

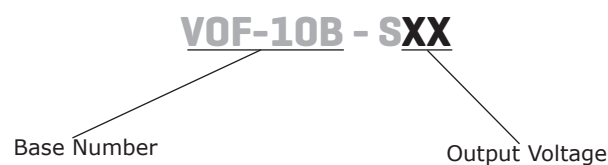
**SERIES:** VOF-10B | **DESCRIPTION:** AC-DC POWER SUPPLY
**FEATURES**

- up to 10 W continuous power
- universal input: 85~264 Vac
- compact open-frame design
- single output from 5 Vdc ~ 24 Vdc
- short circuit, over voltage protection, over current protection
- 4000 Vac isolation
- no load power consumption <100 mW



| MODEL       | output voltage | output current max | output power max | ripple and noise <sup>1</sup> | efficiency |
|-------------|----------------|--------------------|------------------|-------------------------------|------------|
|             | (Vdc)          | (A)                | (W)              | typ (mVp-p)                   | typ (%)    |
| VOF-10B-S5  | 5              | 2                  | 10               | 100                           | 79         |
| VOF-10B-S9  | 9              | 1.1                | 10               | 100                           | 82.14      |
| VOF-10B-S12 | 12             | 0.85               | 10.2             | 120                           | 82.32      |
| VOF-10B-S15 | 15             | 0.7                | 10.5             | 150                           | 82.49      |
| VOF-10B-S24 | 24             | 0.45               | 10.8             | 240                           | 82.49      |

Notes: 1. At full load, nominal input, 20 MHz bandwidth oscilloscope, output terminated with 10  $\mu$ F electrolytic and 0.1  $\mu$ F ceramic capacitors.  
 2. 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                   |                              | 85<br>120 |     | 264<br>370 | Vac<br>Vdc |
| frequency                 |                              | 47        |     | 63         | Hz         |
| current                   |                              |           |     | 0.3        | A          |
| inrush current            | at 240 Vac, 25°C, cold start |           |     | 50         | A          |
| leakage current           |                              |           |     | 0.25       | mA         |
| no load power consumption |                              |           |     | 0.10       | W          |

## OUTPUT

| parameter                  | conditions/description             | min | typ   | max   | units |
|----------------------------|------------------------------------|-----|-------|-------|-------|
| capacitive load            | 5 Vdc output model                 |     |       | 2,000 | μF    |
|                            | 9 Vdc output model                 |     |       | 1,100 | μF    |
|                            | 12 Vdc output model                |     |       | 850   | μF    |
|                            | 15 Vdc output model                |     |       | 700   | μF    |
|                            | 24 Vdc output model                |     |       | 450   | μF    |
| initial set point accuracy | at full load, 25°C                 |     | ±2    |       | %     |
| line regulation            | high line to low line at full load |     | ±0.5  |       | %     |
| load regulation            | 10%~100% load                      |     | ±3    |       | %     |
| hold-up time               | at 115 Vac                         |     | 12    |       | ms    |
| switching frequency        | at 115 Vac, full load              |     | 85    |       | kHz   |
|                            | at 230 Vac, full load              |     | 65    |       | kHz   |
| temperature coefficient    |                                    |     | ±0.05 |       | %/°C  |

## PROTECTIONS

| parameter                | conditions/description | min | typ | max | units |
|--------------------------|------------------------|-----|-----|-----|-------|
| over voltage protection  | hiccup, auto recovery  |     |     |     |       |
| over current protection  |                        | 110 |     |     | %     |
| short circuit protection | hiccup, auto recovery  |     |     |     |       |

## SAFETY & COMPLIANCE

| parameter         | conditions/description                                                                                              | min     | typ   | max | units |
|-------------------|---------------------------------------------------------------------------------------------------------------------|---------|-------|-----|-------|
| isolation voltage | input to output                                                                                                     |         | 4,000 |     | Vac   |
| safety approvals  | IEC62368-1/60950-1, UL62368-1/60950-1                                                                               |         |       |     |       |
| safety class      | class II                                                                                                            |         |       |     |       |
| EMI/EMC           | EN 55032 Class B, FCC Part 15 Class B, EN 61000-6-3, EN 61000-3-2, EN 61000-3-3, EN 55024, EN 61204-3, EN 61000-6-1 |         |       |     |       |
| MTBF              | as per MIL-STD-217F, at 115 Vac, 25°C, GB                                                                           | 300,000 |       |     | hours |
| life time         | at 40°C, 75% load                                                                                                   | 3       |       |     | years |
| RoHS              | yes                                                                                                                 |         |       |     |       |

