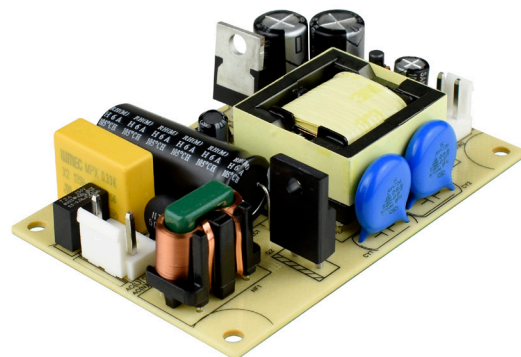


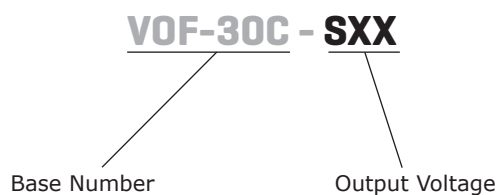
SERIES: VOF-30C | **DESCRIPTION:** AC-DC POWER SUPPLY**FEATURES**

- universal input (85~264 Vac)
- 3 x 2 x 1.1 in (76.2 x 50.8 x 27 mm)
- class B EMI performance, meets CISPR32 / EN55032
- output short circuit, overcurrent & overvoltage protection
- designed to meet: IEC/EN/UL 60335 & 62368
- safety certified: IEC/EN/UL 62368



| MODEL | output voltage (Vdc) | output current | | output power max (W) | ripple and noise ¹ max (mVp-p) | efficiency ² typ (%) |
|-------------|-------------------------|----------------|-------------|----------------------------|---|---------------------------------------|
| | | min (mA) | max (mA) | | | |
| VOF-30C-S3 | 3.3 | 0 | 4100 | 13.5 | 100 | 73 |
| VOF-30C-S5 | 5 | 0 | 4100 | 20.5 | 100 | 78 |
| VOF-30C-S9 | 9 | 0 | 3333 | 30 | 100 | 82 |
| VOF-30C-S12 | 12 | 0 | 2500 | 30 | 100 | 84 |
| VOF-30C-S15 | 15 | 0 | 2000 | 30 | 100 | 86 |
| VOF-30C-S24 | 24 | 0 | 1250 | 30 | 100 | 87 |
| VOF-30C-S48 | 48 | 0 | 625 | 30 | 100 | 88 |

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

PART NUMBER KEY

INPUT

| parameter | conditions/description | min | typ | max | units |
|---------------------------|------------------------|-----|-----|-----|-------|
| voltage | | 85 | | 264 | Vac |
| | | 100 | | 370 | Vdc |
| frequency | | 47 | | 60 | Hz |
| current | at 115 Vac | | | 750 | mA |
| | at 230 Vac | | | 450 | mA |
| inrush current | at 115 Vac | | 20 | | A |
| | at 230 Vac | | 40 | | A |
| no load power consumption | | | | 0.5 | W |

OUTPUT

| parameter | conditions/description | min | typ | max | units |
|----------------------------|------------------------|-----|-------|--------|-------|
| capacitive load | 3.3 Vdc output models | | | 24,000 | μF |
| | 5 Vdc output models | | | 12,000 | |
| | 9 Vdc output models | | | 5,600 | |
| | 12 Vdc output models | | | 5,400 | |
| | 15 Vdc output models | | | 2,400 | |
| | 24 Vdc output models | | | 1,440 | |
| | 48 Vdc output models | | | 600 | |
| initial set point accuracy | 3.3 Vdc output models | | ±3 | | % |
| | all other models | | ±2 | | % |
| line regulation | at full load | | ±0.5 | | % |
| load regulation | from 0~100% load | | ±1 | | % |
| hold-up time | at 115 Vac, full load | | 10 | | ms |
| | at 230 Vac, full load | | 60 | | ms |
| switching frequency | | | 60 | | kHz |
| temperature coefficient | | | ±0.02 | | %/°C |

