

**SERIES: VGD-35 | DESCRIPTION: AC-DC POWER SUPPLY**
**FEATURES**

- universal input voltage range (85~264 Vac)
- provides dual outputs; independently isolated
- short circuit, over current and over voltage protections
- safety certified: IEC/EN/UL 62368
- designed to meet: IEC/EN/UL 60335
- class B EMI performance, meets CISPR32 / EN 55032



| MODEL       | output<br>voltage<br>(Vdc) | output<br>current |            | output<br>power <sup>1</sup><br>max<br>(W) | ripple<br>and noise <sup>2</sup><br>max<br>(mVp-p) | efficiency<br><br>typ<br>(%) |
|-------------|----------------------------|-------------------|------------|--------------------------------------------|----------------------------------------------------|------------------------------|
|             |                            | min<br>(A)        | max<br>(A) |                                            |                                                    |                              |
| VGD-35-D512 | 5                          | 0.4               | 4          | 32                                         | 80                                                 | 81                           |
|             | 12                         | 0.1               | 1          |                                            | 150                                                |                              |
| VGD-35-D524 | 5                          | 0.22              | 2.2        | 35                                         | 80                                                 | 83                           |
|             | 24                         | 0.1               | 1          |                                            | 150                                                |                              |

Note: 1. Maximum total combined power.  
 2. Ripple & noise are measured at 20 MHz BW with 47  $\mu$ F aluminum electrolytic capacitor and 0.1  $\mu$ F ceramic capacitor on the output.

**PART NUMBER KEY**


## INPUT

| parameter      | conditions/description         | min | typ | max  | units |
|----------------|--------------------------------|-----|-----|------|-------|
| voltage        |                                | 85  |     | 264  | Vac   |
|                |                                | 120 |     | 373  | Vdc   |
| frequency      |                                | 47  |     | 63   | Hz    |
| input current  | 115 Vac                        |     |     | 0.75 | A     |
|                | 230 Vac                        |     |     | 0.5  | A     |
| inrush current | 115 Vac, full load, cold start |     | 30  |      | A     |
|                | 230 Vac, full load, cold start |     | 50  |      | A     |

## OUTPUT

| parameter               | conditions/description                         | min  | typ   | max  | units |
|-------------------------|------------------------------------------------|------|-------|------|-------|
| line regulation         | Vo1, at full load                              |      | ±0.5  |      | %     |
|                         | Vo2, at full load                              |      | ±1.5  |      | %     |
| load regulation         | Vo1, 10% ~ 100% (balanced load)                |      | ±0.5  |      | %     |
|                         | Vo2, 10% ~ 100% (balanced load)                |      | ±5.0  |      | %     |
| temperature coefficient |                                                |      | ±0.03 |      | %/°C  |
| hold-up time            | 115 Vac, full load                             |      | 5     |      | ms    |
|                         | 230 Vac, full load                             |      | 30    |      | ms    |
| adjustability           | adjustable with built-in trim pot <sup>1</sup> | 4.75 |       | 5.50 | Vdc   |
| output voltage accuracy | Vo1, full load range                           |      | ±2.0  |      | %     |
|                         | Vo2, full load range                           |      | ±8.0  |      | %     |

Note: 1. Adjustment of 5 V output only.

## PROTECTIONS

| parameter                | conditions/description              | min  | typ | max  | units |
|--------------------------|-------------------------------------|------|-----|------|-------|
| over voltage protection  | output clamped                      | 5.75 |     | 6.75 | V     |
| overload protection      | hiccup mode, automatically recovers | 110  |     | 220  | %     |
| short circuit protection | hiccup, continuous, self-recovery   |      |     |      |       |

## SAFETY & COMPLIANCE

| parameter            | conditions/description                                                     | min | typ   | max | units |
|----------------------|----------------------------------------------------------------------------|-----|-------|-----|-------|
| isolation voltage    | output to output                                                           |     | 500   |     | Vdc   |
|                      | input to output                                                            |     | 3,000 |     | Vac   |
|                      | input to ground                                                            |     | 2,000 |     | Vac   |
|                      | output to ground                                                           |     | 500   |     | Vac   |
| isolation resistance | input to output at 500 Vdc at 25°C                                         | 100 |       |     | MΩ    |
| safety approvals     | IEC/EN/UL62368<br>(designed to meet IEC/EN/UL60335)                        |     |       |     |       |
| safety class         | Class I                                                                    |     |       |     |       |
| conducted emissions  | CISPR32/ EN55032 Class B                                                   |     |       |     |       |
| radiated emissions   | CISPR32/ EN55032 Class B                                                   |     |       |     |       |
| ESD                  | IEC/EN61000-4-2, 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/EN 61000-4-5, Line to Line ±2KV / Line to Ground±4KV, perf. Criteria A |     |       |     |       |
| conducted immunity   | IEC/EN61000-4-6, 10 Vrms, perf. Criteria A                                 |     |       |     |       |

