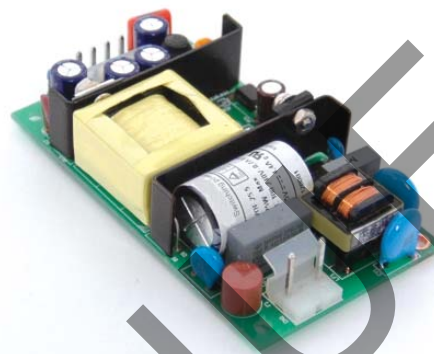


**SERIES:** VOF-25 | **DESCRIPTION:** AC-DC POWER SUPPLY

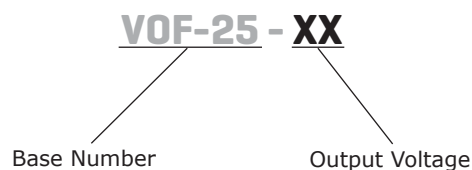
**FEATURES**

- up to 25 W continuous power
- compact size
- universal input (85~264 Vac)
- single output from 3.3~24 V
- user trimmable output voltage
- 3000 V isolation
- over current, over voltage, and short circuit protections
- UL/cUL and TUV 60950-1 safety approvals
- efficiency up to 82%



| MODEL      | output voltage | output current max | output power max | ripple <sup>1</sup> and noise max | efficiency |
|------------|----------------|--------------------|------------------|-----------------------------------|------------|
|            | (Vdc)          | (A)                | (W)              | (mVp-p)                           | typ (%)    |
| VOF-25-3.3 | 3.3            | 4.4                | 15               | 50                                | 70         |
| VOF-25-5   | 5              | 4.4                | 22               | 50                                | 73         |
| VOF-25-7.5 | 7.5            | 3.0                | 23               | 75                                | 73         |
| VOF-25-9   | 9              | 2.7                | 24               | 90                                | 77         |
| VOF-25-12  | 12             | 2.0                | 24               | 120                               | 80         |
| VOF-25-15  | 15             | 1.6                | 24               | 150                               | 80         |
| VOF-25-24  | 24             | 1.0                | 24               | 240                               | 82         |

Notes: 1. Ripple & noise are measured at 20 MHz BW with 0.1  $\mu$ F ceramic cap and a 10  $\mu$ F electrolytic capacitors on the output and the two earth ground pads are connected to input earth ground.

**PART NUMBER KEY**


## INPUT

| parameter      | conditions/description                                                 | min       | typ         | max        | units      |
|----------------|------------------------------------------------------------------------|-----------|-------------|------------|------------|
| voltage        |                                                                        | 85<br>120 |             | 264<br>375 | Vac<br>Vdc |
| frequency      |                                                                        | 47        |             | 63         | Hz         |
| current        | at 110 Vac<br>at 220 Vac                                               |           | 0.7<br>0.35 |            | A<br>A     |
| inrush current | at 110 Vac, full load, cold start<br>at 220 Vac, full load, cold start |           |             | 20<br>40   | A<br>A     |
| input fuse     | built-in, non-user serviceable                                         |           |             |            |            |

## OUTPUT

| parameter               | conditions/description             | min | typ   | max | units |
|-------------------------|------------------------------------|-----|-------|-----|-------|
| line regulation         | high line to low line at full load |     | ±0.5  |     | %     |
| load regulation         | full load to 10% load              |     | ±1    |     | %     |
| temperature coefficient |                                    |     | ±0.05 |     | %/°C  |
| hold-up time            | 115 Vac at full load               | 16  |       |     | ms    |
| adjustability           | adjustable with built-in trim pot  | -5  |       | +5  | %     |
| switching frequency     |                                    | 45  | 50    | 55  | kHz   |

## PROTECTIONS

| parameter                | conditions/description                                    | min | typ | max | units |
|--------------------------|-----------------------------------------------------------|-----|-----|-----|-------|
| over voltage protection  | clamped by TVS                                            |     |     | 115 | %     |
| over current protection  | automatically recovers                                    |     | 105 |     | %Io   |
| short circuit protection | protected, long term short circuit may reduce reliability |     |     |     |       |

## SAFETY & COMPLIANCE

| parameter            | conditions/description                                                                                          | min                     | nom | max | units             |
|----------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------|-----|-----|-------------------|
| isolation voltage    | primary to secondary for 1 minute<br>primary to transformer core for 1 minute<br>primary to ground for 1 minute | 3,000<br>1,500<br>1,500 |     |     | Vac<br>Vac<br>Vac |
| isolation resistance | input to output at 500 Vdc at 25°C                                                                              | 50                      |     |     | MΩ                |
| safety approvals     | TUV EN 60950, CE, UL/cUL 60950-1                                                                                |                         |     |     |                   |
| EMI/EMC              | FCC class B, EN 55022 class B                                                                                   |                         |     |     |                   |
| leakage current      |                                                                                                                 |                         |     | 1.5 | mA                |
| RoHS compliant       | yes                                                                                                             |                         |     |     |                   |
| MTBF                 | according to MIL-HDBK-217F                                                                                      | 250,000                 |     |     | hours             |

