

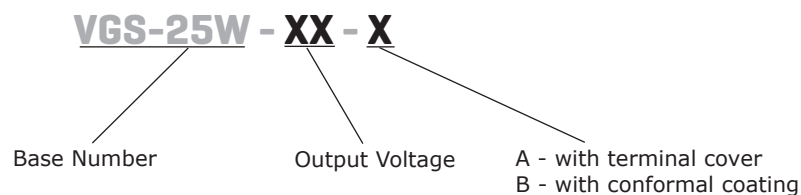
**SERIES: VGS-25W | DESCRIPTION: AC-DC POWER SUPPLY**
**FEATURES**

- wide input range (85 ~ 305 Vac)
- available with conformal coating or terminal cover options
- UL/EN/IEC 62368 certified
- designed to meet IEC/EN 61558 system requirements
- short-circuit, over-current, over-voltage protections
- input over voltage category III design
- CISPR/EN55032 Class B radiated/conducted emissions



| MODEL      | output voltage |                | output current<br>max<br>(A) | output power<br>max<br>(W) | ripple and noise <sup>1</sup><br>max<br>(mVp-p) | efficiency <sup>2</sup><br>typ<br>(%) |
|------------|----------------|----------------|------------------------------|----------------------------|-------------------------------------------------|---------------------------------------|
|            | typ<br>(Vdc)   | range<br>(Vdc) |                              |                            |                                                 |                                       |
| VGS-25W-3  | 3.3            | 2.85~3.6       | 6.0                          | 19.8                       | 100                                             | 78                                    |
| VGS-25W-5  | 5              | 4.5~5.5        | 5.0                          | 25.0                       | 100                                             | 81                                    |
| VGS-25W-12 | 12             | 10.8~13.2      | 2.1                          | 25.2                       | 100                                             | 85                                    |
| VGS-25W-15 | 15             | 13.5~16.5      | 1.7                          | 25.2                       | 100                                             | 86                                    |
| VGS-25W-24 | 24             | 22.0~27.6      | 1.1                          | 26.4                       | 100                                             | 87                                    |
| VGS-25W-48 | 48             | 42.0~54.0      | 0.57                         | 27.36                      | 120                                             | 88                                    |

Notes: 1. Ripple & noise are measured at 20 MHz BW with 47 uF electrolytic and 0.1 uF ceramic capacitors on the output.  
 2. Measured at 230 Vac.

**PART NUMBER KEY**


## INPUT

| parameter                 | conditions/description       | min | typ | max  | units |
|---------------------------|------------------------------|-----|-----|------|-------|
| voltage range             | ac input                     | 85  |     | 305  | Vac   |
|                           | dc input                     | 100 |     | 430  | Vdc   |
| frequency range           |                              | 47  |     | 63   | Hz    |
| current                   | at 115 Vac                   |     |     | 0.6  | A     |
|                           | at 230 Vac                   |     |     | 0.34 | A     |
| inrush current            | at 115 Vac, cold start       |     | 20  |      | A     |
|                           | at 230 Vac, cold start       |     | 40  |      | A     |
| leakage current           | at 277 Vac                   |     |     | 0.5  | mA    |
| no load power consumption | 48 V models, at 230 Vac      |     |     | 0.5  | W     |
|                           | all other models, at 230 Vac |     |     | 0.3  | W     |

