not user accessible.**

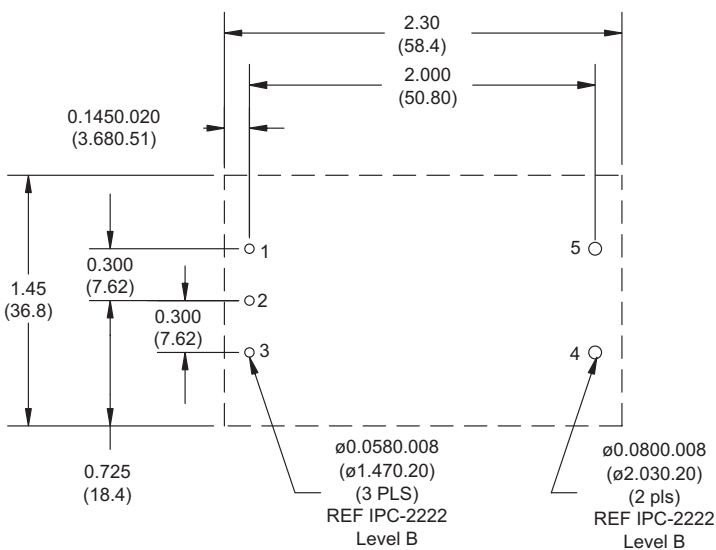
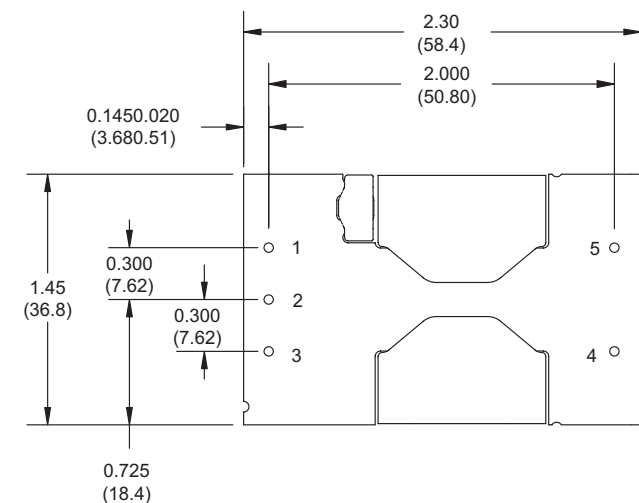
## Part Number System with Options

Product Family	Rated Output Current	Form Factor	Input Voltage Type	Input Voltage	Output Voltage	Remote ON/OFF Logic	Package, Body Height	Pin Length Options	RoHS Compliance <sup>(7, 8)</sup>	
IBC	30A	Q	S	48	12	-	R	A	N	J
IBC = 2nd Generation IBC	30 A = 30 Amps etc.	Q = Quarter-brick	T = Narrow Input Fixed Ratio S = Narrow Input Semi-reguated W = Wide Telecom Semi-reguated	48 = 48 V	12 = 12 V	Blank = Positive R = Negative (See Note 6)	A = Open-frame 0.40 in (10.2 mm) E = Open-rame, 0.45 in (11.4 mm)	Blank = 0.188 " (4.78 mm) N = 0.145 " (3.68 mm) K = 0.110 " (2.79 mm)	J = Pb-free (RoHS 6/6 compliant)	

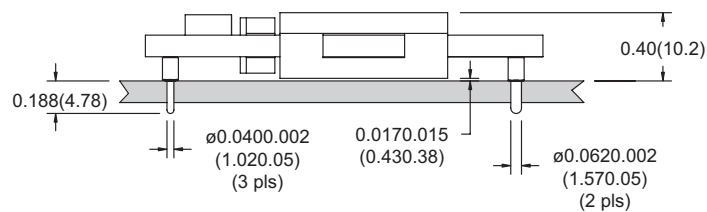
### Notes

- Recommended input fusing is a 20 A HRC 200 V rated fuse.
- Maximum is model dependent, Measured with external filter. See Application Note 190 for details.
- Start-up into resistive load.
- Maximum is model dependent, measured without external Pi filter. Significant reduction is possible with external filter. See Application Note 190 for details.
- This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
- Negative remote ON/OFF option is available. Please add the suffix '-R' to the part number, e.g. IBC30AQS4812-RAJ.
- Output is rated at 450W constant power.  
V<sub>in</sub> = 42 V: I<sub>max</sub> = 42.9 A  
V<sub>in</sub> = 48 V: I<sub>max</sub> = 37.5 A  
V<sub>in</sub> = 53 V: I<sub>max</sub> = 34.0 A
- 'E' option clearance is required to maintain 'Basic' creepage and clearance requirements when minimally insulated conductor paths are placed directly underneath the converter.
- TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- NOTICE: Some models do not support all options. Please contact your local Emerson Network Power representative or use the on-line model number search tool at <http://www.powerconversion.com> to find a suitable alternative.

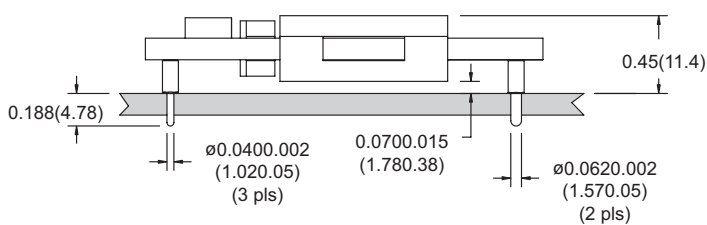
## Mechanical Drawing



RECOMMENDED HOLE PATTERN



'A' Option



'E' Option  
(See Note 8)

Dimensions in Inches (mm)  
Tolerances (unless otherwise specified)  
x.xx 0.02 (x.x 0.5)  
x.xxx 0.010 (x.xx 0.25)

## Pin connections

Pin Number	Function
1	+Vin
2	Remote ON/OFF
3	-Vin
4	-Vout
5	+Vout

### **Americas**

5810 Van Allen Way  
Carlsbad, CA 92008  
USA  
Telephone: +1 (760) 930 4600  
Facsimile: +1 (760) 930 0698

### **Europe (UK)**

Waterfront Business Park  
Merry Hill, Dudley  
West Midlands, DY5 1LX  
United Kingdom  
Telephone: +44 (0) 1384 842 211  
Facsimile: +44 (0) 1384 843 355

### **Asia (HK)**

14/F, Lu Plaza  
2 Wing Yip Street  
Kwun Tong, Kowloon  
Hong Kong  
Telephone: +852 2176 3333  
Facsimile: +852 2176 3888

For global contact, visit:

**[www.powerconversion.com](http://www.powerconversion.com)**  
**[techsupport.embeddedpower@emerson.com](mailto:techsupport.embeddedpower@emerson.com)**

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