

**SERIES:** VF-D250-DXXA | **DESCRIPTION:** AC-DC POWER SUPPLY

**FEATURES**

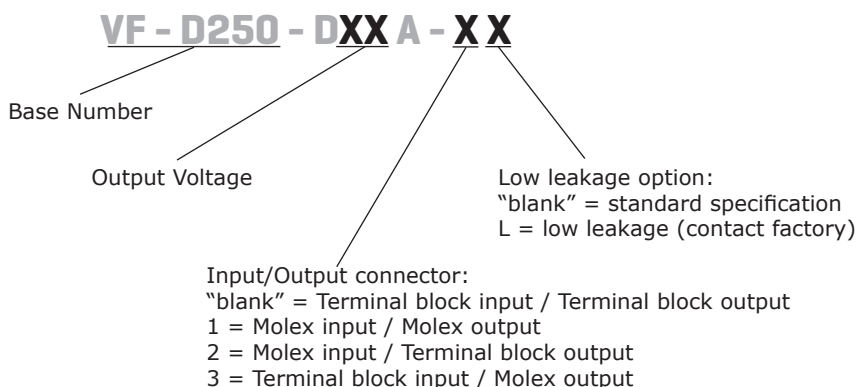
- up to 250 W continuous power w/ 16 CFM forced air
- 600 W peak power within 500  $\mu$ s duty duration
- passive power correction
- dual outputs
- power good signal
- remote on/off control
- 3,000 Vac isolation voltage
- over load, over voltage, over temperature, and short circuit protections
- UL/cUL, and TUV 60950-1 safety approvals
- efficiency up to 70%



| MODEL          | output voltage | output current |                                 | output power <sup>1</sup> |                                 | ripple and noise <sup>3,4</sup> | efficiency |
|----------------|----------------|----------------|---------------------------------|---------------------------|---------------------------------|---------------------------------|------------|
|                | (Vdc)          | max (A)        | max w/ airflow <sup>2</sup> (A) | max (W)                   | max w/ airflow <sup>2</sup> (W) | max (mVp-p)                     | typ (%)    |
| VF-D250-D312A  | 3.3            | 12             | 24                              | 100                       | 200                             | 50                              | 70%        |
|                | 12             | 7              | 12                              |                           |                                 |                                 |            |
| VF-D250-D324A  | 3.3            | 12             | 24                              | 100                       | 200                             | 50                              | 70%        |
|                | 24             | 4              | 6                               |                           |                                 |                                 |            |
| VF-D250-D512A  | 5              | 12             | 24                              | 100                       | 200                             | 50                              | 70%        |
|                | 12             | 7              | 12                              |                           |                                 |                                 |            |
| VF-D250-D524A  | 5              | 12             | 24                              | 100                       | 200                             | 50                              | 70%        |
|                | 24             | 4              | 6                               |                           |                                 |                                 |            |
| VF-D250-D548A  | 5              | 12             | 24                              | 100                       | 200                             | 50                              | 70%        |
|                | 48             | 2              | 3                               |                           |                                 |                                 |            |
| VF-D250-D1224A | 12             | 7              | 12                              | 135                       | 250                             | 120                             | 70%        |
|                | 24             | 4              | 6                               |                           |                                 |                                 |            |

- Notes:
1. Maximum total combined power
  2. With external 16 CFM fan
  3. 10% minimum load is required to maintain the ripple and regulation.
  4. Ripple and noise is measured from 10 KHz to 20 MHz at output terminals with a 0.1  $\mu$ F ceramic capacitor and a 22  $\mu$ F electrolytic capacitor in parallel.

**PART NUMBER KEY**



## INPUT

| parameter      | conditions/description  | min    | typ | max      | units  |
|----------------|---|--------|-----|----------|--------|
| voltage        | 90-132/180-264 auto selectable  | 90/180 |     | 132/264  | Vac    |
| frequency      |   | 47     |     | 63       | Hz     |
| current        | at 110~120 Vac, cold start<br>at 200~240 Vac, cold start                            |        |     | 6<br>3   | A<br>A |
| inrush current | at 115 Vac, full load, cold start<br>at 230 Vac, full load, cold start              |        |     | 35<br>70 | A<br>A |
| power factor   | compliant to EN 61000-3-2 class A   |        |     |          |        |
| remote on/off  | designated as RMSW on the CN1, requires a low signal to inhibit output, hiccup mode |        |     |          |        |