## OUTPUT

| parameter                  | conditions/description            | min | typ  | max   | units |
|----------------------------|-----------------------------------|-----|------|-------|-------|
| capacitive load            | 3.3 V models                      |     |      | 5,000 | μF    |
|                            | 5 V models                        |     |      | 4,000 | μF    |
|                            | 12 V models                       |     |      | 3,000 | μF    |
|                            | 15 V models                       |     |      | 2,000 | μF    |
|                            | 24 V models                       |     |      | 1,000 | μF    |
|                            | 48 V models                       |     |      | 500   | μF    |
| initial set point accuracy | 3.3 V models, full load range     |     | ±3   |       | %     |
|                            | 5 V models, full load range       |     | ±2   |       | %     |
|                            | all other models, full load range |     | ±1   |       | %     |
| line regulation            | 3.3 & 5 V models, rated load      |     | ±0.5 | ±1    | %     |
|                            | all other models, rated load      |     | ±0.5 |       | %     |
| load regulation            | 3.3 & 5 V models, 0~100% load     |     | ±1   | ±2    | %     |
|                            | all other models, 0~100% load     |     | ±0.5 | ±1    | %     |
| switching frequency        |                                   |     | 65   |       | kHz   |
| start-up time              |                                   |     | 0.3  |       | s     |
| hold-up time               | at 115 Vac                        |     | 8    |       | ms    |
|                            | at 230 Vac                        |     | 60   |       | ms    |

## PROTECTIONS

| parameter                | conditions/description              | min | typ | max   | units |
|--------------------------|-------------------------------------|-----|-----|-------|-------|
| over current protection  | auto recovery                       | 110 |     | 300   | %     |
| over voltage protection  | 3.3 V models, auto recovery, hiccup |     |     | 6.75  | Vdc   |
|                          | 5 V models, auto recovery, hiccup   |     |     | 7.75  | Vdc   |
|                          | 12 V models, auto recovery, hiccup  |     |     | 16.2  | Vdc   |
|                          | 15 V models, auto recovery, hiccup  |     |     | 20.25 | Vdc   |
|                          | 24 V models, auto recovery, hiccup  |     |     | 32.4  | Vdc   |
|                          | 48 V models, auto recovery, hiccup  |     |     | 60.0  | Vdc   |
| short circuit protection | continuous, auto recovery, hiccup   |     |     |       |       |

## SAFETY & COMPLIANCE

| parameter           | conditions/description                                             | min   | typ | max | units |
|---------------------|--------------------------------------------------------------------|-------|-----|-----|-------|
| isolation voltage   | input to output, 1 min, <10 mA                                     | 4,000 |     |     | Vac   |
|                     | input to ground, 1 min, <10 mA                                     | 2,000 |     |     | Vac   |
|                     | output to ground, 1 min, <10 mA                                    | 1,250 |     |     | Vac   |
| safety approvals    | certified to 62368: IEC, EN, UL<br>designed to meet 61558: IEC, EN |       |     |     |       |
| safety class        | class I                                                            |       |     |     |       |
| conducted emissions | CISPR32/EN55032 CLASS B                                            |       |     |     |       |

## SAFETY & COMPLIANCE (CONTINUED)

| parameter                     | conditions/description                                                  | min | typ     | max | units |
|-------------------------------|-------------------------------------------------------------------------|-----|---------|-----|-------|
| radiated emissions            | CISPR32/EN55032 CLASS B                                                 |     |         |     |       |
| ESD                           | IEC/EN 61000-4-2 Contact ±6KV/Air ±8KV, perf. Criteria A                |     |         |     |       |
| radiated immunity             | IEC/EN61000-4-3 10V/m, perf. Criteria A                                 |     |         |     |       |
| EFT/burst                     | IEC/EN61000-4-4 ±2KV, perf. Criteria A                                  |     |         |     |       |
| surge                         | IEC/EN61000-4-5 line to line ±1KV/line to ground ±2KV, perf. Criteria A |     |         |     |       |
| conducted immunity            | IEC/EN61000-4-6 10Vr.m.s, perf. Criteria A                              |     |         |     |       |
| voltage dips and interruption | IEC/EN61000-4-11 0%, 70%, perf. Criteria B                              |     |         |     |       |
| RoHS compliant                | yes                                                                     |     |         |     |       |
| MTBF                          | as per MIL-HDBK-217F at 25 °C                                           |     | 450,000 |     | hrs   |

## ENVIRONMENTAL

| parameter               | conditions/description | min | typ  | max | units |
|-------------------------|------------------------|-----|------|-----|-------|
| operating temperature   | see derating curve     | -30 |      | 70  | °C    |
| storage temperature     |                        | -40 |      | 85  | °C    |
| operating humidity      | non-condensing         | 20  |      | 90  | %     |
| storage humidity        | non-condensing         | 0   |      | 95  | %     |
| temperature coefficient |                        |     | 0.03 |     | %/°C  |

