

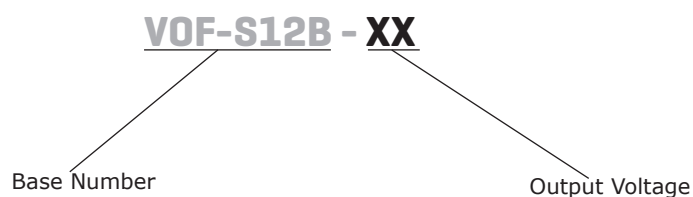
**SERIES: VOF-S12B | DESCRIPTION: AC-DC POWER SUPPLY**
**FEATURES**

- universal input range (90 ~ 264 Vac)
- Class B emissions (EN55032/CISPR/FCC)
- certified to IEC/EN/UL 62368-1
- designed to meet IEC/EN 60335
- short circuit protection
- over voltage protection
- < 75 mW no-load power consumption
- Class II



| MODEL       | output<br>voltage<br>(Vdc) | output<br>current |            | output<br>power<br>max<br>(W) | ripple<br>and noise <sup>1</sup><br>max<br>(mVp-p) | efficiency <sup>2</sup><br>typ<br>(%) |
|-------------|----------------------------|-------------------|------------|-------------------------------|----------------------------------------------------|---------------------------------------|
|             |                            | min<br>(A)        | max<br>(A) |                               |                                                    |                                       |
| VOF-S12B-5  | 5                          | 0                 | 2.0        | 10                            | 100                                                | 80                                    |
| VOF-S12B-9  | 9                          | 0                 | 1.34       | 12                            | 100                                                | 85                                    |
| VOF-S12B-12 | 12                         | 0                 | 1.0        | 12                            | 120                                                | 85                                    |
| VOF-S12B-15 | 15                         | 0                 | 0.8        | 12                            | 150                                                | 85                                    |
| VOF-S12B-24 | 24                         | 0                 | 0.5        | 12                            | 240                                                | 87                                    |

Notes: 1. At full load, nominal input, 20 MHz bandwidth oscilloscope, with 1  $\mu$ F ceramic and 10  $\mu$ F electrolytic capacitors on the output.  
 2. At 230 Vac, full load, 25°C.  
 3. All specifications are measured at Ta=25°C, nominal input voltage, and 75% rated output load unless otherwise specified.

**PART NUMBER KEY**


## INPUT

| parameter       | conditions/description       | min       | typ | max        | units      |
|-----------------|------------------------------|-----------|-----|------------|------------|
| voltage         |                              | 90<br>120 |     | 264<br>370 | Vac<br>Vdc |
| frequency       |                              | 47        |     | 63         | Hz         |
| current         |                              |           |     | 400        | mA         |
| inrush current  | at 240 Vac, cold start, 25°C |           |     | 50         | A          |
| leakage current | at 264 Vac                   |           |     | 0.25       | mA         |

## OUTPUT

| parameter                  | conditions/description                         | min | typ   | max   | units |
|----------------------------|------------------------------------------------|-----|-------|-------|-------|
| capacitive load            | 5 Vdc output models                            |     |       | 2,000 | μF    |
|                            | 9 Vdc output models                            |     |       | 1,340 | μF    |
|                            | 12 Vdc output models                           |     |       | 1,000 | μF    |
|                            | 15 Vdc output models                           |     |       | 800   | μF    |
|                            | 24 Vdc output models                           |     |       | 500   | μF    |
| initial set point accuracy | at 100% load                                   |     |       | ±2    | %     |
| line regulation            | measured at high line to low line at full load |     |       | ±1    | %     |
| load regulation            | measured at 10%~100% load                      |     |       | ±1    | %     |
| start-up time              |                                                |     |       | 3     | s     |
| hold-up time               | at 115 Vac                                     |     | 10    |       | ms    |
| switching frequency        |                                                |     | 65    |       | kHz   |
| temperature coefficient    |                                                |     | ±0.05 |       | %/°C  |

