

**SERIES:** VHB200W | **DESCRIPTION:** DC-DC CONVERTER

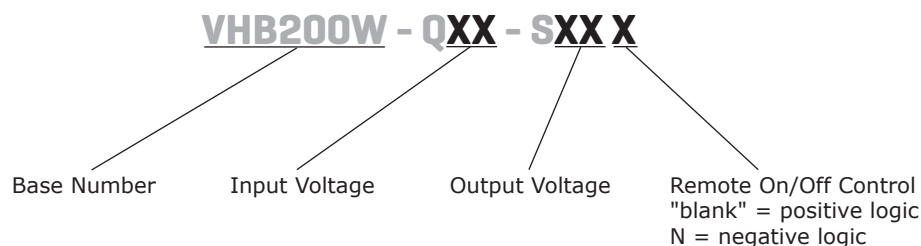
**FEATURES**

- up to 200 W isolated output
- industry standard half brick package
- 4:1 input range (10~36 V, 18~75 V)
- single output from 3.3~48 V
- 1,500 V isolation
- over current, over temperature, over voltage, and short circuit protections
- remote on/off
- efficiency up to 89%



| MODEL            | input<br>voltage<br>range<br>(Vdc) | output<br>voltage<br>(Vdc) | output<br>current<br>max<br>(A) | output<br>power<br>max<br>(W) | ripple<br>and noise <sup>1</sup><br>max<br>(mVp-p) | efficiency<br><br>typ<br>(%) |
|------------------|------------------------------------|----------------------------|---------------------------------|-------------------------------|----------------------------------------------------|------------------------------|
| VHB200W-Q24-S3R3 | 10 ~ 36                            | 3.3                        | 50                              | 165                           | 100                                                | 87                           |
| VHB200W-Q24-S5   | 10 ~ 36                            | 5                          | 40                              | 200                           | 100                                                | 87                           |
| VHB200W-Q24-S12  | 10 ~ 36                            | 12                         | 16.7                            | 200                           | 150                                                | 86                           |
| VHB200W-Q24-S15  | 10 ~ 36                            | 15                         | 13.3                            | 200                           | 150                                                | 86                           |
| VHB200W-Q24-S24  | 10 ~ 36                            | 24                         | 8.3                             | 200                           | 240                                                | 87                           |
| VHB200W-Q24-S28  | 10 ~ 36                            | 28                         | 7.1                             | 200                           | 280                                                | 87                           |
| VHB200W-Q24-S48  | 10 ~ 36                            | 48                         | 4.2                             | 200                           | 240                                                | 86                           |
| VHB200W-Q48-S3R3 | 18 ~ 75                            | 3.3                        | 40                              | 132                           | 100                                                | 88                           |
| VHB200W-Q48-S5   | 18 ~ 75                            | 5                          | 40                              | 200                           | 100                                                | 89                           |
| VHB200W-Q48-S12  | 18 ~ 75                            | 12                         | 16.7                            | 200                           | 150                                                | 88                           |
| VHB200W-Q48-S15  | 18 ~ 75                            | 15                         | 13.3                            | 200                           | 150                                                | 88                           |
| VHB200W-Q48-S24  | 18 ~ 75                            | 24                         | 8.3                             | 200                           | 240                                                | 88                           |
| VHB200W-Q48-S28  | 18 ~ 75                            | 28                         | 7.1                             | 200                           | 280                                                | 88                           |
| VHB200W-Q48-S48  | 18 ~ 75                            | 48                         | 4.2                             | 200                           | 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                   |                                                                                                                     |                        |  | 10<br>18 | 24<br>48 | 36<br>75 | Vdc<br>Vdc |
| under voltage lockout                     | power up                                                                                                            | 24 V input             |  |          | 9.5      |          | Vdc        |
|                                           |                                                                                                                     | 48 V input             |  |          | 17       |          | Vdc        |
|                                           | power down                                                                                                          | 24 V input             |  |          | 8.5      |          | Vdc        |
|                                           |                                                                                                                     | 48 V input             |  |          | 16       |          | Vdc        |
| positive logic remote on/off <sup>1</sup> |                                                                                                                     |                        |  |          |          |          |            |
| filter                                    |                                                                                                                     | PI type                |  |          |          |          |            |
| Notes:                                    | 1. logic compatibility, open collector ref to -input<br>Module ON, >3.5 Vdc or open circuit<br>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         | 25% step load change                                                                                                            |  |     |       | 500  | µs    |
| adjustability <sup>2</sup> |                                                                                                                                 |  |     | ±10   |      | %     |
| switching frequency        | 100% load, input voltage range                                                                                                  |  |     | 250   |      | kHz   |
| temperature coefficient    |                                                                                                                                 |  |     | ±0.03 |      | %/°C  |
| Notes:                     | 2. trim-up: connect a resistor between the trim pin and +Sense<br>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 |     | 150 | %     |
| thermal shutdown case temp. |                          |     | 110 |     | °C    |

