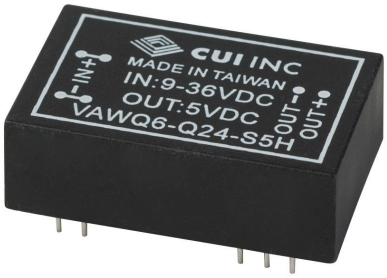
CUI INC®



# SERIES: VAWQ6 | DESCRIPTION: DC-DC CONVERTER

## FEATURES

- up to 6 W isolated output
- wide input (4:1)
- industry standard 24 pin DIP package style
- single and dual regulated outputs
- 3,000 Vdc isolation
- short circuit protection
- wide temperature (-25~71°C)
- efficiency up to 80%



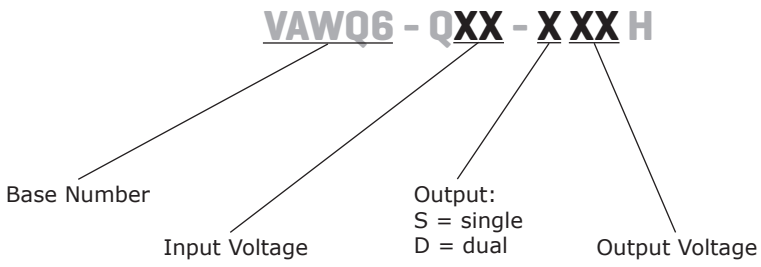

RoHS

## MODEL

| MODEL | input voltage typ (Vdc) | input voltage range (Vdc) | output voltage (Vdc) | output current max (mA) | output power max (W) | ripple and noise[1] max (mVp-p) | efficiency typ (%) |
|---|---|---|---|---|---|---|---|
| VAWQ6-Q24-S3R3H | 24 | 9~36 | 3.3 | 1,000 | 3.3 | 100 | 72 |
| VAWQ6-Q24-S5H | 24 | 9~36 | 5 | 1,000 | 5 | 100 | 78 |
| VAWQ6-Q24-S12H | 24 | 9~36 | 12 | 470 | 5.64 | 120 | 80 |
| VAWQ6-Q24-S15H | 24 | 9~36 | 15 | 400 | 6 | 150 | 80 |
| VAWQ6-Q24-D5H | 24 | 9~36 | ±5 | ±500 | 5 | 100 | 78 |
| VAWQ6-Q24-D12H | 24 | 9~36 | ±12 | ±230 | 5.52 | 120 | 80 |
| VAWQ6-Q24-D15H | 24 | 9~36 | ±15 | ±190 | 5.7 | 150 | 80 |
| VAWQ6-Q48-S3R3H | 48 | 18~72 | 3.3 | 1,000 | 3.3 | 100 | 70 |
| VAWQ6-Q48-S5H | 48 | 18~72 | 5 | 1,000 | 5 | 100 | 78 |
| VAWQ6-Q48-S12H | 48 | 18~72 | 12 | 470 | 5.64 | 120 | 79 |
| VAWQ6-Q48-S15H | 48 | 18~72 | 15 | 400 | 6 | 150 | 80 |
| VAWQ6-Q48-D5H | 48 | 18~72 | ±5 | ±500 | 5 | 100 | 77 |
| VAWQ6-Q48-D12H | 48 | 18~72 | ±12 | ±230 | 5.52 | 120 | 79 |
| VAWQ6-Q48-D15H | 48 | 18~72 | ±15 | ±190 | 5.7 | 150 | 80 |

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 | 24 Vdc models<br>48 Vdc models | 9<br>18 | 24<br>48 | 36<br>72 | Vdc<br>Vdc |
| input filter | PI type | | | | |

