

**SERIES:** VSBU-120-T | **DESCRIPTION:** AC-DC POWER SUPPLY

**FEATURES**

- up to 120 W continuous power
- industry standard 3" x 5" footprint
- universal input 90~260 Vac
- triple output
- active power correction
- internal EMI filter
- no minimum load required
- input surge current, over voltage, over load, and over current protections
- UL/cUL and TUV safety approvals
- efficiency 80%

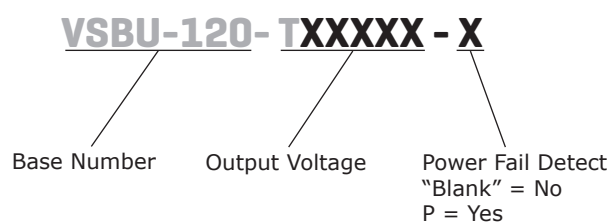


| MODEL          |     | output voltage | output current | output power | ripple and noise | efficiency |
|----------------|-----|----------------|----------------|--------------|------------------|------------|
|                |     | (Vdc)          | max (A)        | max (W)      | max (mVp-p)      | typ (%)    |
| VSBU-120-T312A | Vo1 | 3.3            | 15             | 120          | 66               | 80         |
|                | Vo2 | 12             | 6              | 120          | 120              | 80         |
|                | Vo3 | 12             | 0.8            | 120          | 120              | 80         |
| VSBU-120-T312A | Vo1 | 3.3            | 15             | 120          | 66               | 80         |
|                | Vo2 | 12             | 6              | 120          | 120              | 80         |
|                | Vo3 | 12             | 0.8            | 120          | 120              | 80         |
| VSBU-120-T125A | Vo1 | 5              | 15             | 120          | 50               | 80         |
|                | Vo2 | 12             | 6              | 120          | 120              | 80         |
|                | Vo3 | -5             | 0.8            | 120          | -50              | 80         |
| VSBU-120-T125B | Vo1 | 5              | 15             | 120          | 50               | 80         |
|                | Vo2 | 12             | 6              | 120          | 150              | 80         |
|                | Vo3 | 5              | 0.8            | 120          | 50               | 80         |
| VSBU-120-T512A | Vo1 | 5              | 15             | 120          | 50               | 80         |
|                | Vo2 | 12             | 6              | 120          | 120              | 80         |
|                | Vo3 | -12            | 0.8            | 120          | -120             | 80         |
| VSBU-120-T512B | Vo1 | 5              | 15             | 120          | 50               | 80         |
|                | Vo2 | 12             | 6              | 120          | 120              | 80         |
|                | Vo3 | 12             | 0.8            | 120          | 120              | 80         |
| VSBU-120-T515A | Vo1 | 5              | 15             | 120          | 50               | 80         |
|                | Vo2 | 15             | 6              | 120          | 150              | 80         |
|                | Vo3 | -15            | 0.8            | 120          | -150             | 80         |
| VSBU-120-T515B | Vo1 | 5              | 15             | 120          | 50               | 80         |
|                | Vo2 | 15             | 6              | 120          | 150              | 80         |
|                | Vo3 | 15             | 0.8            | 120          | 150              | 80         |
| VSBU-120-T524A | Vo1 | 5              | 15             | 120          | 50               | 80         |
|                | Vo2 | 24             | 3.5            | 120          | 240              | 80         |
|                | Vo3 | -24            | 0.8            | 120          | -240             | 80         |
| VSBU-120-T524B | Vo1 | 5              | 15             | 120          | 50               | 80         |
|                | Vo2 | 24             | 3.5            | 120          | 240              | 80         |
|                | Vo3 | 24             | 0.8            | 120          | 240              | 80         |