## PROTECTIONS

| parameter                | conditions/description | min | typ | max  | units |
|--------------------------|------------------------|-----|-----|------|-------|
| over voltage protection  | hiccup, auto recovery  |     |     |      |       |
|                          | 5 Vdc output models    |     |     | 6.3  | Vdc   |
|                          | 9 Vdc output models    |     |     | 12.6 | Vdc   |
|                          | 12 Vdc output models   |     |     | 15.8 | Vdc   |
|                          | 15 Vdc output models   |     |     | 18.9 | Vdc   |
|                          | 24 Vdc output models   |     |     | 31.5 | Vdc   |
| short circuit protection | hiccup, auto recovery  |     |     |      |       |

## SAFETY & COMPLIANCE

| parameter                      | conditions/description                                                                               | min   | typ | max | units |
|--------------------------------|------------------------------------------------------------------------------------------------------|-------|-----|-----|-------|
| isolation voltage              | input to output for 1 minute                                                                         | 3,000 |     |     | Vac   |
| isolation resistance           |                                                                                                      | 100   |     |     | MΩ    |
| safety approvals               | certified to IEC/EN/UL 62368-1<br>designed to meet IEC/EN 60335                                      |       |     |     |       |
| safety class                   |                                                                                                      |       |     |     |       |
| conducted emissions            | EN55032 2015, EN61000-6-3 2007+A1: 2011+AC: 2012, Class B,<br>47 CFR FCC Part 15 Subpart B (Class B) |       |     |     |       |
| radiated emissions             | EN55032 2015, EN61000-6-3 2007+A1: 2011+AC: 2012, Class B,<br>47 CFR FCC Part 15 Subpart B (Class B) |       |     |     |       |
| harmonic current emissions     | EN61000-3-2:2014                                                                                     |       |     |     |       |
| voltage fluctuations & flicker | EN61000-3-3:2013                                                                                     |       |     |     |       |
| ESD                            | IEC61000-4-2:2008                                                                                    |       |     |     |       |
| radiated immunity              | IEC61000-4-3:2010                                                                                    |       |     |     |       |
| EFT/burst                      | IEC61000-4-4:2012                                                                                    |       |     |     |       |
| surge                          | IEC61000-4-5:2014                                                                                    |       |     |     |       |

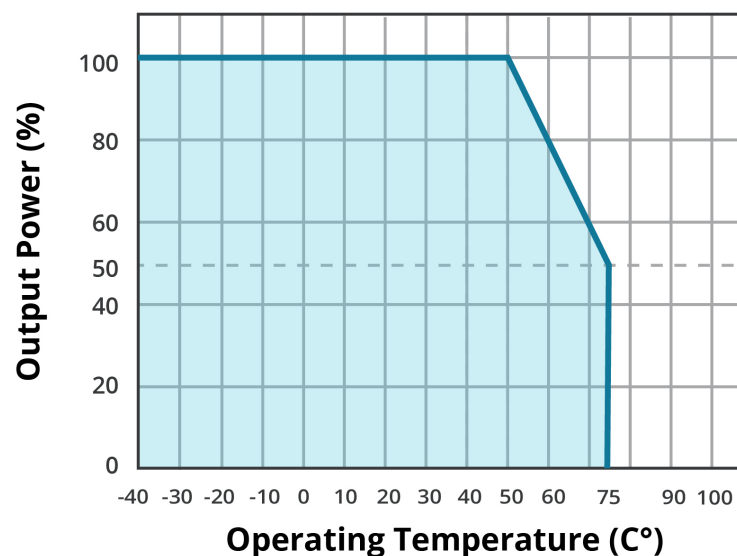
**SAFETY & COMPLIANCE (CONTINUED)**

| parameter                      | conditions/description                     | min | typ     | max | units |
|--------------------------------|--------------------------------------------|-----|---------|-----|-------|
| conducted immunity             | IEC61000-4-6:2013                          |     |         |     |       |
| power frequency magnetic field | IEC61000-4-8:2009                          |     |         |     |       |
| voltage dips & interruptions   | IEC61000-4-11:2004                         |     |         |     |       |
| MTBF                           | as per MIL-HDBK-217F, at 115 Vac, 25°C, GB |     |         |     |       |
|                                | 5 Vdc output model                         |     | 580,000 |     | hours |
|                                | 9 Vdc output model                         |     | 870,000 |     | hours |
|                                | 12 Vdc output model                        |     | 660,000 |     | hours |
|                                | 15 Vdc output model                        |     | 740,000 |     | hours |
|                                | 24 Vdc output model                        |     | 620,000 |     | hours |
| RoHS                           | yes                                        |     |         |     |       |