## SAFETY AND COMPLIANCE

| parameter             | conditions/description | min   | typ   | max | units |
|-----------------------|------------------------|-------|-------|-----|-------|
| isolation voltage     | input to output        | 1,500 |       |     | Vdc   |
|                       | input to case          | 1,500 |       |     | Vdc   |
|                       | output to case         | 1,500 |       |     | Vdc   |
| isolation resistance  |                        | 10    |       |     | MΩ    |
| isolation capacitance |                        |       | 1,000 |     | pF    |
| safety approvals      | UL60950-1              |       |       |     |       |
| RoHS compliant        | yes                    |       |       |     |       |

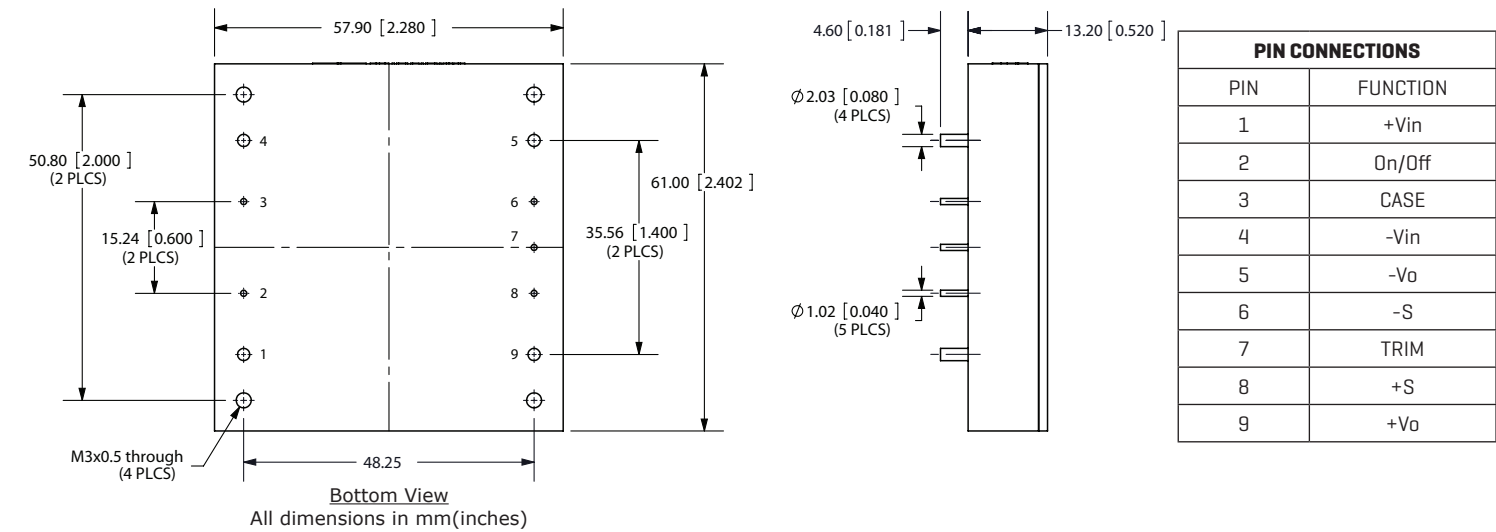
ENVIRONMENTAL

| 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    | 57.9 x 61.0 x 13.2 (2.28 x 2.40 x 0.52 inch) |     |     |     | mm    |
| case material | aluminum baseplate with plastic case         |     |     |     |       |
| weight        |                                              |     | 114 |     | g     |

MECHANICAL DRAWING



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                                  | 08/08/2008 |
| 1.01 | new template applied                             | 08/05/2011 |
| 1.02 | add remote on/off control to the part number key | 11/23/2011 |
| 1.03 | features updated                                 | 12/20/2011 |
| 1.04 | misc. updates and corrections                    | 02/14/2012 |
| 1.05 | V-Infinity branding removed                      | 09/07/2012 |
| 1.06 | updated spec                                     | 04/01/2013 |

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

**CUI INC<sup>®</sup>**

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

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

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