## SAFETY & COMPLIANCE (CONTINUED)

| parameter                                | conditions/description                     | min     | typ | max | units |
|------------------------------------------|--------------------------------------------|---------|-----|-----|-------|
| power-frequency magnetic fields immunity | EN 61000-4-8                               |         |     |     |       |
| voltage dips & interruptions             | IEC/EN61000-4-11, 0%,70%, perf. Criteria B |         |     |     |       |
| MTBF                                     | MIL-HDBK-217F at 25°C                      | 300,000 |     |     | hrs   |
| RoHS compliant                           | yes                                        |         |     |     |       |

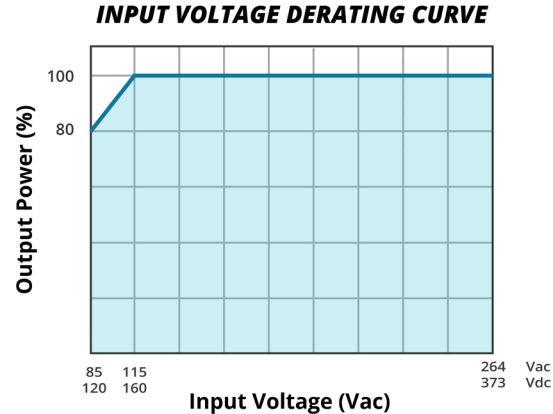
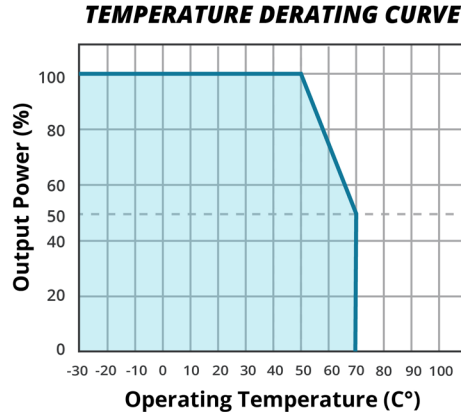
## ENVIRONMENTAL

| parameter             | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature | see derating curve     | -30 |     | 70  | °C    |
| storage temperature   |                        | -40 |     | 85  | °C    |
| operating humidity    | non-condensing         | 10  |     | 95  | %     |
| storage humidity      | non-condensing         | 10  |     | 95  | %     |

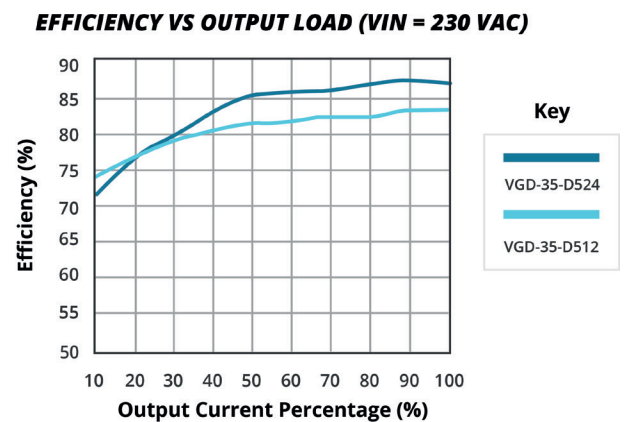
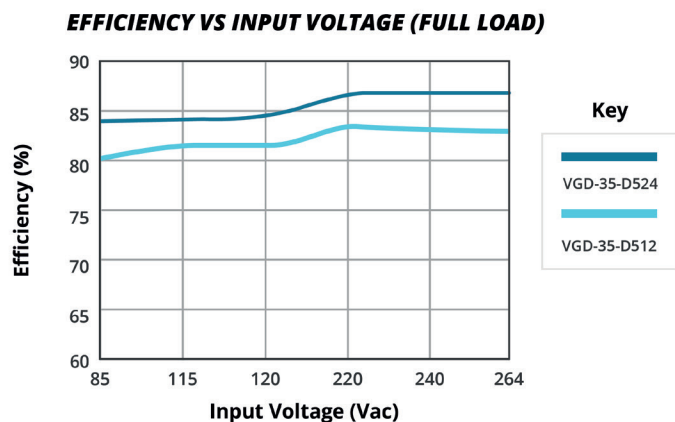
## MECHANICAL