## MECHANICAL

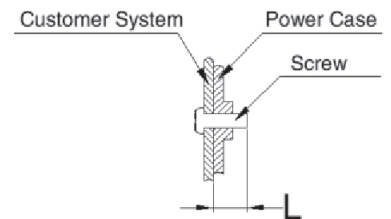
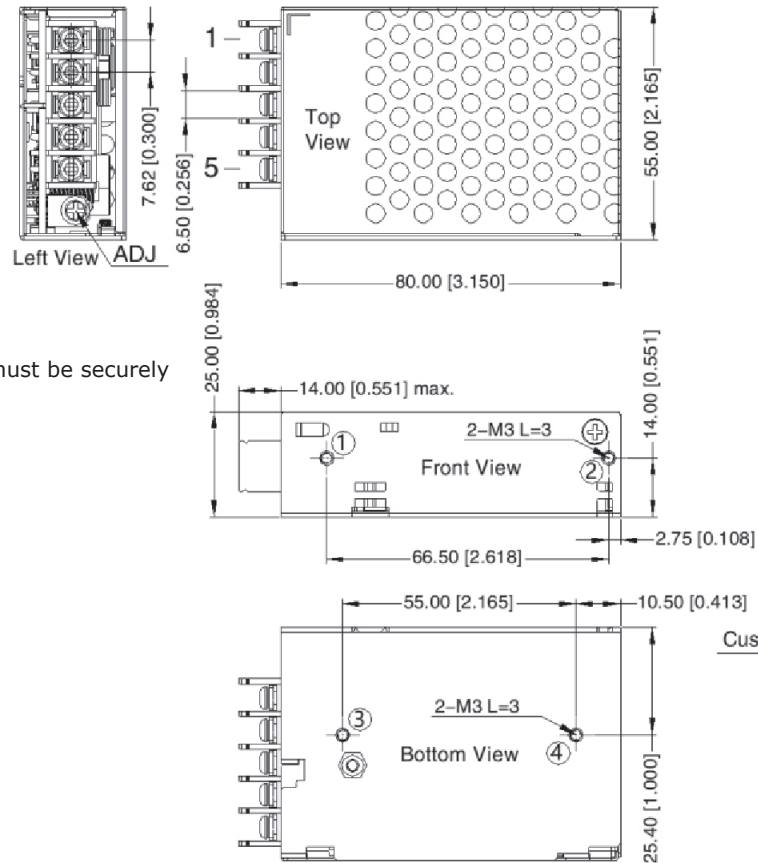
| parameter     | conditions/description | min | typ | max | units |
|---------------|------------------------|-----|-----|-----|-------|
| dimensions    | 80.00 x 55.00 x 25.00  |     |     |     | mm    |
| weight        |                        |     | 115 |     | g     |
| cooling       | natural convection     |     |     |     |       |
| case material | metal (AL5052, SGCC)   |     |     |     |       |

## MECHANICAL DRAWING

units: mm [inches]  
 tolerance:  $\pm 1.00$  [ $\pm 0.039$ ]  
 wire range: 22~12 AWG  
 connector tightening torque: M3, 0.4 N·m

| PIN OUT |                                                                                   |
|---------|-----------------------------------------------------------------------------------|
| PIN     | Function                                                                          |
| 1       | AC (L)                                                                            |
| 2       | AC (N)                                                                            |
| 3       |  |
| 4       | -Vo                                                                               |
| 5       | +Vo                                                                               |

Note: At least one position ①~④ must be securely connected to the GND. 