PROTECTIONS

| parameter | conditions/description | min | typ | max | units |
|--------------------------|-------------------------------------|-----|-----|-----|-------|
| over voltage protection | output voltage clamp, auto recovery | | | | Vdc |
| | 3.3, 5 Vdc output models | | | 7.5 | |
| | 9 Vdc output models | | | 15 | |
| | 12, 15 Vdc output models | | | 20 | |
| | 24 Vdc output models | | | 30 | |
| | 48 Vdc output models | | | 60 | |
| over current protection | hiccup, auto recovery | 110 | | 300 | % |
| short circuit protection | hiccup, continuous, auto-recovery | | | | |

SAFETY & COMPLIANCE

| parameter | conditions/description | min | typ | max | units |
|---------------------|--|-------|-----|-----|-------|
| isolation voltage | input to output electric strength test for 1 minute, leakage current <5 mA | 3,000 | | | Vac |
| safety approvals | IEC/EN/UL 62368-1 certified (designed to meet IEC/EN/UL 60335-1) | | | | |
| safety class | Class II | | | | |
| conducted emissions | CISPR32/EN55032, Class B | | | | |
| radiated emissions | CISPR32/EN55032, Class B | | | | |
| ESD | IEC/EN61000-4-2, Contact ±6KV, Perf. Criteria B | | | | |
| radiated immunity | IEC/EN61000-4-3 10V/m perf. Criteria A | | | | |

SAFETY & COMPLIANCE (CONTINUED)

| parameter | conditions/description | min | typ | max | units |
|------------------------------|--|---------|-----|-----|-------|
| EFT/burst | IEC/EN61000-4-4, ±2 kV, perf. Criteria B | | | | |
| surge | IEC/EN61000-4-5, line to line ±1KV, perf. Criteria B | | | | |
| conducted immunity | IEC/EN61000-4-6, 10 Vrms, Perf. Criteria A | | | | |
| voltage dips & interruptions | IEC/EN61000-4-11 , 0%,70%, perf. Criteria B | | | | |
| MTBF | as per MIL-HDBK-217F at 25°C | 300,000 | | | hours |
| RoHS | yes | | | | |

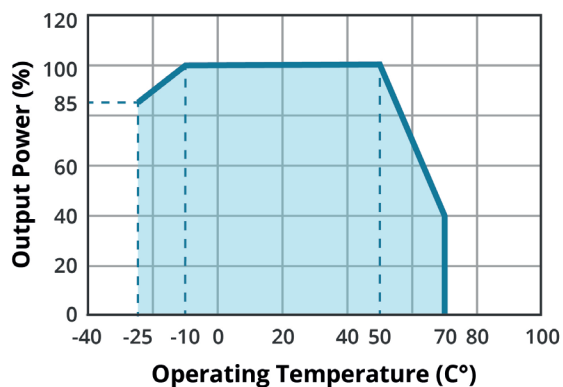
Notes: 4. The power supply is considered a component which will be installed into final equipment. The final equipment still must be tested to meet the necessary EMC directives.

ENVIRONMENTAL

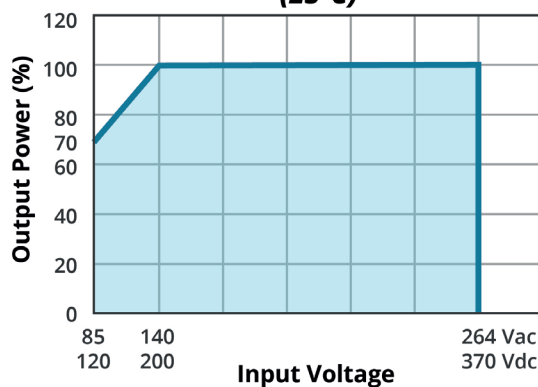
| parameter | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature | see derating curves | -25 | | 70 | °C |
| storage temperature | | -25 | | 85 | °C |
| storage humidity | non-condensing | | | 90 | % |