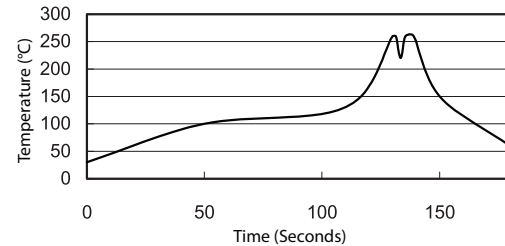
## ENVIRONMENTAL

| parameter             | conditions/description | min | typ  | max | units |
|-----------------------|------------------------|-----|------|-----|-------|
| operating temperature | see derating curve     | -25 |      | 70  | °C    |
| storage temperature   |                        | -40 |      | 85  | °C    |
| operating humidity    | non-condensing         |     |      | 93  | %     |
| operating altitude    |                        |     | 3000 |     | m     |

## SOLDERABILITY

| parameter      | conditions/description     | min | typ | max | units |
|----------------|----------------------------|-----|-----|-----|-------|
| wave soldering | see wave soldering profile |     |     | 260 | °C    |

- Notes:
1. Soldering materials: Sn/Cu/Ni
  2. Ramp up rate during preheat: 1.4°C/s (from 50°C to 100°C)
  3. Soaking temperature: 0.5°C/s (from 100°C to 130°C), 60±20 seconds
  4. Peak temperature: 260°C, above 250°C for 3~6 seconds
  5. Ramp down rate during cooling: -10°C/s (from 260°C to 150°C)



## MECHANICAL

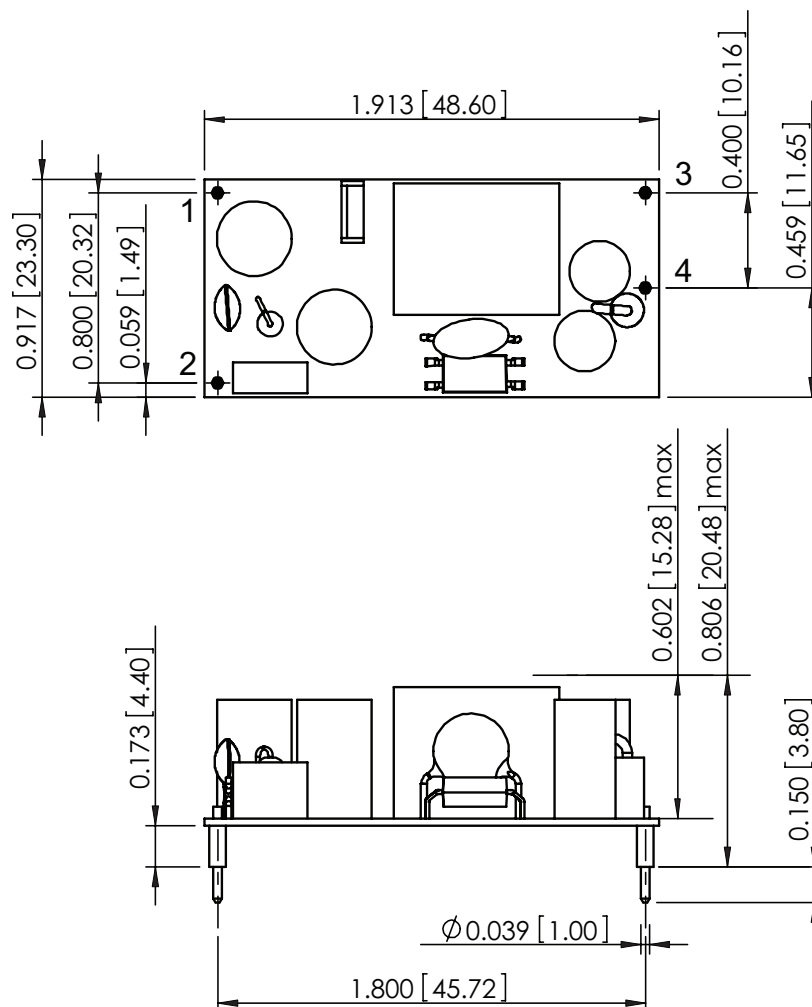
| parameter  | conditions/description                           | min | typ | max | units |
|------------|--------------------------------------------------|-----|-----|-----|-------|
| dimensions | 1.913 x 0.917 x 0.806 (48.60 x 23.30 x 20.48 mm) |     |     |     | inch  |
| weight     |                                                  |     | 14  |     | g     |
| cooling    | natural convection                               |     |     |     |       |

## MECHANICAL DRAWING

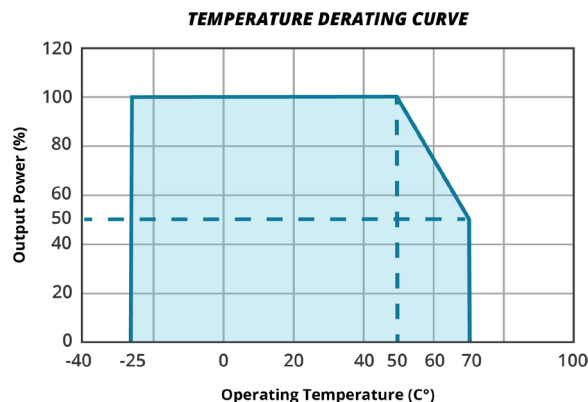
units: inch [mm]

tolerance: X.XXX = ±0.020 [±0.50]