## OUTPUT

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| line regulation | measured from low line to high line | | | ±0.5 | % |
| load regulation | single output models[1]<br>dual output models[2] | | | ±0.5<br>±1.0 | %<br>% |
| voltage accuracy | | | | ±2.0 | % |
| voltage balance | dual output models | | | ±1.0 | % |
| switching frequency | | 200 | | | kHz |
| temperature coefficient | | | | ±0.05 | %/°C |

Notes: 1. measured from 10% to 100% full load
2. measured from 25% to 100% full load

## PROTECTIONS

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| short circuit protection | continuous | | | | |

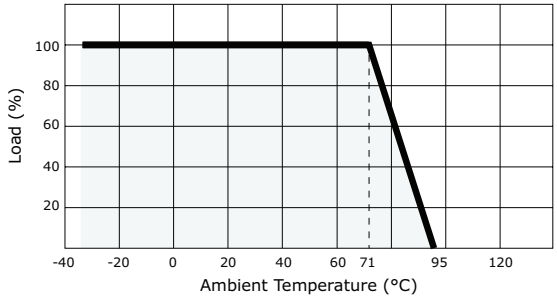
## SAFETY AND COMPLIANCE

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| isolation voltage | | 3,000 | | | Vdc |
| insulation resistance | | 1,000 | | | MΩ |
| RoHS | 2011/65/EU | | | | |

## ENVIRONMENTAL

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| operating temperature | | -25 | | 71 | °C |
| case temperature | | | | 95 | °C |
| storage temperature | | -40 | | 100 | °C |

## DERATING CURVES




## MECHANICAL

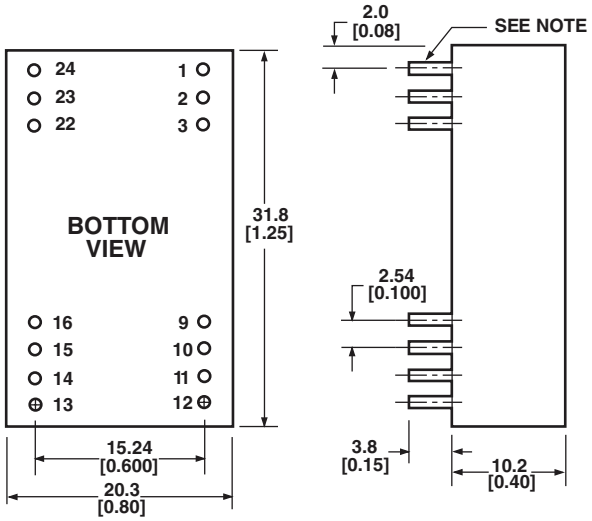
| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| dimensions | 31.8 x 20.3 x 10.2 (1.25 x 0.80 x 0.40 inches) | | | | mm |
| case material | non-conductive black plastic | | | | |
| weight | | | 12.5 | | g |

## MECHANICAL DRAWING

units: mm [inches]
tolerance: inches: x.xx = ±0.02, x.xxx = ±0.010
mm: x.xx = ±0.5, x.xxx = ±0.25
Note: pin diameter: 0.5 mm [0.02"]

| PIN CONNECTIONS | | |
|---|---|---|
| | SINGLE OUTPUT | DUAL OUTPUT |
| PIN | FUNCTION | FUNCTION |
| 1,24 | NP | NP |
| 2,3 | -Vin | -Vin |
| 4,5 | NP | NP |
| 9 | NC | Common |
| 10,15 | NC | NC |
| 11 | NC | -Vo |
| 12,13 | NP | NP |
| 14 | +Vo | +Vo |
| 16 | -Vo | Common |
| 20,21 | NP | NP |
| 22,23 | +Vin | +Vin |

NP = No Pin
NC = No connection




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 | 10/13/2008 |
| 1.01 | updated information | 04/09/2009 |
| 1.02 | updated to new template | 08/22/2011 |
| 1.03 | V-Infinity branding removed | 09/11/2011 |
| 1.04 | updated spec | 03/12/2013 |
| 1.05 | updated spec | 05/12/2015 |

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

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