Quarter-Brick Series

Narrow Input IBC

Total Power: **240 -300W**
Input Voltage: **48VDC**
# of Outputs: **Single**

Special Features

- 48 V input with isolated 12 V output
- Efficiencies up to 96%
- Open loop regulation
- Fully rated 240 W @ 70 °C, 200 LFM
- Overcurrent protection
- Operates with no load
- Auto restart after fault condition
- Remote ON/OFF
- Parallelable
- Over-temperature protection
- Available RoHS compliant
- 2 Year Warranty

This series is a new, high efficiency, Quarter-Brick, isolated, Intermediate Bus Converter series that provides up to 300 Watts of output power. The series is designed to convert 48 Volts ±10% to a loosely regulated 12 Volts at full rated load up to 25 A and efficiencies up to 96%. This converter is available in four package types, standard quarter-brick through-hole, through-hole vertical, standard quarter-brick surface-mount, and quarter-brick surface-mount solder ball. In addition, this series features remote ON/OFF, no-load operation, input undervoltage protection as well as output overvoltage and overcurrent protection.

Safety

UL/cUL : CAN/CSA 22.2
No. 60950
UL 60950 File No. E139421

TÜV Product Service (EN60950)
Certificate No.
B03 04 19870213

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Specifications

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

OUTPUT SPECIFICATIONS

Output voltage		12 V
Current share accuracy	Full load	10%
Line regulation	Low line to high line	±10% max.
Load regulation	Full load to min. load	6% max.
Minimum load		0 A
Overshoot		3.0% max.
Undershoot		200 mV max.
Ripple and noise (See Note 1)	5-20 MHz	150 mV pk-pk
Transient response (See Note 2)	Deviation	<100 mV <100 µs recovery to within total error band
Overvoltage setpoint		13.8 V

INPUT SPECIFICATIONS

Input voltage range	Nominal 48 Vdc	±10% Vdc
Input current	No load Remote OFF	100 mA typ. 2 mA typ.
Input reflected ripple	(See Note 3)	34 mA rms 100 mA pk-pk
Remote ON/OFF	ON OFF	>1.7 Vdc <0.8 Vdc
Under-voltage lockout	Power up Power down	41.0 V 38.6 V
Start-up time (See Note 4)	Power up Power down	<50 ms <20 ms

EMC CHARACTERISTICS

Conducted emissions	EN55022 (See Note 5) EN55022 (See Note 5)	Level A Level B
Immunity:		
ESD air	EN61000-4-2 4 kV	
ESD contact	EN61000-4-2 4 kV	
Radiated field enclosure	EN61000-4-3 3 V/m	
Conducted (dc power)	EN61000-4-6 3 V	
Conducted (signal)	EN61000-4-6 3 V	

GENERAL SPECIFICATIONS

Efficiency	Half load	Up to 96% typ.
Isolation	Input/output	2250 Vdc
Switching frequency	Fixed	300 kHz typ.
Approvals and standards (See Note 6)		EN60950 (TÜV Product Service) UL/cUL60950
Material flammability		UL94V-0
Weight		56.66 g (2 oz)
MTBF Representative model:	MIL-HDBK-217F 25 A @ 48 Vin, 40 °C ambient 100% load ground benign	1,000,000 hours
	Telcordia SR-332	2,828,160 hours