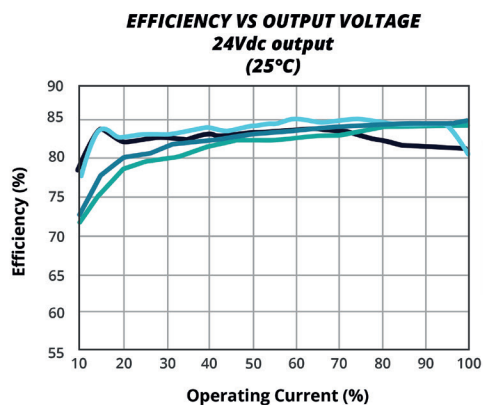
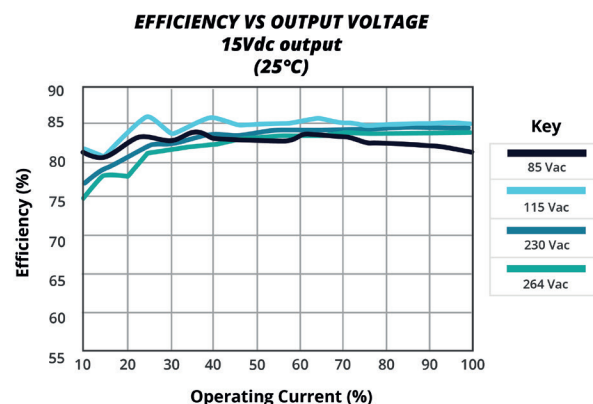
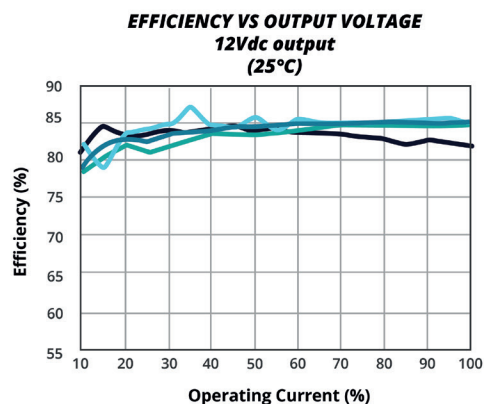
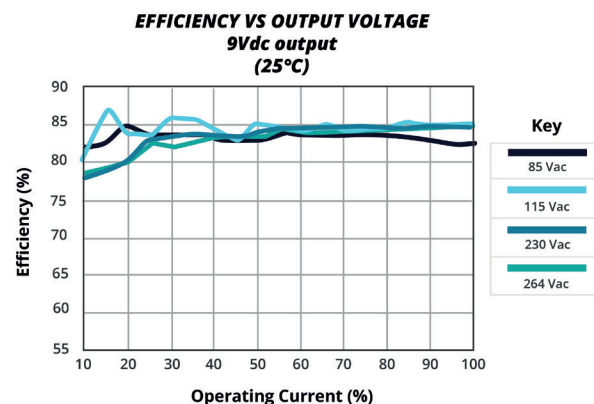
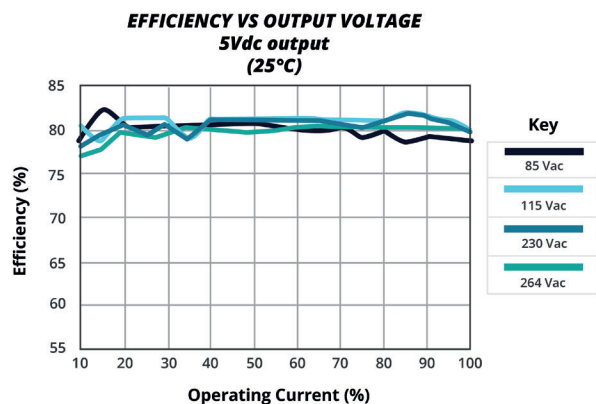
| PIN CONNECTIONS |          |
|-----------------|----------|
| PIN             | Function |
| 1               | ACN      |
| 2               | ACL      |
| 3               | +Vout    |
| 4               | -Vout    |



## DERATING CURVE



## EFFICIENCY CURVES



## REVISION HISTORY

| rev. | description                            | date       |
|------|----------------------------------------|------------|
| 1.0  | initial release                        | 02/23/2017 |
| 1.01 | updated datasheet                      | 01/08/2019 |
| 1.02 | company logo updated                   | 12/03/2020 |
| 1.03 | derating and efficiency curves updated | 03/26/2021 |

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



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