# SERIES: VQB75W | DESCRIPTION: DC-DC CONVERTER

## FEATURES

- up to 75 W isolated output
- 4:1 input range (9~36 V, 18~75 V)
- single output from 3.3~24 V
- 1,500 V isolation
- over current, over temperature, over voltage, and short circuit protections
- remote on/off
- efficiency up to 87%

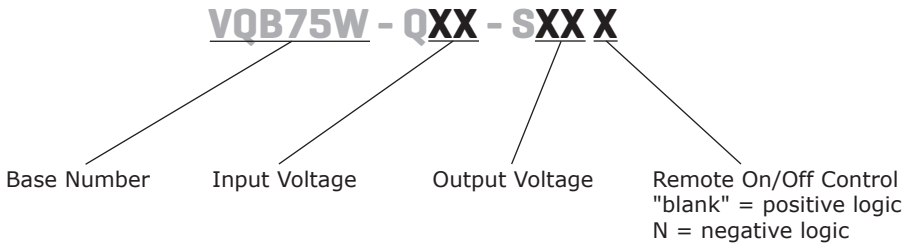
RoHS

## MODEL

| MODEL | input voltage range (Vdc) | output voltage (Vdc) | output current max (A) | output power max (W) | ripple and noise[1] max (mVp-p) | efficiency typ (%) |
|---|---|---|---|---|---|---|
| VQB75W-Q24-S3R3 | 9 ~ 36 | 3.3 | 12 | 40 | 100 | 81 |
| VQB75W-Q24-S5 | 9 ~ 36 | 5 | 12 | 60 | 100 | 84 |
| VQB75W-Q24-S12 | 9 ~ 36 | 12 | 6.25 | 75 | 150 | 86 |
| VQB75W-Q24-S15 | 9 ~ 36 | 15 | 5 | 75 | 150 | 86 |
| VQB75W-Q24-S24 | 9 ~ 36 | 24 | 3.12 | 75 | 240 | 86 |
| VQB75W-Q48-S3R3 | 18 ~ 75 | 3.3 | 12 | 40 | 100 | 82 |
| VQB75W-Q48-S5 | 18 ~ 75 | 5 | 12 | 60 | 100 | 85 |
| VQB75W-Q48-S12 | 18 ~ 75 | 12 | 6.25 | 75 | 150 | 86 |
| VQB75W-Q48-S15 | 18 ~ 75 | 15 | 5 | 75 | 150 | 87 |
| VQB75W-Q48-S24 | 18 ~ 75 | 24 | 3.12 | 75 | 240 | 87 |

Notes: 1. ripple and noise are measured at 20 MHz BW with 10µF tantalum capacitor and 1µF ceramic capacitor across output

## PART NUMBER KEY



## INPUT

| parameter | conditions/description | | min | typ | max | units |
|---|---|---|---|---|---|---|
| operating input voltage | | | 9<br>18 | 24<br>48 | 36<br>75 | Vdc<br>Vdc |
| under voltage lockout | power up | 24 V input<br>48 V input | | 8.8<br>17 | | Vdc<br>Vdc |
| | power down | 24 V input<br>48 V input | | 8<br>16 | | Vdc<br>Vdc |
| remote on/off[1] | | | | | | |
| filter | PI type | | | | | |

Notes: 1. logic compatibility, open collector ref to -input
for positive logic
Module ON, >3.5~75 Vdc or open circuit
Module OFF, <1.8 Vdc

## OUTPUT

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| line regulation | measured from high line to low line | | | ±0.2 | % |
| load regulation | measured from full load to zero load | | | ±0.2 | % |
| voltage accuracy | | | | ±1.5 | % |
| transient response | 75~100% step load change<br>recovery time<br>error band | | <br><br>±5 | 500 | <br>µs<br>%Vout |
| adjustability[2] | | | ±10 | | % |
| switching frequency | 100% load, input voltage range | | 300 | | kHz |
| temperature coefficient | | | ±0.03 | | %/°C |