## ENVIRONMENTAL

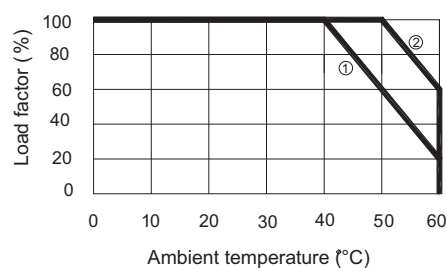
| parameter             | conditions/description | min | nom             | max | units   |
|-----------------------|------------------------|-----|-----------------|-----|---------|
| operating temperature | see derating curve     | 0   |                 | 60  | °C      |
| storage temperature   |                        | -20 |                 | 85  | °C      |
| operating humidity    | non-condensing         | 20  |                 | 90  | %       |
| storage humidity      | non-condensing         | 20  |                 | 95  | %       |
| operating altitude    |                        |     | 10,000<br>3,000 |     | ft<br>m |
| storage altitude      |                        |     | 30,000<br>9,000 |     | ft<br>m |

## MECHANICAL

| parameter      | conditions/description                                           | min | typ | max  | units |
|----------------|------------------------------------------------------------------|-----|-----|------|-------|
| dimensions     | 3.500 x 2.008 x 0.9803 (88.9 x 51 x 24.9 mm)                     |     |     |      | inch  |
| weight         |                                                                  |     |     | 0.09 | kg    |
| cooling method | free air convection or forced air<br>(see derating curves below) |     |     |      |       |

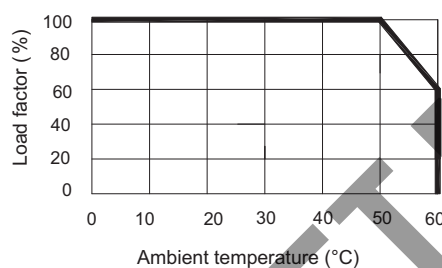
## DERATING CURVES

1. output power vs. ambient temperature  
a. 3.3, 5 V models



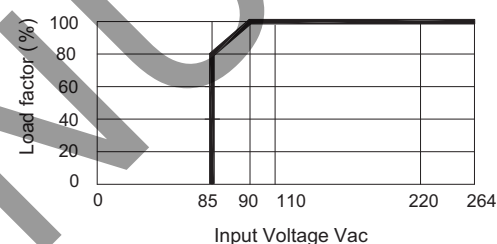
① Convection  
② Forced air (0.5m<sup>3</sup>/min) (18 CFM)

b. all other models



① Forced air (0.5m<sup>3</sup>/min) (18 CFM)

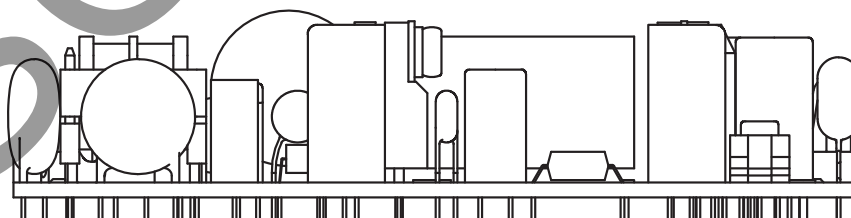
2. output power vs. input voltage  
all models



## MATING CONNECTORS

| parameter       | conditions/description                                                   |
|-----------------|--------------------------------------------------------------------------|
| ac input (CN1)  | mates with Molex housing 09-50-3031 with Molex 2878 series crimp contact |
| dc output (CN2) | mates with Molex housing 09-50-3041 with Molex 2878 series crimp contact |

