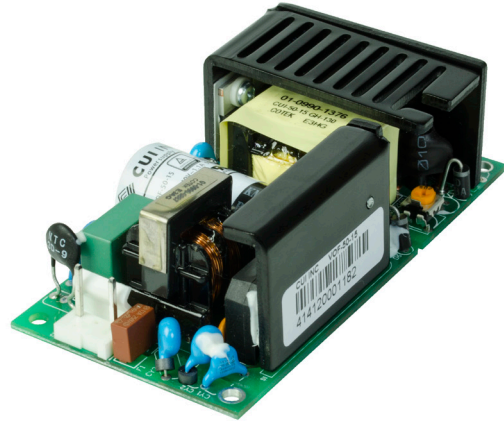


**SERIES:** VOF-50 | **DESCRIPTION:** AC-DC POWER SUPPLY

**FEATURES**

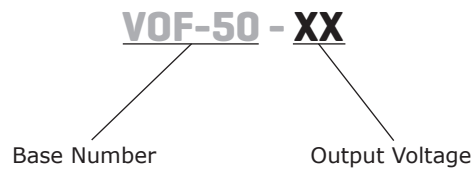
- up to 50 W continuous power
- compact size
- universal input (90~277 Vac)
- single output from 5~24 Vdc
- user trimmable output voltage option
- no load power consumption <0.19W
- 3000 Vac isolation
- over current, over voltage, and short circuit protections
- UL/cUL and TUV 60950-1 safety approvals
- efficiency up to 89%



| MODEL     | output voltage | output current | output power | ripple and noise <sup>1</sup> | efficiency |
|-----------|----------------|----------------|--------------|-------------------------------|------------|
|           | (Vdc)          | max (A)        | max (W)      | max (mVp-p)                   | typ (%)    |
| VOF-50-5  | 5              | 6.67           | 33.35        | 120                           | 82         |
| VOF-50-12 | 12             | 4.2            | 50           | 120                           | 87         |
| VOF-50-15 | 15             | 3.4            | 50           | 150                           | 88         |
| VOF-50-24 | 24             | 2.1            | 50           | 240                           | 89         |

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                   |  | 90  |            | 277          | Vac    |
| frequency                 |  | 47  |            | 63           | Hz     |
| input current             | at 115 Vac, full load<br>at 230 Vac, full load |     | 1.1<br>0.5 |              | A<br>A |
| inrush current            | at 230 Vac, cold start                         |     | 50         |              | A      |
| leakage current           | at 277 Vac                                     |     |            | 3.5          | mA     |
| no load power consumption | at 110 Vac<br>at 230 Vac                       |     |            | 0.19<br>0.30 | W<br>W |
| input fuse                | 2 A/250V time delay fuse (included)            |     |            |              |        |

## OUTPUT

| parameter                  | conditions/description   | min | typ                         | max | units                            |
|----------------------------|--|-----|-----------------------------|-----|----------------------------------|
| line regulation            | low line to high line  |     | ±0.5                        |     | %                                |
| load regulation            | full load to 10% load  |     | ±1                          |     | %                                |
| initial set point accuracy |  |     | ±3                          |     | %                                |
| transient response         | 1 kHz, 10~100% load<br>VOF-50-5<br>VOF-50-12<br>VOF-50-15<br>VOF-50-24 |     | 500<br>1200<br>1500<br>2400 |     | mVp-p<br>mVp-p<br>mVp-p<br>mVp-p |
| hold-up time               | at 115 Vac, full load  | 8   |                             |     | ms                               |
| start-up time              | at 115 Vac, full load  |     | 50                          |     | ms                               |
| start-up delay             | at 115 Vac, full load  |     | 1000                        |     | ms                               |
| adjustability              | built in trim pot  |     | ±5                          |     | %                                |
| switching frequency        |  | 61  | 65                          | 69  | kHz                              |
| temperature coefficient    |  |     | ±0.03                       |     | %/°C                             |

## PROTECTIONS

| parameter                | conditions/description | min | typ | max | units |
|--------------------------|------------------------|-----|-----|-----|-------|
| short circuit protection | hiccup, auto recovery  | 110 |     |     | %     |
| over current protection  | hiccup, auto recovery  | 110 |     |     | %     |
| over voltage protection  | clamped by TVS         |     |     |     |       |

