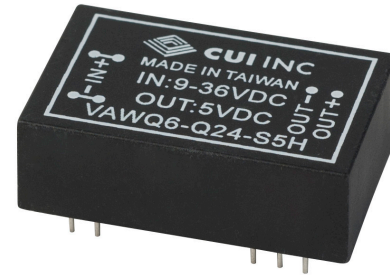


**SERIES:** VAWQ6 | **DESCRIPTION:** DC-DC CONVERTER

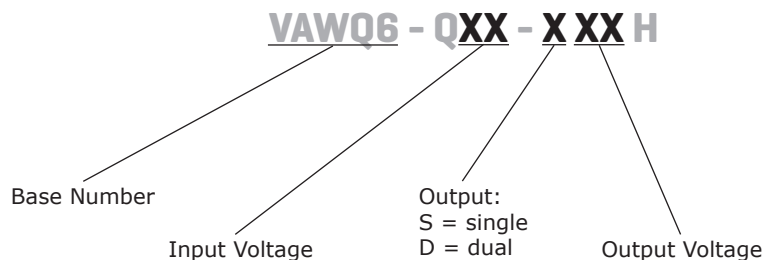
**FEATURES**

- 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%



| MODEL           | input voltage |                | output voltage<br>(Vdc) | output current<br>max<br>(mA) | output power<br>max<br>(W) | ripple and noise <sup>1</sup><br>max<br>(mVp-p) | efficiency<br>typ<br>(%) |
|-----------------|---------------|----------------|-------------------------|-------------------------------|----------------------------|---|--------------------------|
|                 | typ<br>(Vdc)  | range<br>(Vdc) |                         |                               |                            |   |                          |
| 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          | 9   | 24  | 36  | Vdc   |
|                         | 48 Vdc models          | 18  | 48  | 72  | 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 <sup>1</sup>   |     |     | ±0.5  | %     |
|                         | dual output models <sup>2</sup>     |     |     | ±1.0  | %     |
| 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             |     |     |     |       |

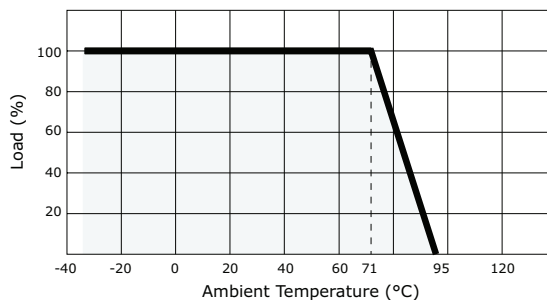
## SAFETY AND COMPLIANCE

| 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

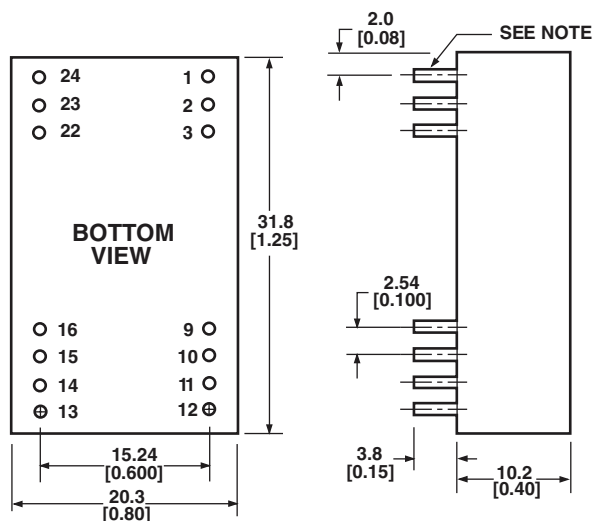
units: mm [inches]

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

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| 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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