## MOUNTING METHOD



### Horizontal

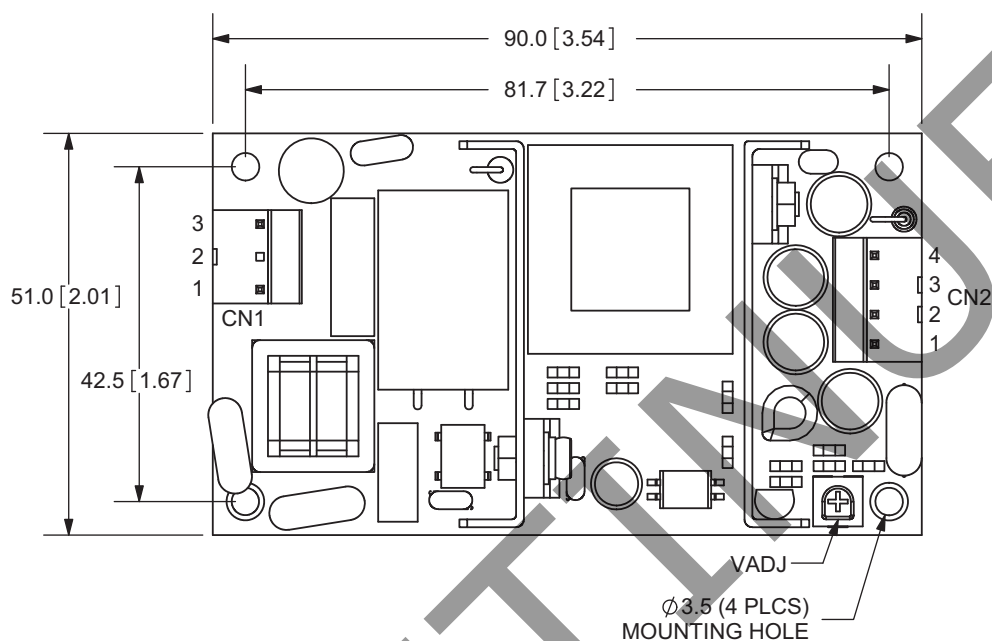
(performance evaluations conducted under this mounting method)

## MECHANICAL DRAWING

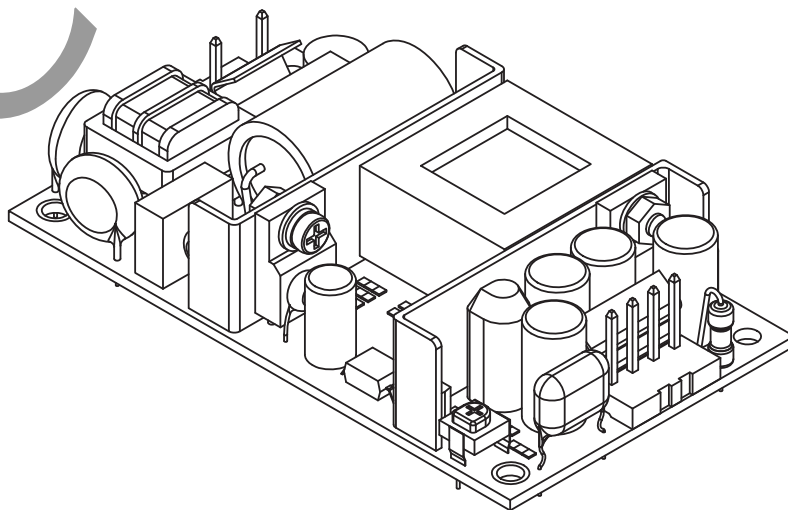
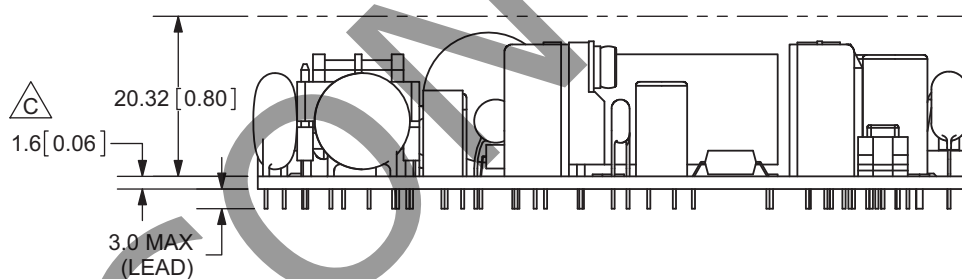
units: mm [inches]

tolerance:  $\pm 0.3$  [ $\pm 0.01$ ]

| CN1 |        |
|-----|--------|
| 1   | L      |
| 2   | no pin |
| 3   | N      |



| CN2 |     |
|-----|-----|
| 1   | -Vo |
| 2   | -Vo |
| 3   | +Vo |
| 4   | +Vo |



## REVISION HISTORY

| rev. | description                                         | date       |
|------|-----------------------------------------------------|------------|
| 1.0  | initial release                                     | 04/03/2009 |
| 1.01 | corrected CN1 connector designation on mech drawing | 02/16/2010 |
| 1.02 | dimension added to drawing                          | 05/02/2011 |
| 1.03 | new template applied                                | 05/13/2011 |
| 1.04 | added MTBF data                                     | 09/20/2011 |
| 1.05 | V-Infinity branding removed                         | 08/17/2012 |

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

**CUI INC®**

**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.

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