

**SERIES:** VF-D320-DXXA | **DESCRIPTION:** AC-DC POWER SUPPLY

**FEATURES**

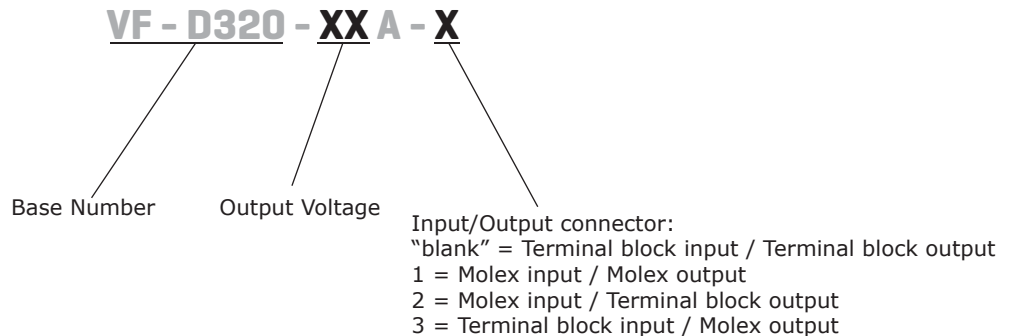
- up to 300 W continuous power w/ 18 CFM forced air
- passive power correction
- dual outputs
- power good signal
- 3000 Vac isolation voltage
- over load, over voltage, over temperature, and short circuit protections
- UL, cUL, and TUV 60950-1 safety approvals
- efficiency up to 75%



| 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-D320-D512A  | 5              | 15    | 30             | 125                             | 250                       | 50                              | 75%                             |            |
|                | 12             | 10.42 | 16.67          |                                 |                           | 120                             |                                 |            |
| VF-D320-D524A  | 5              | 15    | 30             | 125                             | 250                       | 50                              | 75%                             |            |
|                | 24             | 5.2   | 8.33           |                                 |                           | 240                             |                                 |            |
| VF-D320-D548A  | 5              | 15    | 30             | 125                             | 250                       | 50                              | 75%                             |            |
|                | 48             | 2.6   | 4.16           |                                 |                           | 480                             |                                 |            |
| VF-D320-D1224A | 12             | 12.5  | 16.67          | 150                             | 300                       | 120                             | 75%                             |            |
|                | 24             | 6.25  | 8.33           |                                 |                           | 240                             |                                 |            |

- Notes:
1. Maximum total combined power
  2. With external 18 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 µF ceramic capacitor and a 22 µF 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 100-120 Vac, cold start<br>at 200-240 Vac, cold start               |        |     | 8<br>4   | 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 EN61000-3-2 class A                                       |        |     |          |        |

## 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     |
| 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  | Foldback mode, automatically recovers                                          |     | 110 | 140 | %     |
| short circuit protection | Short circuit can be continuous. Recovers automatically upon removal of short. |     |     |     |       |
| over temp. protection    | Auto recovery                                                                  | 85  |     |     | °C    |

## SAFETY & COMPLIANCE

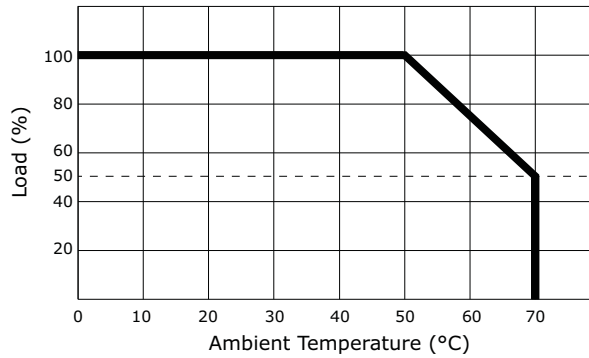
| parameter         | conditions/description                                                                                                            | min                     | typ | max        | units             |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----|------------|-------------------|
| 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  | UL60950-1, CSA C22.2 No. 60950-1-03, TUV EN60950-1 and CB, CE Mark (LVD)<br>EN61000-3-2, 3 & IEC61000-4 Series regulations and CB |                         |     |            |                   |
| EMI/EMC           | Pass FCC Part 15, CISPR 22 class B, Conducted                                                                                     |                         |     |            |                   |
| leakage current   | at 240 Vac<br>at 120 Vac                                                                                                          |                         |     | 500<br>300 | 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      | non-condensing                                      | 5   |     | 95  | %     |
| vibration             | Acceleration $\pm 7.35$ M/(SxS), on X, Y and Z Axis | 5   |     | 50  | Hz    |