| parameter      | conditions/description                         | min | typ | max | units |
|----------------|------------------------------------------------|-----|-----|-----|-------|
| dimensions     | 3.9 x 3.8 x 1.2 (99 x 97 x 30 mm)              |     |     |     | inch  |
| cooling method | free air convection (see derating curve below) |     |     |     |       |
| weight         |                                                |     | 210 |     | g     |
| case material  | Metal (AL1100, SGCC)                           |     |     |     |       |

## DERATING CURVES



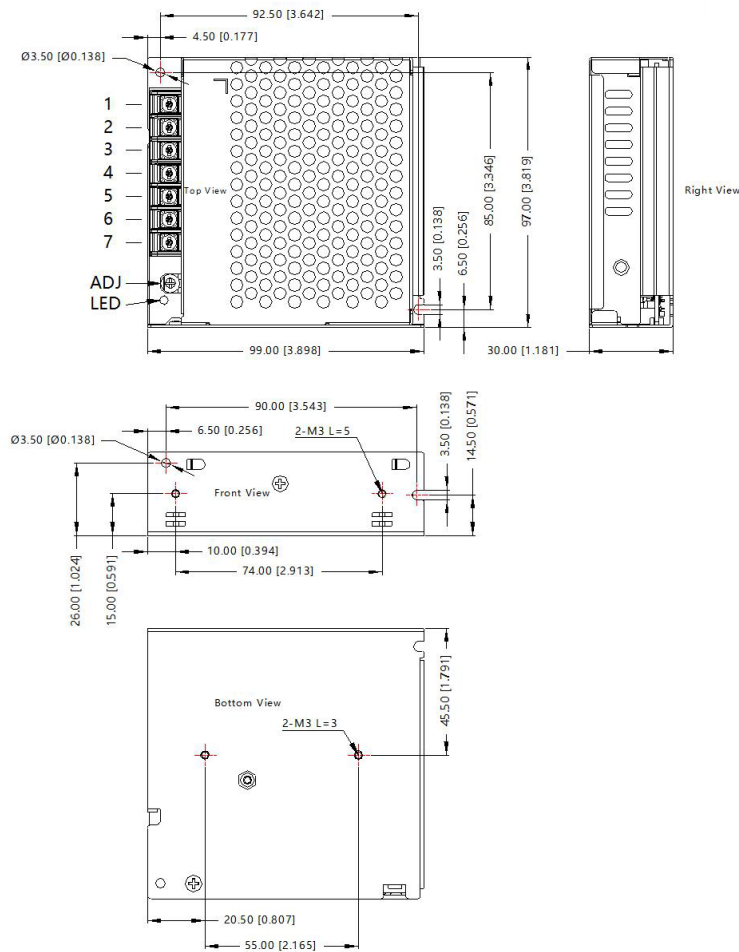
## EFFICIENCY CURVES



# MECHANICAL DRAWING

units: mm [inches]  
tolerance:  $\pm 1.0$  [ $\pm 0.039$ ]  
wire range: 22-14 AWG  
tightening torque: M3, 0.5N.m

| PIN CONNECTIONS |          |
|-----------------|----------|
| Pin             | Function |
| 1               | AC (L)   |
| 2               | AC (N)   |
| 3               | $\perp$  |
| 4               | -Vo2     |
| 5               | +Vo2     |
| 6               | -Vo1     |
| 7               | +Vo1     |



## REVISION HISTORY

| rev. | description                            | date       |
|------|----------------------------------------|------------|
| 1.0  | initial release                        | 11/08/2019 |
| 1.01 | company logo updated                   | 12/22/2020 |
| 1.02 | derating and efficiency curves updated | 04/28/2021 |

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



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