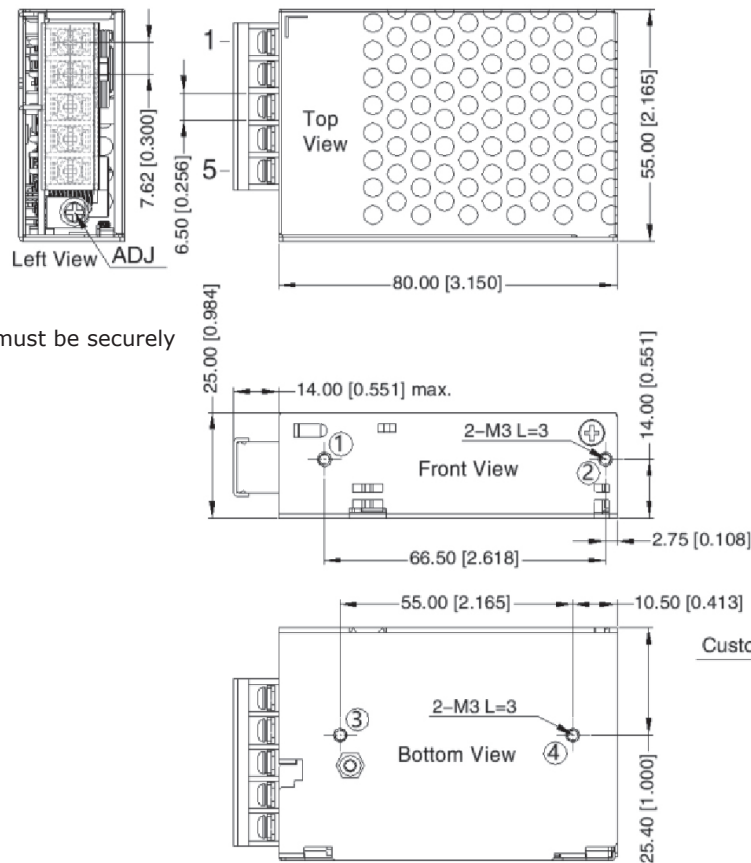


| Position | Screw Spec. | L (max) | Torque (max) |
|----------|-------------|---------|--------------|
| ① ~ ④    | M3          | 3 mm    | 0.4 N·m      |

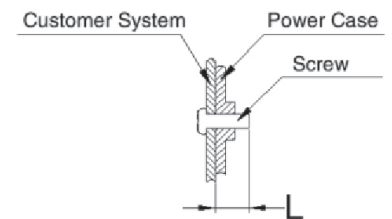
## MECHANICAL DRAWING (CONTINUED)

units: mm [inches]  
 tolerance:  $\pm 1.00$  [ $\pm 0.039$ ]  
 wire range: 22~12 AWG  
 connector tightening torque: M3, 0.4 N·m

| PIN OUT |            |
|---------|------------|
| PIN     | Function   |
| 1       | AC (L)     |
| 2       | AC (N)     |
| 3       | $\text{⏏}$ |
| 4       | -Vo        |
| 5       | +Vo        |



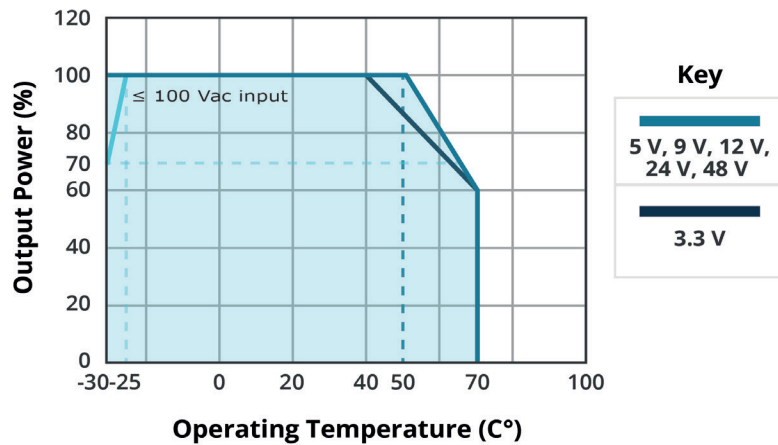
Note: At least one position ①~④ must be securely connected to the GND.  $\text{⏏}$