*continued on page 2*

| MODEL           |     | output<br>voltage | output<br>current | output<br>power | ripple and<br>noise | efficiency |
|-----------------|-----|-------------------|-------------------|-----------------|---------------------|------------|
|                 |     | (Vdc)             | max<br>(A)        | max<br>(W)      | max<br>(mVp-p)      | typ<br>(%) |
| VSBU-120-T305A  | Vo1 | 5                 | 15                | 120             | 50                  | 80         |
|                 | Vo2 | 24                | 3.5               | 120             | 240                 | 80         |
|                 | Vo3 | -12               | 0.8               | 120             | -120                | 80         |
| VSBU-120-T305B  | Vo1 | 5                 | 15                | 120             | 50                  | 80         |
|                 | Vo2 | 24                | 3.5               | 120             | 240                 | 80         |
|                 | Vo3 | 12                | 0.8               | 120             | 120                 | 80         |
| VSBU-120-T3125A | Vo1 | 3.3               | 15                | 120             | 66                  | 80         |
|                 | Vo2 | 12                | 6                 | 120             | 120                 | 80         |
|                 | Vo3 | -5                | 0.8               | 120             | -50                 | 80         |
| VSBU-120-T3125B | Vo1 | 3.3               | 15                | 120             | 66                  | 80         |
|                 | Vo2 | 12                | 6                 | 120             | 120                 | 80         |
|                 | Vo3 | 5                 | 0.8               | 120             | 50                  | 80         |
| VSBU-120-T510A  | Vo1 | 5                 | 15                | 120             | 50                  | 80         |
|                 | Vo2 | 10                | 6                 | 120             | 100                 | 80         |
|                 | Vo3 | -10               | 1                 | 120             | -100                | 80         |
| VSBU-120-T510B  | Vo1 | 5                 | 15                | 120             | 50                  | 80         |
|                 | Vo2 | 10                | 6                 | 120             | 100                 | 80         |
|                 | Vo3 | 10                | 1                 | 120             | 100                 | 80         |
| VSBU-120-T3512A | Vo1 | 3.3               | 15                | 91.5            | 66                  | 80         |
|                 | Vo2 | 5                 | 6                 | 91.5            | 50                  | 80         |
|                 | Vo3 | -12               | 1                 | 91.5            | -120                | 80         |
| VSBU-120-T3512B | Vo1 | 3.3               | 15                | 91.5            | 66                  | 80         |
|                 | Vo2 | 5                 | 6                 | 91.5            | 50                  | 80         |
|                 | Vo3 | 12                | 1                 | 91.5            | 120                 | 80         |

## PART NUMBER KEY



## INPUT

| parameter               | conditions/description                  | min  | typ  | max | units |
|-------------------------|-----------------------------------------|------|------|-----|-------|
| voltage                 |                                         | 90   |      | 260 | Vac   |
| frequency               |                                         | 47   |      | 63  | Hz    |
| current                 | at 115 Vac, full load                   |      |      | 1.7 | A     |
|                         | at 230 Vac, full load                   |      |      | 1.0 | A     |
| inrush current          | at 115 Vac, 25°C, full load, cold start |      | 30   | 37  | A     |
|                         | at 230 Vac, 25°C, full load, cold start |      | 65   | 75  | A     |
| power factor correction | full load at 90 ~ 260 Vac               | 0.95 | 0.97 | 1.0 |       |

## OUTPUT

| parameter               | conditions/description            | min   | typ | max  | units |
|-------------------------|-----------------------------------|-------|-----|------|-------|
| line regulation         | full load                         |       | 0.5 | 1    | %     |
| load regulation         | at 230 Vac                        |       | 3   | 5    | %     |
| temperature coefficient | all output                        | -0.04 |     | 0.04 | %/°C  |
| transient response      | full load to half load at 100 Vac |       |     | 4    | ms    |
| start-up                | full load at 100 Vac              | 0.3   | 1   | 2    | s     |
| hold-up                 | full load at 110 Vac              | 16    |     |      | ms    |

## PROTECTIONS

| parameter               | conditions/description | min | typ | max | units |
|-------------------------|------------------------|-----|-----|-----|-------|
| over voltage protection |                        | 112 |     | 132 | %     |
| over current protection |                        | 110 |     | 150 | %     |

## SAFETY & COMPLIANCE

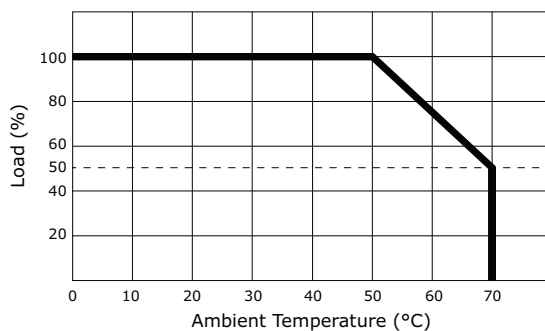
| parameter            | conditions/description                         | min     | typ | max  | units |
|----------------------|------------------------------------------------|---------|-----|------|-------|
| isolation voltage    | primary to secondary                           | 4,242   |     |      | Vdc   |
|                      | primary to earth ground                        | 2,121   |     |      | Vdc   |
| isolation resistance | test voltage of 500 Vdc                        | 50      |     |      | MΩ    |
| safety approvals     | UL 60950-1 2nd edition, EN 60950-1 2nd edition |         |     |      |       |
| EMI/EMC              | CISPR 22 class B, FCC part-15 class B          |         |     |      |       |
| leakage current      | full load at 240 Vac                           |         | 0.4 | 0.75 | mA    |
| RoHS compliant       | yes                                            |         |     |      |       |
| MTBF                 | MIL-HDSK-217F, 25°C ambient                    | 100,000 |     |      | hrs   |