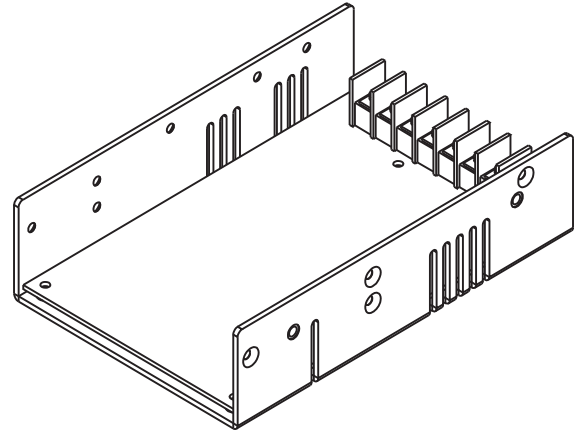
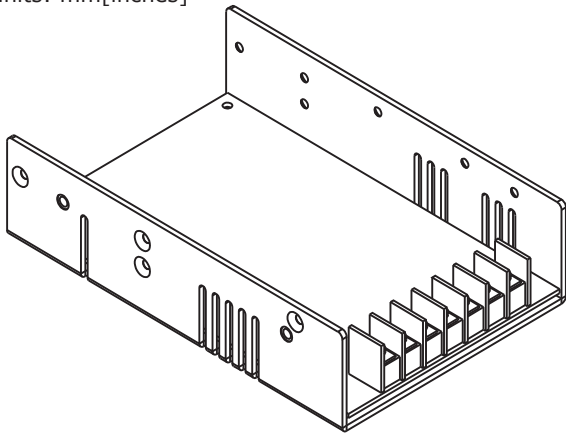
## DERATING CURVES

