

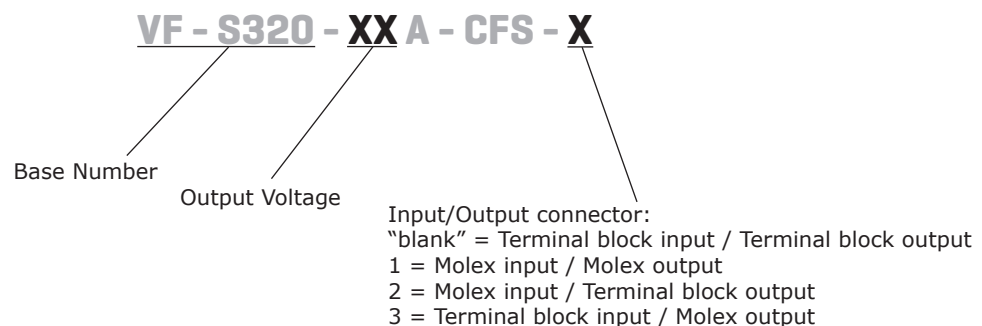
**SERIES:** VF-S320-XXA-CFS | **DESCRIPTION:** AC-DC POWER SUPPLY**FEATURES**

- up to 320 W continuous power
- 700 W peak power within 500  $\mu$ s duty duration
- metal top cover and side fan
- passive power factor correction
- power good signal
- 3,000 Vac isolation voltage
- over load, over voltage, over temperature, and short circuit protections
- UL/EN/IEC 62368 certified
- efficiency up to 83%



| MODEL            | output voltage | output current | output <sup>1</sup> power | ripple and noise <sup>2,3</sup> | efficiency |
|------------------|----------------|----------------|---------------------------|---------------------------------|------------|
|                  | (Vdc)          | max (A)        | max (W)                   | max (mVp-p)                     | typ (%)    |
| VF-S320-05A-CFS* | 5              | 45             | 225                       | 50                              | 75%        |
| VF-S320-09A-CFS* | 9              | 29.1           | 262                       | 90                              | 83%        |
| VF-S320-12A-CFS  | 12             | 26.67          | 320                       | 120                             | 80%        |
| VF-S320-15A-CFS  | 15             | 21.33          | 320                       | 150                             | 83%        |
| VF-S320-18A-CFS  | 18             | 17.78          | 320                       | 180                             | 83%        |
| VF-S320-24A-CFS  | 24             | 13.33          | 320                       | 240                             | 83%        |
| VF-S320-28A-CFS  | 28             | 11.43          | 320                       | 280                             | 83%        |
| VF-S320-36A-CFS  | 36             | 8.89           | 320                       | 360                             | 83%        |
| VF-S320-48A-CFS  | 48             | 6.67           | 320                       | 480                             | 83%        |
| VF-S320-54A-CFS  | 54             | 5.93           | 320                       | 540                             | 83%        |

Notes: 1. 1% minimum load is required to maintain the ripple and regulation.  
 2. 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.  
 3. \* Discontinued model.

**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 EN 61000-3-2 class A                                      |        |     |          |        |

## OUTPUT

| parameter               | conditions/description  | min | typ  | max | units |
|-------------------------|---|-----|------|-----|-------|
| line regulation         | low line to high line   |     | ±1   |     | %     |
| load regulation         | all other outputs   |     | ±1   |     | %     |
| 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 / 300 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

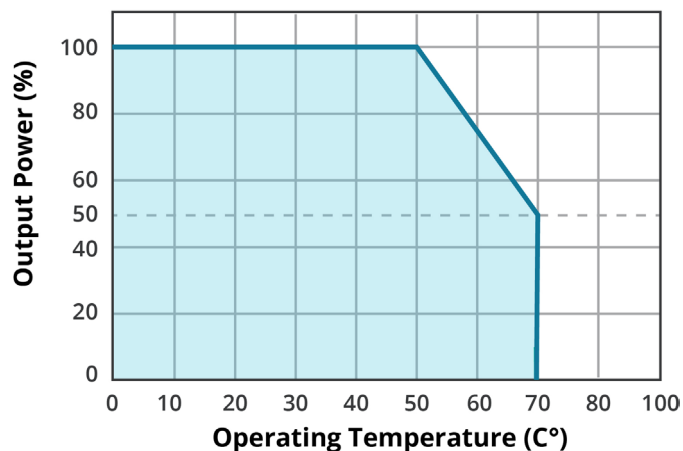
| parameter         | conditions/description   | min                     | typ | max        | units             |
|-------------------|--|-------------------------|-----|------------|-------------------|
| isolation voltage | applied for 3 seconds at 10 mA max.<br>primary to secondary<br>primary to transformer core<br>primary to earth chassis | 3,000<br>1,500<br>1,500 |     |            | Vac<br>Vac<br>Vac |
| safety approvals  | certified to 62368: IEC, EN, UL  |                         |     |            |                   |
| 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