Notes: 4. 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                                                                   | -40 |     | 75    | °C    |
| storage temperature   |                                                                                       | -40 |     | 85    | °C    |
| operating humidity    | non-condensing                                                                        |     |     | 93    | %     |
| altitude              |                                                                                       |     |     | 5,000 | m     |
| vibration             | as per MIL-STD-810F Table 514.5C-VIII; 15~2000 Hz for 1 hour on each axis for 3 hours |     | 4   |       | G     |
| shock                 | as per MIL-STD-810F Table 516.5, Table 516.5-1; for 10 ms on each axis 3 times        |     | 75  |       | G     |

**DERATING CURVES****TEMPERATURE DERATING CURVE**

## MECHANICAL

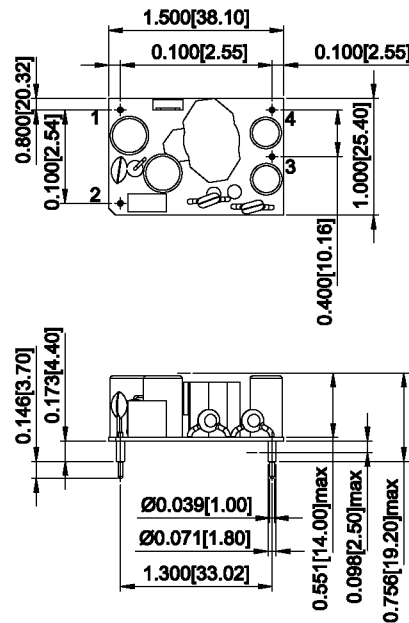
| parameter  | conditions/description                         | min | typ | max | units  |
|------------|------------------------------------------------|-----|-----|-----|--------|
| dimensions | 1.50 x 1.00 x 0.756 (38.10 x 25.40 x 19.20 mm) |     |     |     | inches |
| weight     |                                                |     | 16  |     | g      |

## MECHANICAL DRAWING

units: inch [mm]

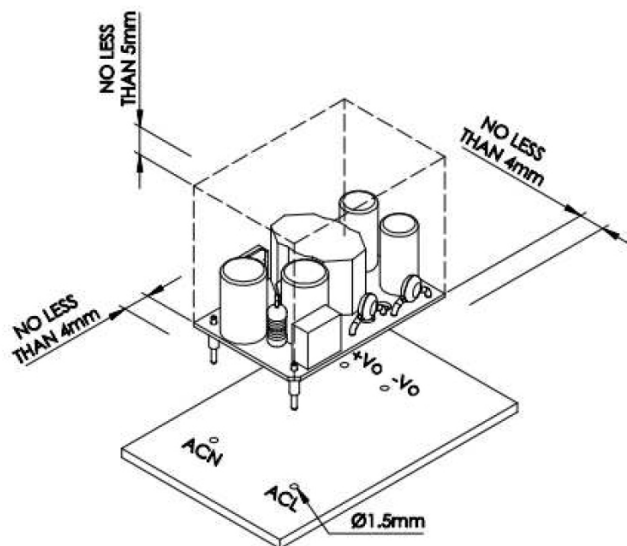
tolerance:  $\pm 0.020$  [ $\pm 0.50$ ]

| PIN CONNECTIONS |          |
|-----------------|----------|
| PIN             | Function |
| 1               | AC (N)   |
| 2               | AC (L)   |
| 3               | -Vo      |
| 4               | +Vo      |



## INSTALLATION INSTRUCTIONS

The mounting holes should all be 1.5 mm in diameter. A minimum of 4 mm clearance is required for all four sides of the unit and a minimum of 5 mm clearance is required above the top surface of the unit.



## REVISION HISTORY

| rev. | description                   | date       |
|------|-------------------------------|------------|
| 1.0  | initial release               | 02/13/2020 |
| 1.01 | updates to mechanical section | 04/08/2020 |
| 1.02 | derating curve updated        | 04/27/2021 |

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



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# Mouser Electronics

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