output power vs. ambient temperature



## MECHANICAL DRAWING

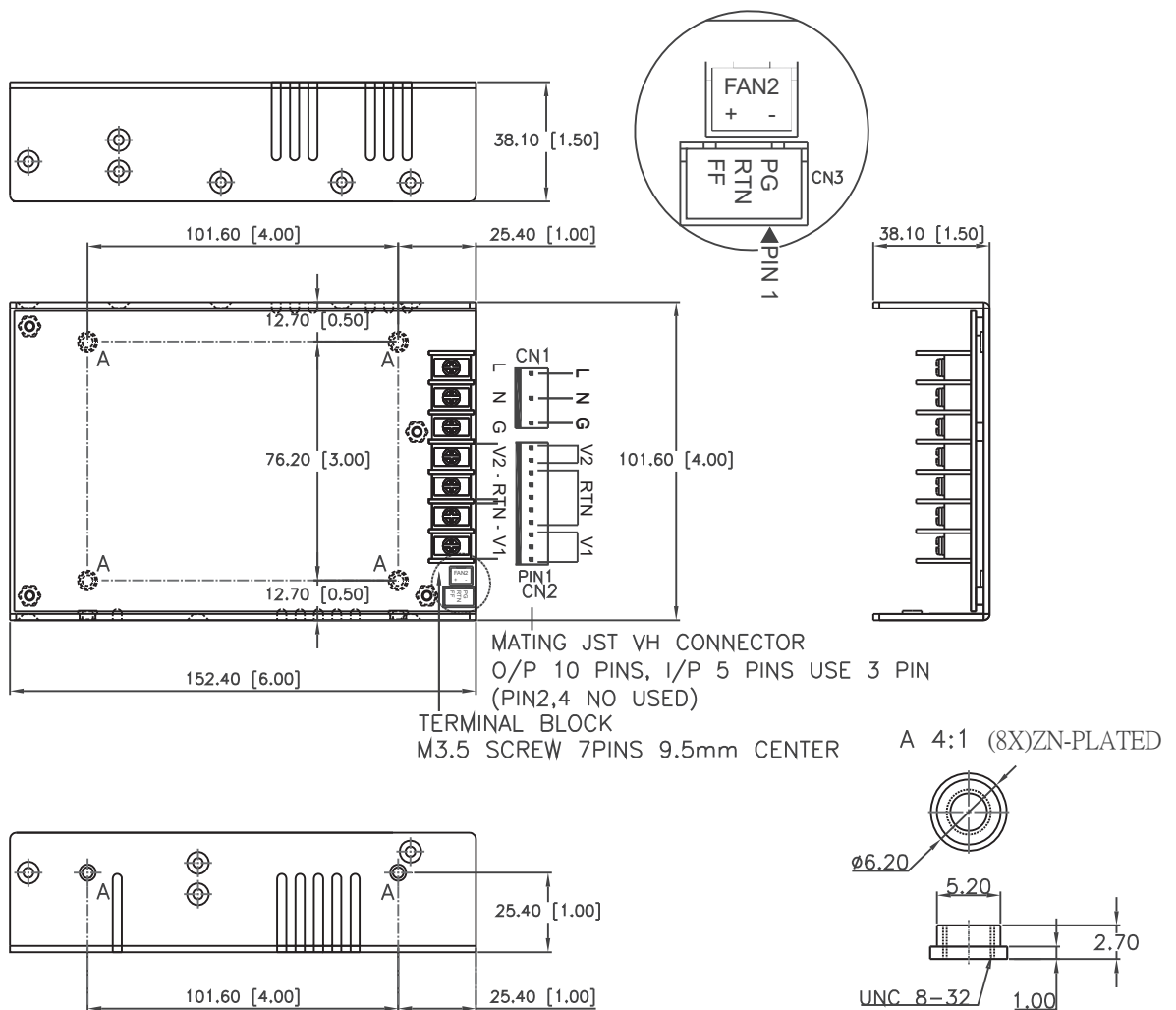
units: mm[inches]



| CN1 |            |
|-----|------------|
| 1   | ground     |
| 2   | ac neutral |
| 3   | ac line    |

| CN2 |     |
|-----|-----|
| 1   | Vo1 |
| 2   | Vo1 |
| 3   | Vo1 |
| 4   | RTN |
| 5   | RTN |
| 6   | RTN |
| 7   | RTN |
| 8   | RTN |
| 9   | Vo2 |
| 10  | Vo2 |

| CN3 |            |
|-----|------------|
| 1   | power good |
| 2   | RTN        |
| 3   | fan fail   |



- Notes:
- CN1 mates with JST VH series 5-pin connector
  - CN2 mates with JST VH series 10-pin connector
  - CN3 mates with molex part no. JST XHP-3 or equivalent (CHYAO SHIUNN JS-2001-03) and JST SXH-002T-P0.6 mating pins
  - Fan drive connector mates with JST part no. XHP-2 or equivalent (CHYAO SHIUNN JS-2001-02).
  - Mounting hole max depth 4.00mm

## REVISION HISTORY

| rev. | description                                                          | date       |
|------|----------------------------------------------------------------------|------------|
| 1.0  | initial release                                                      | 05/5/2009  |
| 1.01 | new template applied                                                 | 12/17/2011 |
| 1.02 | V-Infinity branding removed                                          | 08/28/2012 |
| 1.03 | removed on/off information, removed low leakage option, updated spec | 05/08/2013 |

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



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