Rev.04.02.08
qbwiibc


# Quarter-Brick Series

## Wide Input IBC

**Total Power:** 168W
**Input Voltage:** 36 - 75VDC
**# of Outputs:** Single


## Special Features

- Wide input 36 Vdc to 75 Vdc
- Output voltage of 12 V ±10%
- Current rating 14 A
- Ultra high efficiency, 94.5% typical
- Industry standard quarter-brick footprint
- Low profile - 0.35”
- Remote ON/OFF
- Available RoHS compliant
- 2 Year Warranty

This series is a Quarter-Brick, wide-input intermediate bus converter (IBC). Capable of operating from any input voltage in the range 36 Vdc to 75 Vdc, this high efficiency isolated dc-dc converter module generates a semi-regulated 12 V output and can deliver up to 14 A. This series features a low profile open-frame construction and has an industry standard quarter-brick footprint.

## Safety

UL/cUL : CAN/CSA 22.2 No. 60950-00 : UL 60950
UL 60950 File No. E174104

TÜV Product Service (EN60950)
Certificate No.
B 04 07 38572 046

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# Specifications



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

## OUTPUT SPECIFICATIONS

| | | |
|---|---|---|
| Output voltage | (Nominal) | 12 Vdc |
| Output votage range | | 10.8-13.2 Vdc |
| Total regulation (Over line, load and temperature) | | ±10% max. 36-75 Vin<br>±5% max. 40-60 Vin |
| Output current | | 0 A min.<br>14 A max. |
| Ripple and noise (See Note 2) | (0-20 MHz) | 150 mV pk-pk |
| Output capacitance | External to unit | 200 µF min. |

## INPUT SPECIFICATIONS

| | | |
|---|---|---|
| Input voltage range | | 36-75 Vdc |
| Input current | No load<br>Max. | 100 mA<br>3.9 A max. @ 48 Vin |
| Active low remote ON/OFF (See Note 1)<br>ON<br>OFF | | Open collector ref to input<br>>1.1 Vdc or floating<br><0.8 Vdc |
| Start-up time | Power-up from Remote ON/OFF | 15 ms typ. |

## EMC CHARACTERISTICS

| | | |
|---|---|---|
| Conducted emissions | EN55022<br>EN55022 | Level A<br>Level B |
| Radiated emissions | EN55022 | Level A |
| Immunity: | | |
| ESD air | EN61000-4-2 8 kV | |
| ESD contact | EN61000-4-2 6 kV | |
| Radiated field enclosure | EN61000-4-3 10 V/m | |
| Conducted (dc power) | EN61000-4-6 10 V | |
| Conducted (signal) | EN61000-4-6 10 V | |
| Input transients | ETS 300 132-2, ETR 283 | |

## GENERAL SPECIFICATIONS

| | | |
|---|---|---|
| Efficiency | | 94.5% typ. |
| Basic insulation | Input/output | 2250 Vdc |
| Switching frequency | Fixed | 333 kHz |
| Approvals and standards | | EN60950 (TÜV Product Service)<br>UL/cUL60950 |
| Material flammability | | UL94V-0 |
| Weight | | 40 g (1.43 oz) |
| MTBF<br>Representative model: | MIL-HDBK-217F<br>14 A @ 48 Vin, 40 °C<br>100% load ground benign | 156,000 hours |
| | Telcordia SR-332 | 1,231,000 hours |

## ENVIRONMENTAL SPECIFICATIONS

| | | |
|---|---|---|
| Thermal performance (See Note 3) | Operating ambient temperature | -40 °C to +100 °C |
| | Non-operating | -55 ºC to +125 ºC |