## SAFETY & COMPLIANCE

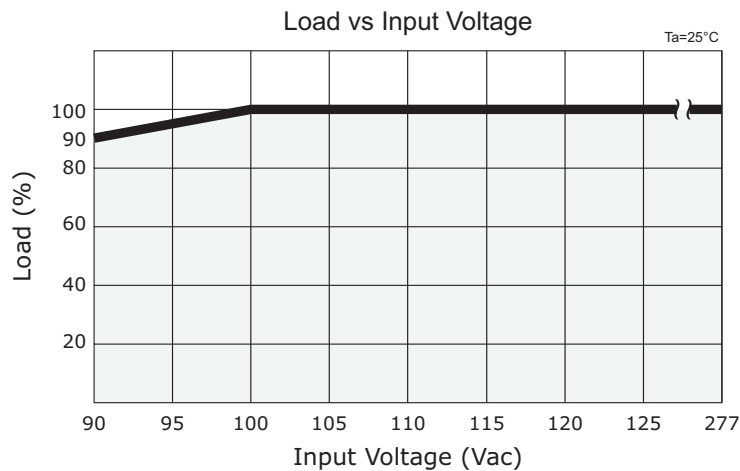
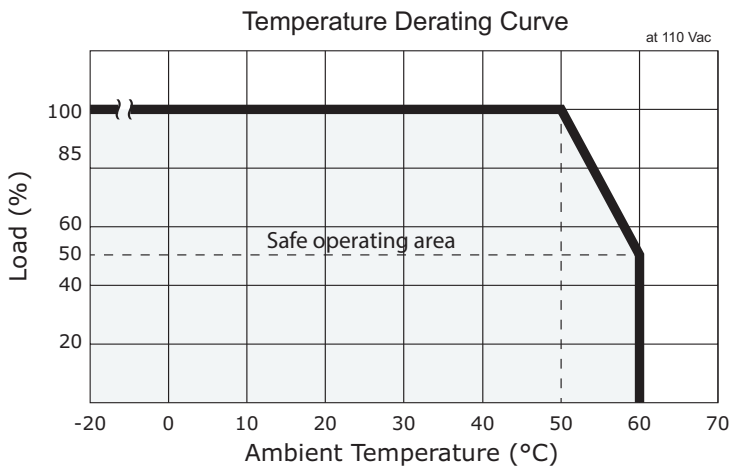
| parameter            | conditions/description  | min                     | typ | max | units             |
|----------------------|---|-------------------------|-----|-----|-------------------|
| isolation voltage    | input to output<br>input to ground<br>output to ground  | 3,000<br>1,500<br>1,500 |     |     | Vac<br>Vac<br>Vac |
| safety approvals     | UL60950-1, EN60950-1  |                         |     |     |                   |
| EMI/EMC <sup>1</sup> | EN 55022: 2010 Class B, EN 61204-3:2000, EN 61000-6-3: 2007 +A1: 2011, EN 61000-3-2: 2006 +A2: 2009, EN 61000-3-3: 2008, EN 55024: 2010, EN 61000-6-1: 2007, ENV 50204: 1995, CE, FCC |                         |     |     |                   |
| class                | class II  |                         |     |     |                   |
| MTBF                 | as per MIL-HDBK-217F at 25 °C, full load  | 250,000                 |     |     | hours             |
| RoHS                 | 2011/65/EU  |                         |     |     |                   |

Notes: 1. The power supply is considered a component which will be installed into final equipment. The final equipment still must be tested to meet the necessary EMC directives.

## ENVIRONMENTAL

| parameter             | conditions/description   | min | typ  | max | units |
|-----------------------|--|-----|------|-----|-------|
| operating temperature | see derating curves  | -20 |      | 60  | °C    |
| storage temperature   |  | -40 |      | 85  | °C    |
| operating humidity    | non-condensing   | 20  |      | 90  | %     |
| storage humidity      | non-condensing   | 20  |      | 90  | %     |
| operating altitude    |  |     | 2000 |     | m     |
| vibration & shock     | 10~3000Hz, 10 minutes per cycle, for 1 hour along each of the X, Y, and Z axes |     | 2    |     | G     |

