typhoon Quarter-Brick Series

2nd Generation IBC

ARTESYN TECHNOLOGIES

DC-DC CONVERTERS | 336-450 W Intermediate Bus Converters | 1

NEW Product

- **48V input with isolated 12 V output**
- **Ultra-high efficiency, 95.5% 12 V @ 37.5 A**
- **Unprecedented useable output power levels**
- **High power density (337 W/in³) 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**

RoHS 2002/95/EC

This is a new series of high power density low profile quarter-brick converters targeted specifically at the computer, industrial electronics and telecommunications distributed power markets. By virtue of the elevated conversion efficiency, open-frame construction and superior thermal performance, the series produces rated output currents up to 37.5 A and power densities as high as 337 W/in³. Given these dominating performance levels, this quarter-brick implementation is a viable option for replacing half-brick converters in applications where footprint, profile, and cost are critical. The IBC38A fixed ratio model produces an unregulated 12 V output while the narrow and wide input IBC30A and IBC28A models produce a 12 V output semi-regulated with line and load variations. All models are fully non-latch protected against overcurrent, undervoltage, overvoltage, and overtemperature. A positive logic primary referenced remote ON/OFF input is included as standard, with negative logic available as an option.

Patent No. 6,765,810
Other Patents Pending

c UL us VDE

2 YEAR WARRANTY

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

SPECIFICATIONS

OUTPUT SPECIFICATIONS

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 (Includes set point, line, load, and temperature to end of life)	IBC38AQT4812J IBC30AQS4812J IBC28AQW4812J	9.70-13.40 Vdc 11.52-12.48 Vdc 11.40-12.60 Vdc
Minimum load		0 A
Overshoot	At turn-on and turn-off	None
Undershoot		None
Ripple and noise 5-20 MHz	(See Note 2)	100 mV pk-pk max. 40 mV rms max.

INPUT SPECIFICATIONS

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 Logic compatibility ON OFF	(See Note 6)	 Open collector ref. to -input >2.4 Vdc <0.4 Vdc
Undervoltage lockout (non-latching): IBC38AQT4812J and IBC30AQS4812J IBC28AQW4812 J	 Power up Power down Power up Power down	 40 V 38 V 35.2 V 34.0 V
Start-up time (See Note 3)	Power up Remote ON/OFF	15 ms 5 ms

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 Representative model:	Telcordia Tech SR-332 48 Vin, 40 °C, 100% load ground benign	5,500,000 hours

ENVIRONMENTAL SPECIFICATIONS

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

PROTECTION

Short-circuit	Hiccup
Overvoltage	Non-latching
Thermal shutdown	125 °C hot spot, non-latching

For the most current data and application support visit www.artesyn.com/powergroup/products.htm

NEW Product

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION			MODEL NUMBER (6,9,10)
						SET POINT ACCURACY	LINE	LOAD	
450 W	42-53 Vdc	12 V	0 A	37.5 A (7)	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%	±2.0%	IBC28AQW4812J

Part Number System with Options

IBC 30A Q S4812-RANJ

Product Family
IBC = 2nd Generation IBC

Rated Output Current
30A = 30 Amps

Form Factor
Q = Quarter-Brick

Input Voltage Type
T = Narrow Input Fixed Ratio
S = Narrow Input Semi-regulated
W = Wide Telecom Semi-regulated

RoHS Compliance (9)
J = Pb-free (RoHS 6/6 compliant)

Pin Length Options
Blank = 0.188 in (4.78 mm)
N = 0.145 in (3.68 mm)
K = 0.110 in (2.79 mm)

Package, Body Height (8)
A = Open-Frame, 0.40 in (10.2 mm)
E = Open-Frame, 0.45 in (11.4 mm)

Remote ON/OFF Logic
No Suffix = Positive
Suffix '-R' = Negative (6)

Output Voltage
12 V

Input Voltage
48 = 48 V

Notes

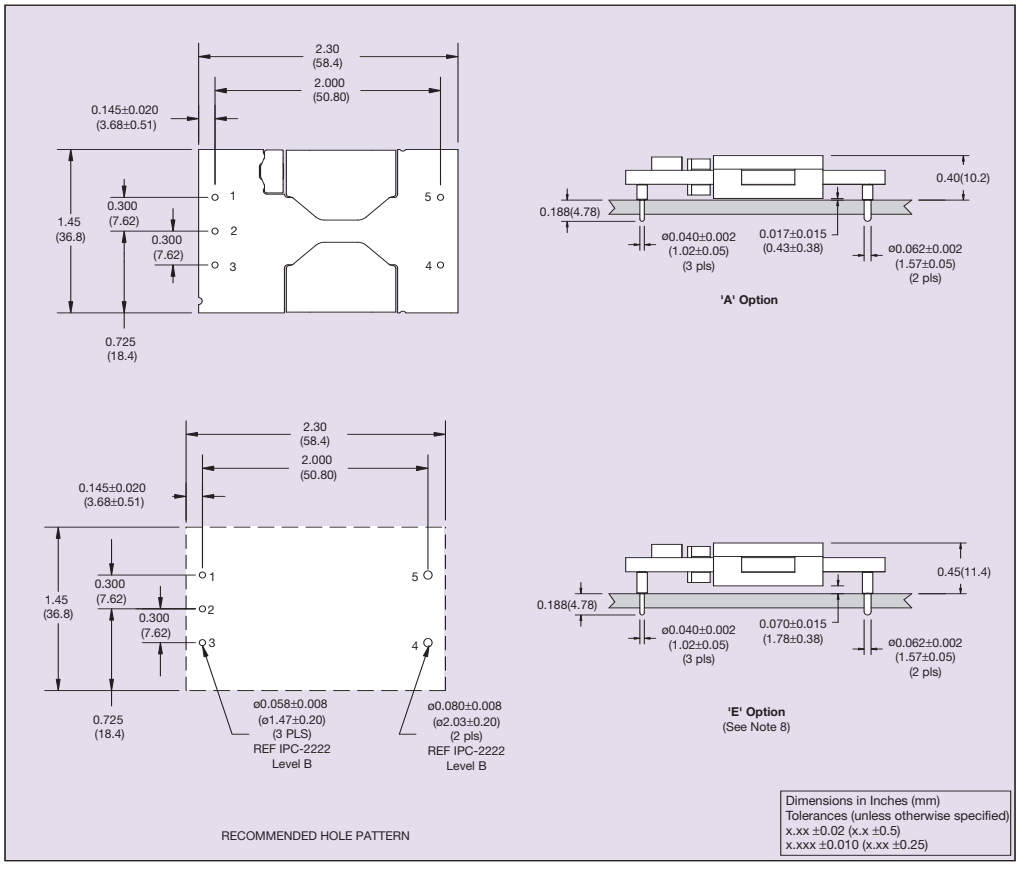
1 Recommended input fusing is a 20 A HRC 200 V rated fuse.
2 Maximum is model dependent, Measured with external filter. See Application Note 190 for details.
3 Start-up into resistive load.
4 Maximum is model dependent, measured without external Pi filter. Significant reduction is possible with external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

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

International Safety Standard Approvals

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

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



PIN CONNECTIONS	
PIN NUMBER	**FUNCTION**
1	+Vin
2	Remote ON/OFF
3	-Vin
4	-Vout
5	+Vout

Figure 1 - Mechanical Drawing and Pinout Table