## PROTECTION

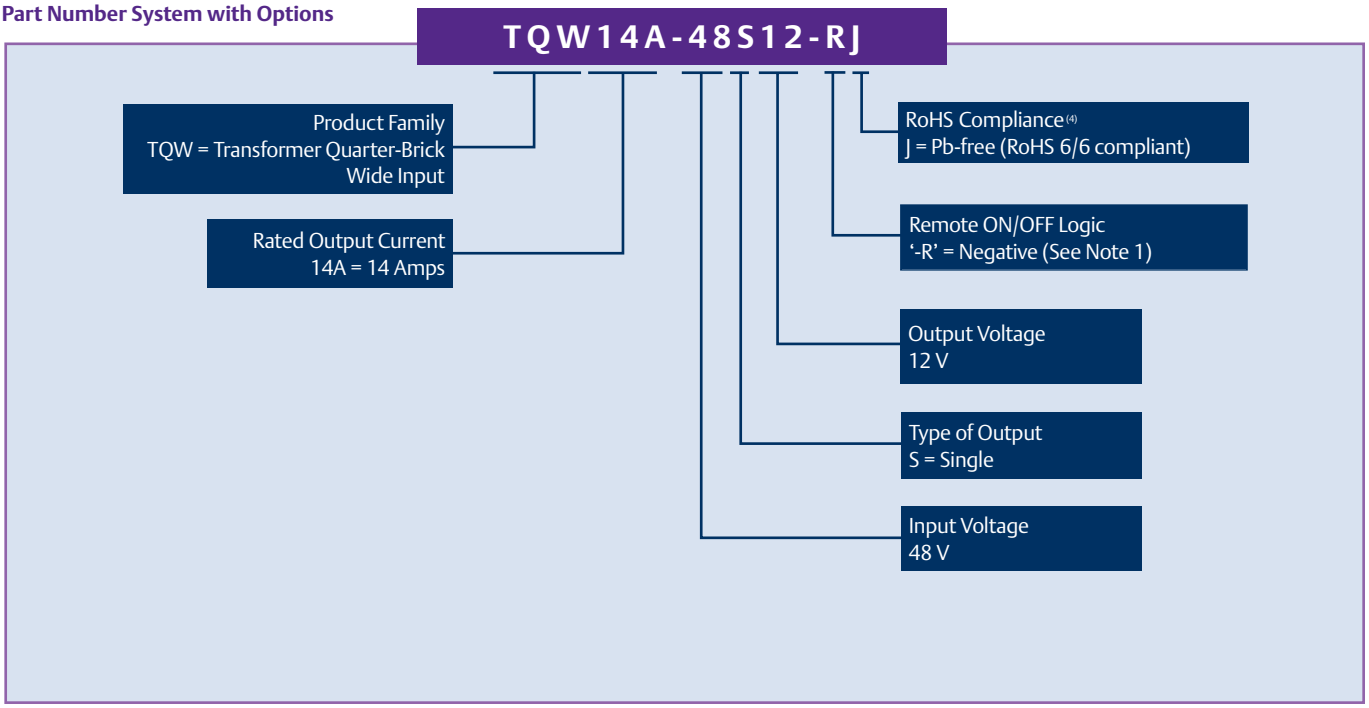
| | |
|---|---|
| Current limit and short-circuit | Hiccup, auto recovery |
| Thermal | Auto recovery |

# Specifications Contd.



| OUTPUT POWER (MAX.) | INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT (MIN) | OUTPUT CURRENT (MAX.) | EFFICIENCY (TYP.) | TOTAL REGULATION | MODEL NUMBER [1,4] |
|---|---|---|---|---|---|---|---|
| 168 W | 36-75 Vdc | 12 V | 0 A | 14 A | 94.5% | ±10% | TQW14A-48S12-RJ |

## Part Number System with Options



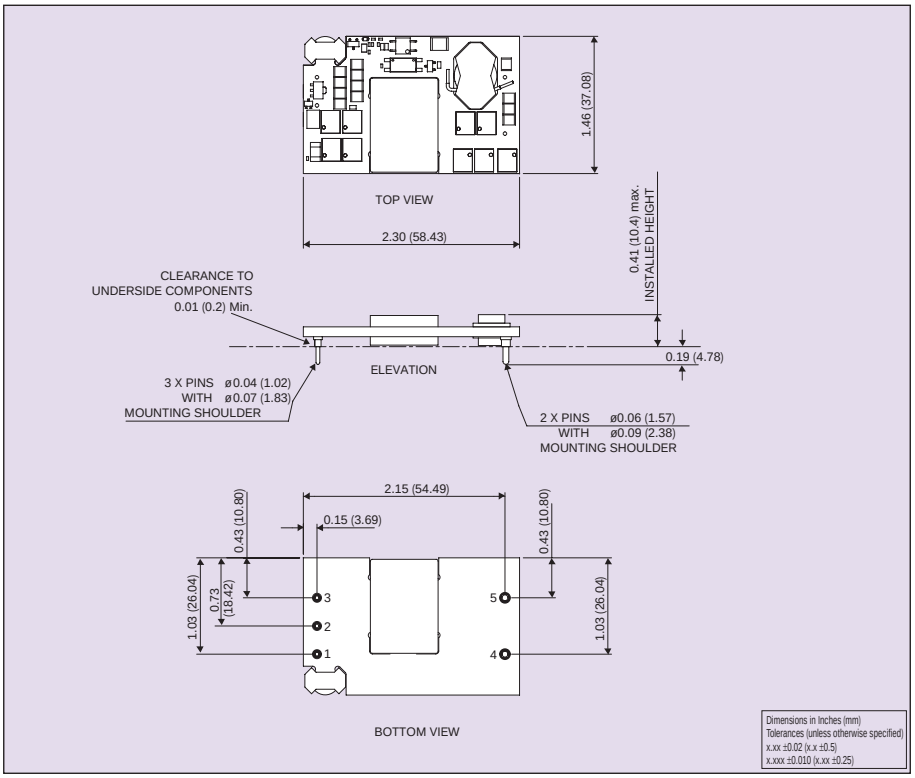

### Notes

1 The standard product features active-low remote ON/OFF.

Active low ON/OFF
ON <0.7 V
OFF > 1.1 V or open circuit.

2 Tested with 4 x 47 µF tantalum capacitors plus 2 x 4.7 µF ceramic capacitors. See Application Note 135 for set-up.
3 Derating curves available in both the Longform Datasheet and Application Note.
4 TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.

| RECOMMENDED SYSTEM CAPACITANCE | |
|---|---|
| Input capacitance | 33 µF |
| Output capacitance | 200 µF/10 mW ESR max. |




| PIN CONNECTIONS | |
|---|---|
| **PIN NUMBER** | **FUNCTION** |
| 1 | Vin+ |
| 2 | Remote |
| 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**

**techsupport.embeddedpower@emerson.com**



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