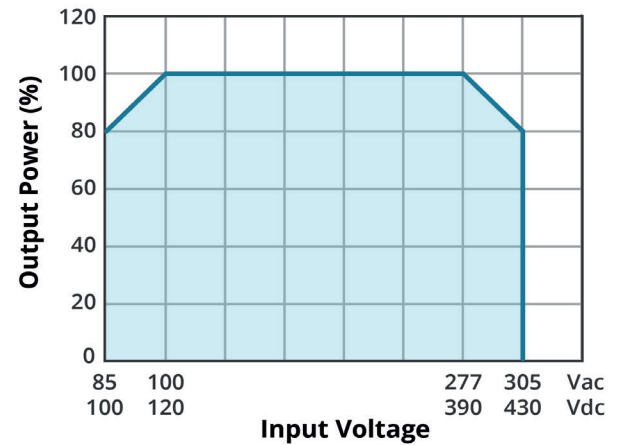
| Position | Screw Spec. | L (max) | Torque (max) |
|----------|-------------|---------|--------------|
| ① ~ ④    | M3          | 3 mm    | 0.4 N·m      |

## DERATING CURVES

**TEMPERATURE DERATING CURVE**

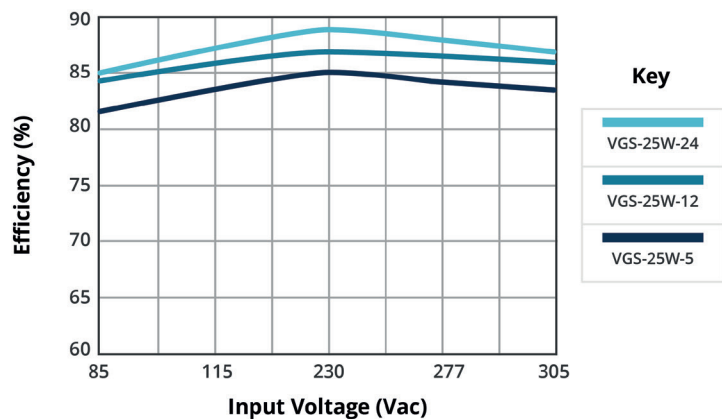


**INPUT VOLTAGE DERATING CURVE (25°C)**

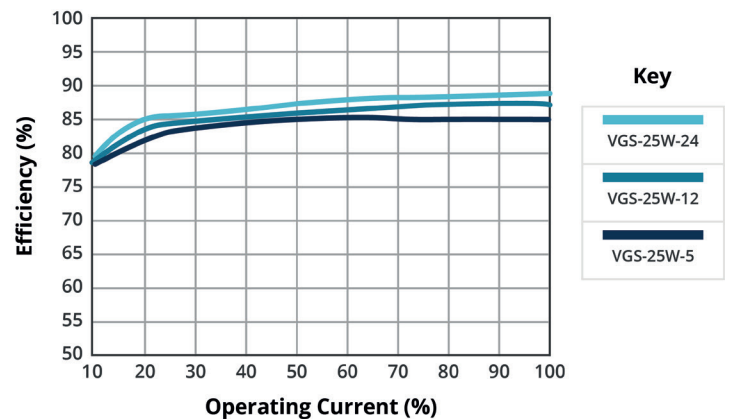


## EFFICIENCY CURVES

**EFFICIENCY VS INPUT VOLTAGE (Full load)**



**EFFICIENCY VS OUTPUT LOAD (Vin = 230 Vac)**



## REVISION HISTORY

| rev. | description     | date       |
|------|-----------------|------------|
| 1.0  | initial release | 02/10/2021 |
| 1.01 | UKCA mark added | 09/09/2021 |

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



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

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

CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

CUI reserves the right to make changes to the product at any time without notice. Information provided by CUI is believed to be accurate and reliable. However, no responsibility is assumed by CUI for its use, nor for any infringements of patents or other rights of third parties which may result from its use.

CUI products are not authorized or warranted for use as critical components in equipment that requires an extremely high level of reliability. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.