## OUTPUT

| parameter               | conditions/description  | min | typ  | max | units |
|-------------------------|---|-----|------|-----|-------|
| line regulation         | low line to high line   |     | ±5   |     | %     |
| load regulation         | all other outputs   |     | ±5   |     | %     |
| temperature coefficient |   |     | 0.25 |     | mV/°C |
| transient response      | Output voltage returns to within 1% in less than 2.5 ms for a 50% load change.<br>Peak transient does not exceed 5%.  |     |      |     |       |
| start-up time           | at 120 Vac  |     |      | 1   | s     |
| rise time               |   | 0.2 |      | 20  | ms    |
| hold-up time            | at 120 Vac and 80% of rated maximum load  | 20  |      |     | ms    |
| adjustability           |   |     | ±5   |     | %     |
| power good              | Designated as PG on the CN1.<br>This signal goes high 100-500 mS after the output reaches regulation.<br>It goes low at least 1 mS before loss of regulation. |     |      |     |       |
| fan drive               | 12 Vdc / 400 mA for external fan  |     |      |     |       |

## PROTECTIONS

| parameter                   | conditions/description  | min | typ | max | units |
|-----------------------------|---|-----|-----|-----|-------|
| over voltage protection     | AC input needs to be reset to restart the power supply                        |     |     | 130 | %     |
| over current protection     | automatically recovers  |     | 110 | 140 | %     |
| short circuit protection    | short circuit can be continuous, recovers automatically upon removal of short |     |     |     |       |
| over temperature protection | auto recovery   |     |     | 85  | °C    |

## SAFETY & COMPLIANCE

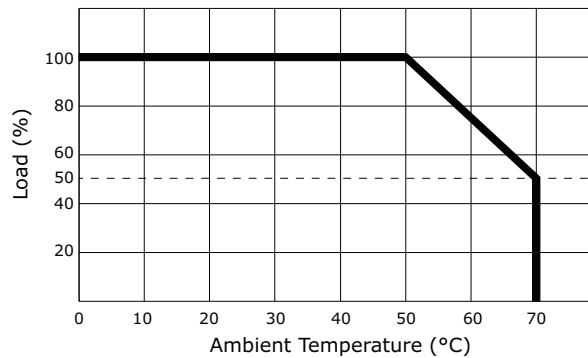
| parameter         | conditions/description   | min                     | typ | max             | units             |
|-------------------|--|-------------------------|-----|-----------------|-------------------|
| isolation voltage | applied for 3 seconds at 10 mA max.<br>primary to secondary<br>primary to transformer core<br>primary to earth chassis | 3,000<br>1,500<br>1,500 |     |                 | Vac<br>Vac<br>Vac |
| safety approvals  | UL 60950-1, CSA C22.2 No. 60950-1, TUV EN 60950-1 and CB   |                         |     |                 |                   |
| EMI/EMC           | CISPR 22/EN 55022 class B, EN 61000-3-2, 3,<br>EN 61000-4-2, 3, 4, 5, 6, 8, 11, EN 55024 CE marked (LVD)               |                         |     |                 |                   |
| leakage current   | standard model at 264 Vac<br>low-leakage model at 240 Vac<br>low-leakage model at 120 Vac                              |                         |     | 1<br>500<br>300 | mA<br>µA<br>µA    |
| RoHS compliant    | yes  |                         |     |                 |                   |
| MTBF              | according to MIL-HDBK-217 at 30 °C   | 100,000                 |     |                 | hrs               |

## ENVIRONMENTAL

| parameter             | conditions/description                               | min | typ | max | units |
|-----------------------|--|-----|-----|-----|-------|
| operating temperature | see derating curve                                   | 0   |     | 70  | °C    |
| storage temperature   |  | -20 |     | 85  | °C    |
| operating humidity    | non-condensing                                       | 5%  |     | 90% | %     |
| storage humidity      |  | 5%  |     | 95% | %     |
| vibration             | acceleration $\pm 7.35 M/(SxS)$ , on X, Y and Z Axis | 5   |     | 50  | Hz    |