## DERATING CURVES



## MECHANICAL

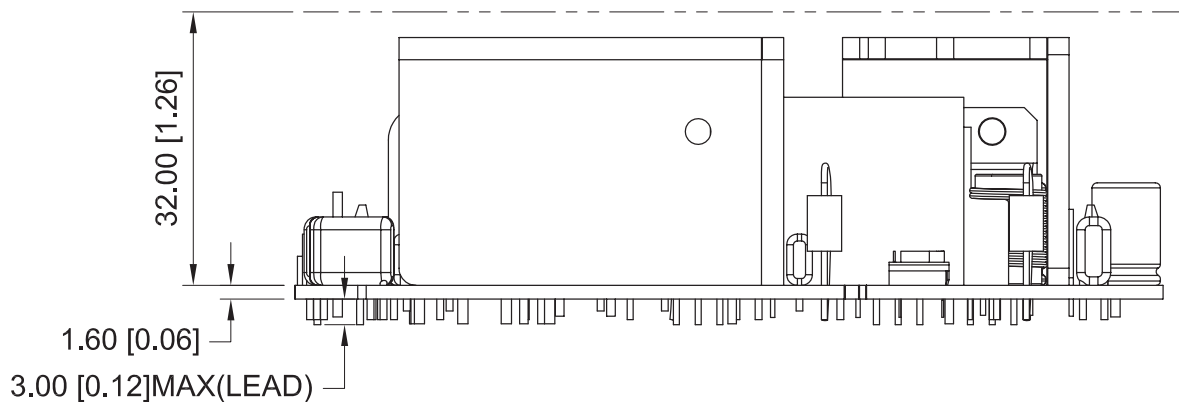
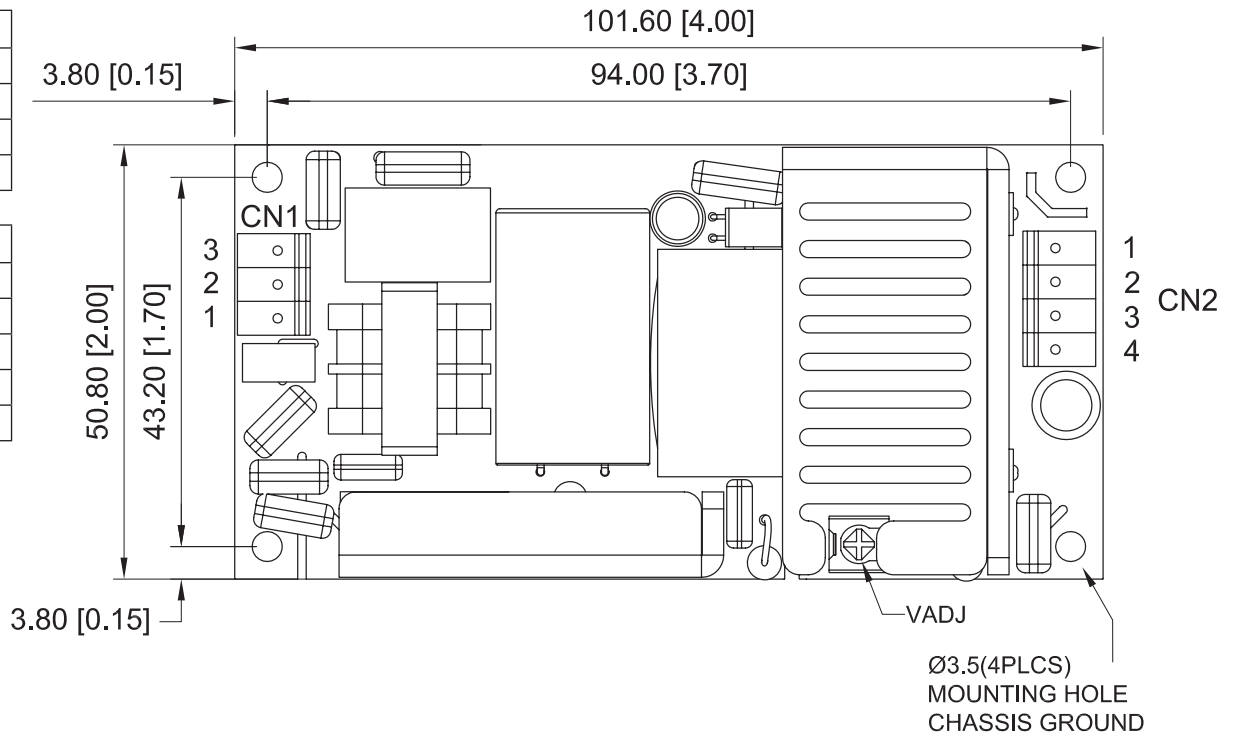
| parameter      | conditions/description                        | min | typ | max | units |
|----------------|---|-----|-----|-----|-------|
| dimensions     | 101.6 x 50.8 x 33.6 (4.00 x 2.00 x 1.32 inch) |     |     |     | mm    |
| weight         |   |     | 160 |     | g     |
| cooling method | open frame (convection)                       |     |     |     |       |

## MECHANICAL DRAWING

units: mm[inch]  
tolerance: ±0.30

| CN1 |          |
|-----|----------|
| PIN | Function |
| 1   | L        |
| 2   | NP       |
| 3   | N        |

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



- Notes:
1. CN1 mates with Molex housing 09-50-3031 with Molex 2478 series crimp contact or equivalent.
  2. CN2 mates with Molex housing 09-50-3041 with Molex 2478 series crimp contact or equivalent.
  3. All specifications are measured at Ta=25°C, 230 Vac input voltage, and rated output load unless otherwise specified.

## REVISION HISTORY

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| rev. | description       | date       |
|------|-------------------|------------|
| 1.0  | initial release   | 04/08/2014 |
| 1.01 | updated datasheet | 05/09/2014 |
| 1.02 | updated datasheet | 07/22/2014 |

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



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

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