

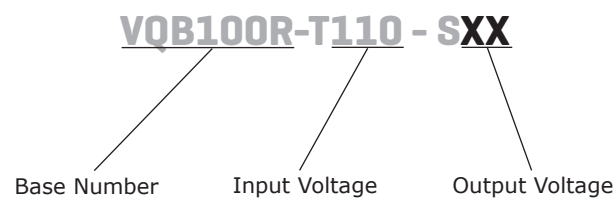
SERIES: VQB100R | DESCRIPTION: DC-DC CONVERTER
FEATURES

- up to 100 W isolated output
- industry standard quarter brick package
- 3:1 input range (66~160 V)
- single output from 5~24 V
- 1,500 V isolation
- over current, over temperature, over voltage, and short circuit protections
- remote on/off
- efficiency up to 92%



| MODEL | input voltage range | output voltage | output current max | output power max | ripple and noise ¹ max | efficiency typ |
|------------------|---------------------|----------------|--------------------|------------------|-----------------------------------|----------------|
| | (Vdc) | (Vdc) | (A) | (W) | (mVp-p) | (%) |
| VQB100R-T110-S5 | 66 ~ 160 | 5 | 20 | 100 | 100 | 90 |
| VQB100R-T110-S12 | 66 ~ 160 | 12 | 8.4 | 100 | 150 | 92 |
| VQB100R-T110-S24 | 66 ~ 160 | 24 | 4.2 | 100 | 240 | 91 |

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 | | 66 | 110 | 160 | Vdc |
| input surge voltage | 100 ms max. | | | 180 | Vdc |
| under voltage lockout | power up | | 62 | | Vdc |
| | power down | | 56 | | Vdc |
| positive logic remote on/off ¹ | | | | | |
| filter | PI type | | | | |
| Notes: | 1. logic compatibility, open collector ref to -input 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 | % |
| start-up time | | | 45 | | ms |
| voltage accuracy | | | | ±1.5 | % |
| transient response | 25% step load change error band recover time | | | ±5 200 | % Vout µs |
| adjustability ² | | | ±10 | | % |
| switching frequency | 100% load, input voltage range | | 200 | | 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 | % |
| short circuit protection | continuous | | | | |
| current limit | % nominal output current | 110 | | 180 | % |
| thermal shutdown case temp. | | | 105 | | °C |

SAFETY AND COMPLIANCE

| parameter | conditions/description | min | typ | max | units |
|-----------------------|--|-------|-------|-----|-------|
| isolation voltage | input to output | 2,250 | | | Vdc |
| | input to case | 2,250 | | | Vdc |
| | output to case | 1,500 | | | Vdc |
| isolation resistance | | 10 | | | MΩ |
| isolation capacitance | | | 1,000 | | pF |
| safety approvals | UL 60950-1 | | | | |
| EMI/EMC | EN 50155 (EN 50121-3-2) with external filter | | | | |
| RoHS compliant | yes | | | | |

ENVIRONMENTAL

| parameter | conditions/description | min | typ | max | units |
|----------------------------|------------------------|-----|-----|-----|-------|
| case operating temperature | | -40 | | 100 | °C |
| storage temperature | | -55 | | 105 | °C |
| humidity | non-condensing | | | 95 | % |