## DERATING CURVES

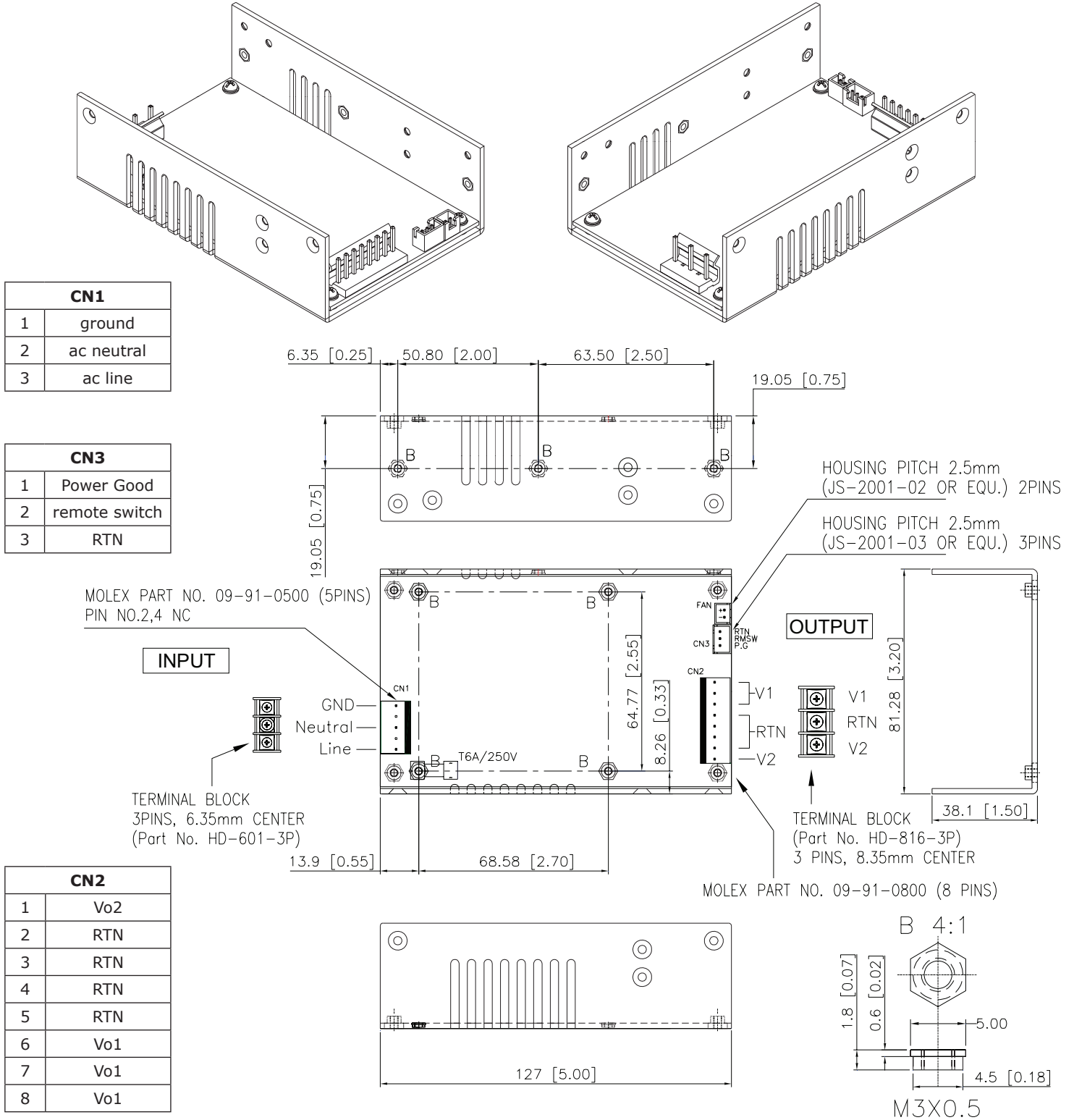
output power vs. ambient temperature



## MECHANICAL

| parameter  | conditions/description | min | typ | max | units  |
|------------|------------------------|-----|-----|-----|--------|
| dimensions | 5(L) x 3.2(W) x 1.5(H) |     |     |     | inches |
| weight     |                        |     |     | 450 | g      |

## MECHANICAL DRAWING



- Notes:
1. CN1 mates with molex part no. 09-91-0500 or equivalent and molex 2478, 2578, 8818 crimp pins.
  2. CN2 mates with molex part no. 09-91-0800 and molex 2478, 2578, 8818 crimp pins.
  3. CN3 mates with JST part no. XHP-3 or equivalent (CHYAO SHIUNN JS-2001-03) and JST SXH-002T-P0.6 mating pins
  4. Fan drive connector mates with JST part no. XHP-2 or equivalent (CHYAO SHIUNN JS-2001-02).
  5. Mounting hole max depth 2.30mm

## REVISION HISTORY

| rev. | description                 | date       |
|------|-----------------------------|------------|
| 1.0  | initial release             | 05/05/2009 |
| 1.01 | new template applied        | 12/17/2011 |
| 1.02 | V-Infinity branding removed | 08/28/2012 |
| 1.03 | updated spec                | 03/29/2013 |
| 1.04 | updated spec                | 01/19/2018 |
| 1.05 | updated datasheet           | 07/10/2018 |

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



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