## ENVIRONMENTAL

| parameter             | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature |                        | 0   |     | 70  | °C    |
| storage temperature   |                        | -40 |     | 85  | °C    |
| operating humidity    | non-condensing         | 5   |     | 95  | %     |
| storage humidity      |                        | 0   |     | 75  | %     |

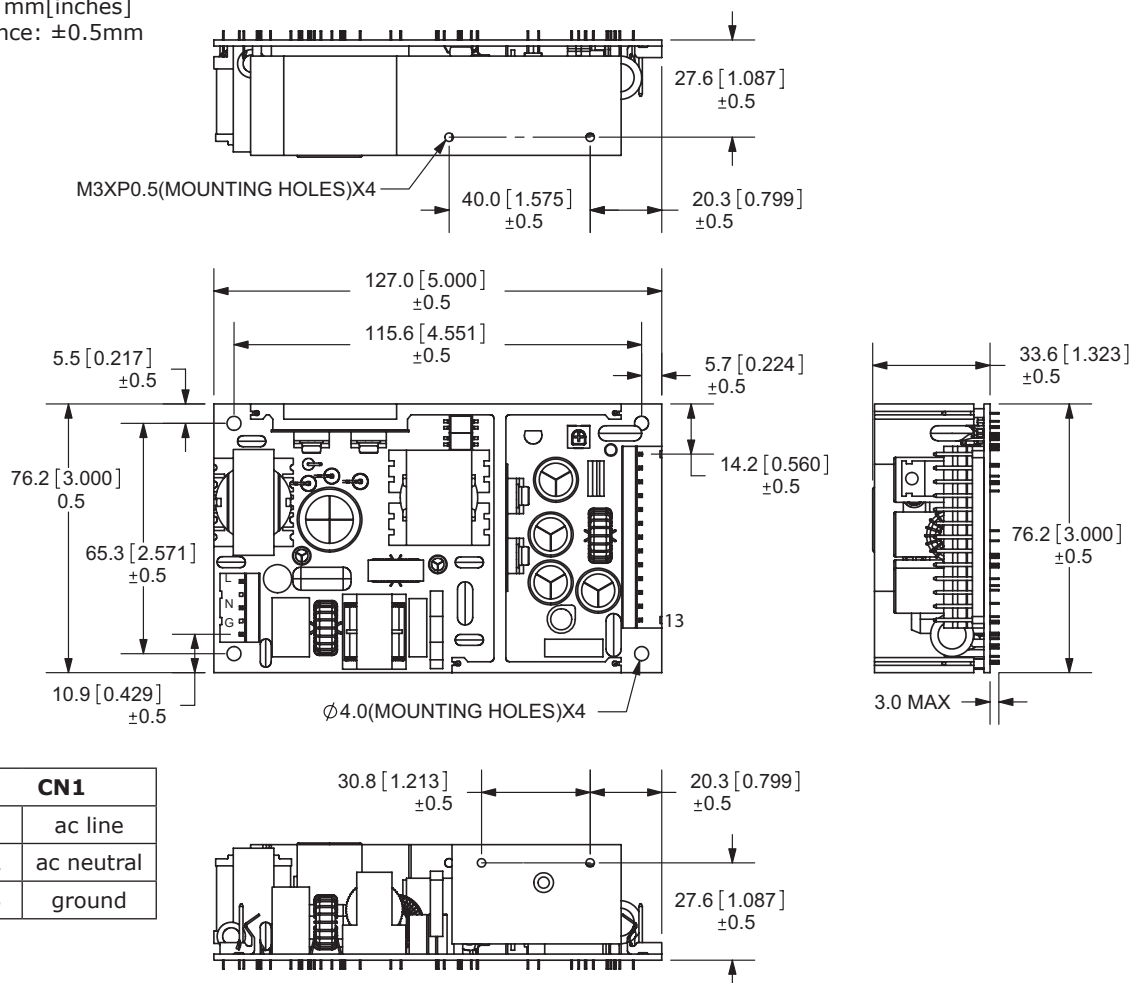
## DERATING CURVES

output power vs. ambient temperature



## MECHANICAL DRAWING

units: mm[inches]  
tolerance:  $\pm 0.5$ mm



note:

1. Input connector mates with Molex housing 09-50-3051 and Molex 2478 or 2578 series crimp terminal.
2. Output connector mates with Molex housing 09-50-3031 and Molex 2478 or 2578 series crimp terminal.

\*pin 13 for optional power fail detect

## REVISION HISTORY

| rev. | description                 | date       |
|------|-----------------------------|------------|
| 1.0  | initial release             | 11/19/2010 |
| 1.01 | applied new spec template   | 02/29/2012 |
| 1.02 | V-Infinity branding removed | 08/14/2012 |
| 1.03 | updated derating curve      | 02/07/2013 |

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



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