MECHANICAL

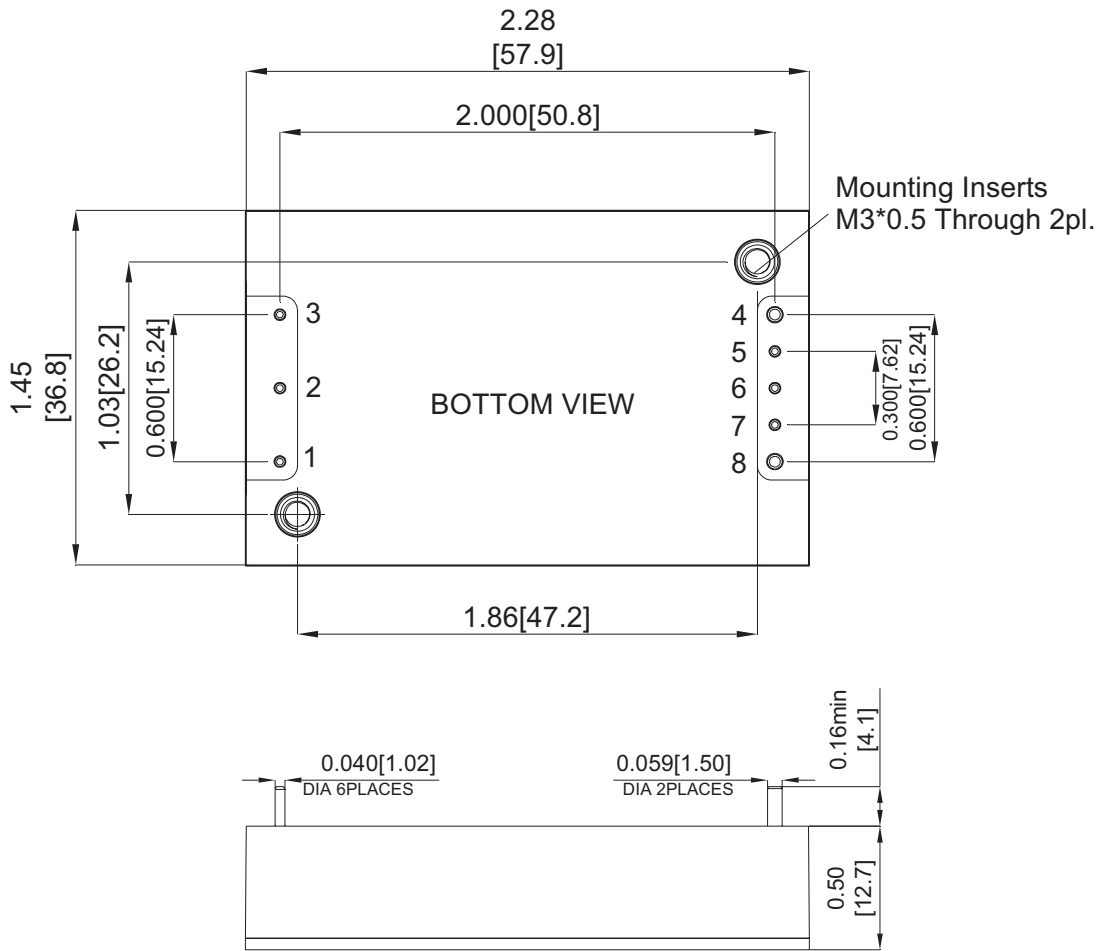
| parameter | conditions/description | min | typ | max | units |
|---------------|---|-----|------|-----|-------|
| dimensions | 2.28 x 1.45 x 0.5 (57.9 x 36.8 x 12.7 mm) | | | | inch |
| case material | aluminum baseplate with plastic case | | | | |
| weight | | | 61.5 | | g |

MECHANICAL DRAWING

units: inches [mm]

tolerance: x.xx ± 0.2inches [±0.5mm]

x.xxx ± 0.1inches [±0.25mm]



| PIN CONNECTIONS | |
|-----------------|----------|
| PIN | FUNCTION |
| 1 | +Vin |
| 2 | On/Off |
| 3 | -Vin |
| 4 | -Vo |
| 5 | -S |
| 6 | TRIM |
| 7 | +S |
| 8 | +Vo |

REVISION HISTORY

| rev. | description | date |
|------|---|------------|
| 1.0 | initial release | 06/20/2012 |
| 1.01 | misc. updates, added product photo | 11/13/2012 |
| 1.02 | updated input voltage range and drawing | 01/29/2013 |

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



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