### TEMPERATURE DERATING CURVE

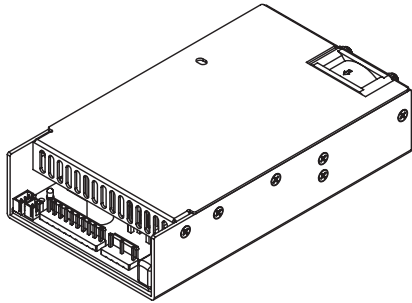


## MECHANICAL

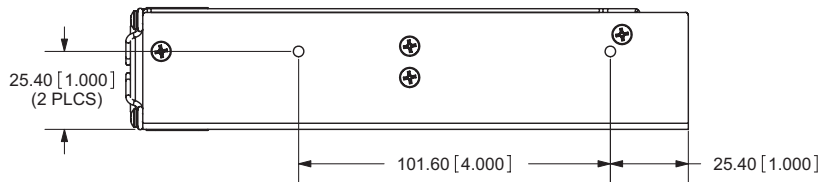
| parameter  | conditions/description                     | min | typ | max | units |
|------------|--|-----|-----|-----|-------|
| dimensions | 177.80 x 101.60 x 39.30 [7 x 4 x 1.6 inch] |     |     |     | mm    |
| weight     |  |     |     | 750 | g     |

## MECHANICAL DRAWING

units: mm[inches]  
 tolerance: ±0.3 mm  
 unless otherwise specified



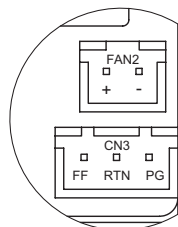
SCALE: 1:3



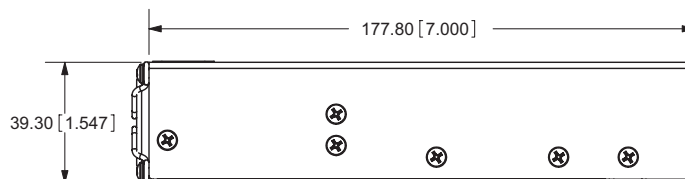
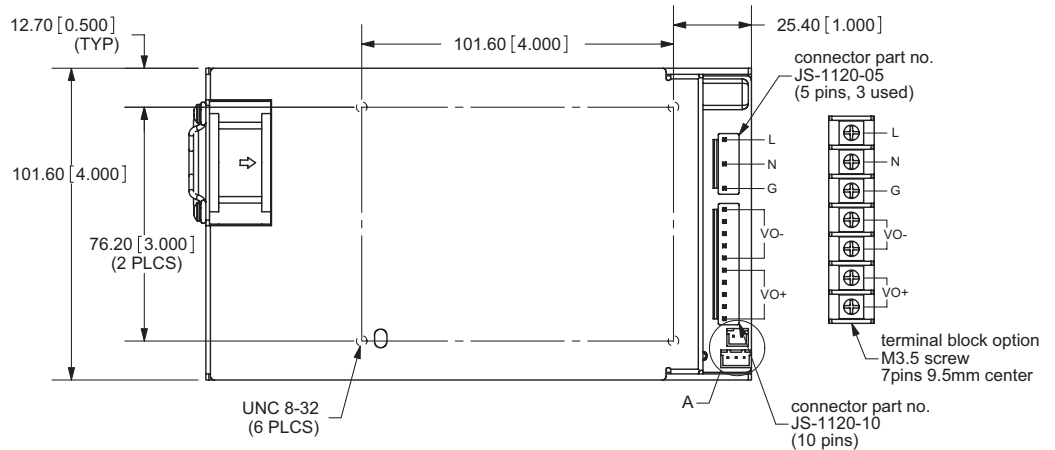
| CN1 |            |
|-----|------------|
| 1   | ground     |
| 2   | ac neutral |
| 3   | ac line    |

| CN2 |     |
|-----|-----|
| 1   | Vo+ |
| 2   | Vo+ |
| 3   | Vo+ |
| 4   | Vo+ |
| 5   | Vo+ |
| 6   | Vo- |
| 7   | Vo- |
| 8   | Vo- |
| 9   | Vo- |
| 10  | Vo- |

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



DETAIL A  
 SCALE 2:1



- Notes:
1. CN1 mates with JST VH series 5-pin connector.
  2. CN2 mates with VH series 10-pin connector.
  3. CN3 mates with JST 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
  5. 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 | 04/23/2013 |
| 1.04 | company logo updated   | 12/22/2020 |
| 1.05 | safeties updated   | 02/10/2021 |
| 1.06 | derating curve updated   | 04/21/2021 |
| 1.07 | discontinued models VF-S320-05A-CFS & VF-S320-09A-CFS                | 06/02/2022 |

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



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