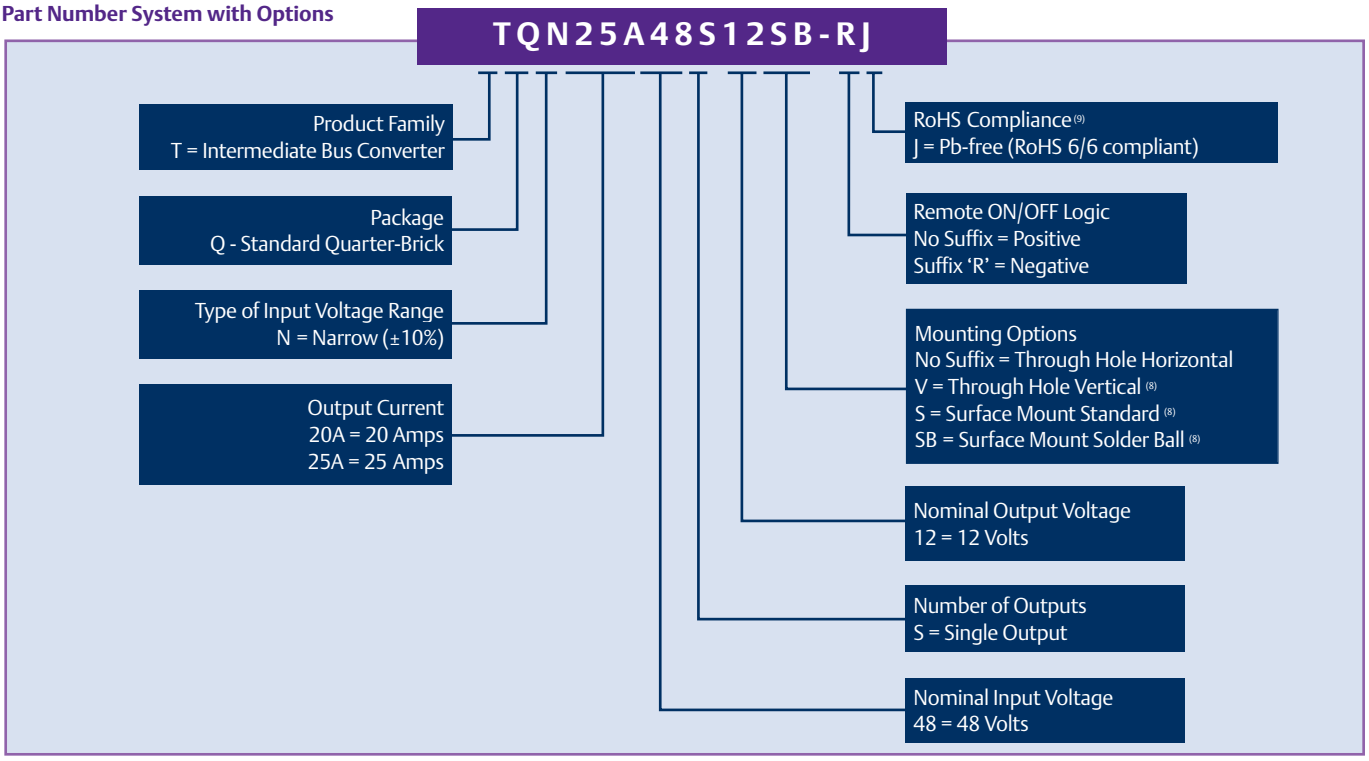
ENVIRONMENTAL SPECIFICATIONS

Thermal performance (300 LFM airflow)	Operating ambient, temperature	0 °C to +80 °C
	Non-operating	-55 °C to +125 °C

Specifications Contd.

RATED OUTPUT POWER	INPUT VOLTAGE	OUTPUT VOLTAGE	INPUT CURRENT (MAX)	OUTPUT CURRENT (MAX.)	OVER CURRENT SETPOINT	EFFICIENCY HALF/FULL LOAD	MODEL NUMBER [9,10]
240 W	43.2-52.8 Vdc	12 V	6 A	20 A	25 A	96%/95% (typ.)	TQN20A48S12J
300 W	43.2-52.8 Vdc	12 V	7 A	25 A	29 A	96%/95% (typ.)	TQN25A48S12J

Part Number System with Options



Notes

1 Measured as per recommended set-up. See Application Note 140 for details.
2 di/dt = 10 A/µs, Vin = 48 Vdc, Tc = 25 °C, load change = 50% lo max. to 75% lo max. and 75% lo max. to 50% lo max.
3 Measured with external filter. See Application Note 140 for details.
4 Start-up into resistive load.
5 The Quarter-Brick Narrow Input series of converters meet levels A and B conducted emissions with external components. See Application Note 140 for details.
6 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
7 Use of additional high quality ceramic output capacitors is recommended in the end system.
8 Consult factory for availability.-
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.

PROTECTION	
Short-circuit	Continuous foldback
Over-temperature	Auto restart

RECOMMENDED SYSTEM CAPACITANCE		
Input capacitance		390 µF/20 mW ESR max.
Output capacitance	(See Note 7)	270 µF/10 mW ESR max.

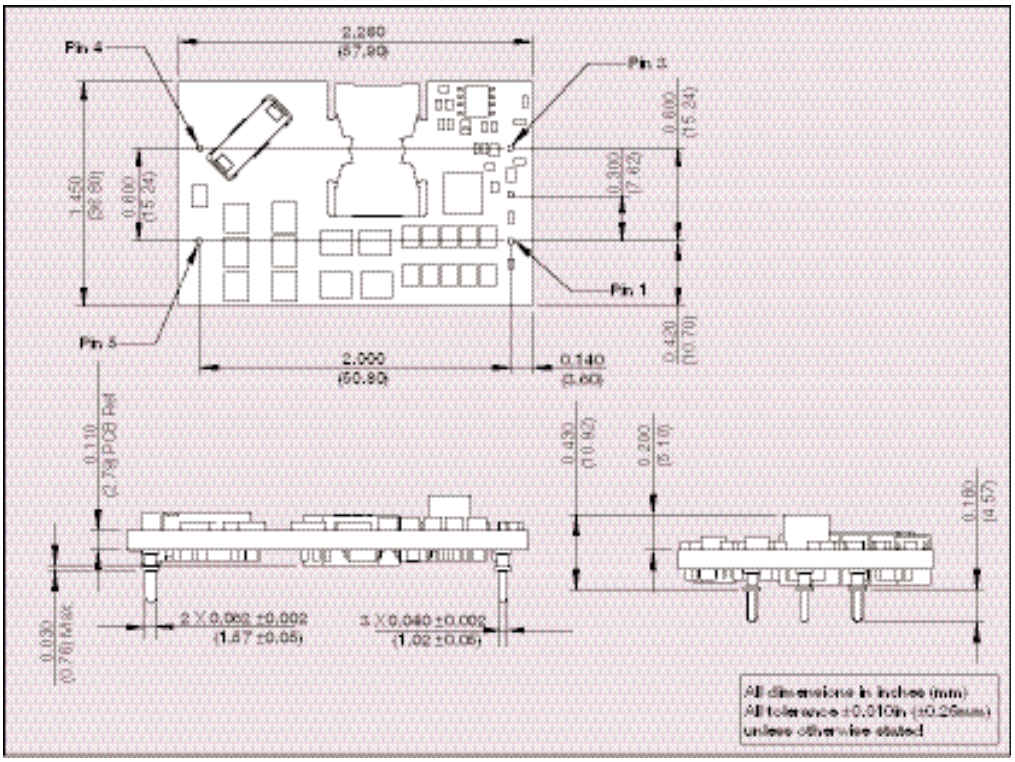


Figure 1: Horizontal Mechanical Drawing and Pinout Table

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

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