Notes: 2. trim-up: connect a resistor between the trim pin and -Sense
trim-down: connect a resistor between the trim pin and +Sense

## PROTECTIONS

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| over voltage protection | %Vo | 115 | | 140 | % |
| over current protection | % nominal output current | 110 | | 140 | % |
| short circuit protection | continuous | | | | |

## SAFETY AND COMPLIANCE

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| isolation voltage | input to output<br>input to case<br>output to case | 1,500<br>1,500<br>1,500 | | | Vdc<br>Vdc<br>Vdc |
| isolation resistance | tested at 500 Vdc | 100 | | | MΩ |
| RoHS compliant | yes | | | | |

## ENVIRONMENTAL

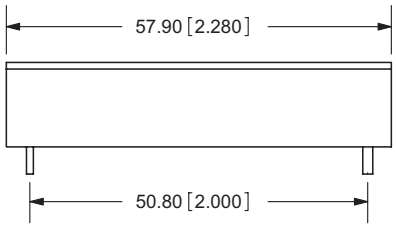
| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| case operating temperature | | -40 | | 100 | °C |
| storage temperature | | -55 | | 105 | °C |
| thermal shutdown case temp. | | | 105 | | °C |

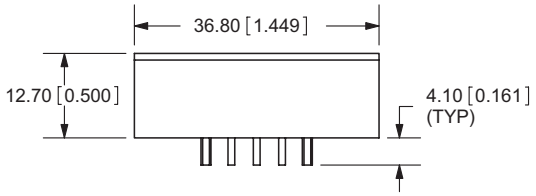
## MECHANICAL

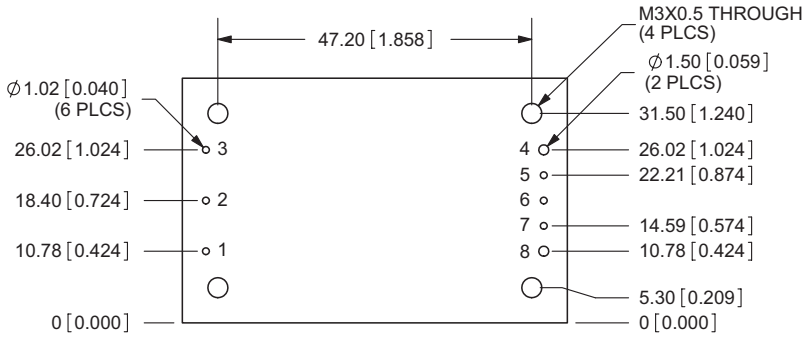
| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| dimensions | 36.8 x 57.90 x 12.70 (1.449 x 2.280 x 0.500 inch) | | | | mm |
| case material | aluminum baseplate, plastic case | | | | |

## MECHANICAL DRAWING

units: mm[inch]
tolerance:
X.X = ±0.5mm
X.XX = ±0.25mm




| PIN CONNECTIONS | |
|---|---|
| PIN | FUNCTION |
| 1 | +Vin |
| 2 | on/off |
| 3 | -Vin |
| 4 | -Vo |
| 5 | -S |
| 6 | trim |
| 7 | +S |
| 8 | +Vo |

Note: All specifications measured at 25°C, nominal input voltage, and full load unless otherwise noted.

## REVISION HISTORY

| rev. | description | date |
|---|---|---|
| 1.0 | initial release | 12/04/2008 |
| 1.01 | updated mechanical drawing | 01/08/2009 |
| 1.02 | V-Infinity branding removed | 09/25/2012 |
| 1.03 | updated spec | 03/18/2013 |

The revision history provided is for informational purposes only and is believed to be accurate.

CUI INC®

**Headquarters**
20050 SW 112th Ave.
Tualatin, OR 97062
**800.275.4899**

Fax 503.612.2383
**cui**.com
techsupport@cui.com