DERATING CURVES

TEMPERATURE DERATING CURVE

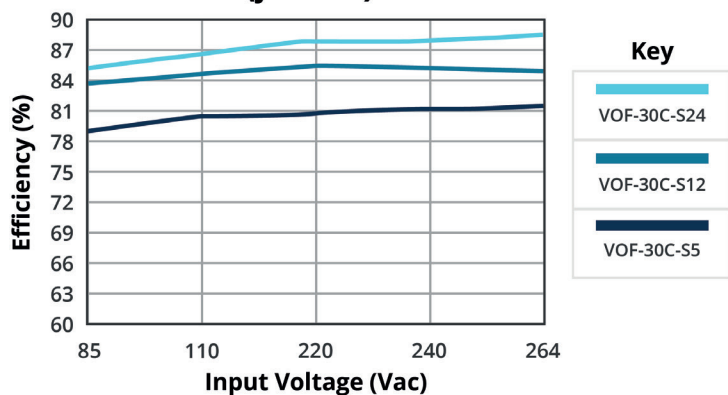


INPUT VOLTAGE DERATING CURVE (25°C)

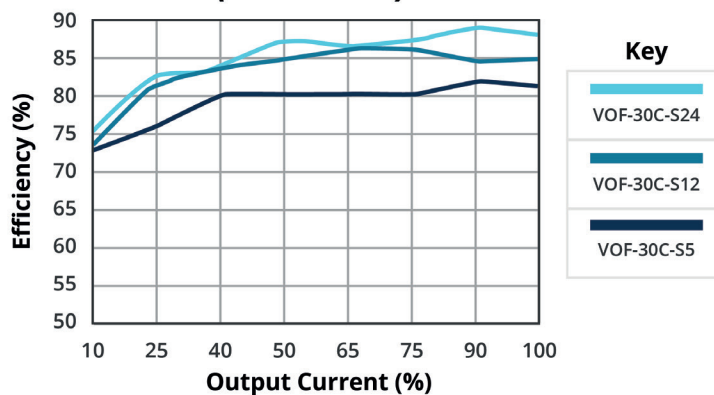


EFFICIENCY CURVES

EFFICIENCY VS INPUT VOLTAGE
(full load)



EFFICIENCY VS OUTPUT LOAD
($V_{in} = 230\text{ Vac}$)



DESIGN REFERENCE

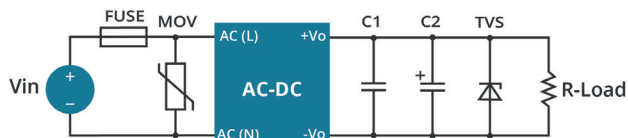


Fig. 1: Typical circuit diagram

| Part No. | FUSE | MOV | C1 (μF) | C2 (μF) | TVS |
|-------------|----------------------|---------|----------------------|----------------------|----------|
| VOF-30C-S3 | 2A/250V slow-blow | S14K300 | 0.1 | 22 | SMBJ7.0A |
| VOF-30C-S5 | | | | | SMBJ7.0A |
| VOF-30C-S9 | | | | | SMBJ12A |
| VOF-30C-S12 | | | | | SMBJ20A |
| VOF-30C-S15 | | | | | SMBJ20A |
| VOF-30C-S24 | | | | | SMBJ30A |
| VOF-30C-S48 | | | | | SMBJ64A |

Output Filter Components:

We recommend using an electrolytic capacitor with high frequency, and low ESR rating for C2 (refer to manufacture's datasheet). Choose a Capacitor voltage rating with at least 20% margin, in other words not exceeding 80%. C1 is a ceramic capacitor used for filtering high-frequency noise and TVS is a recommended suppressor diode to protect the application in case of a converter failure.

MECHANICAL

| parameter | conditions/description | min | typ | max | units |
|------------|------------------------|-----|-----|-----|-------|
| dimensions | 76.2 x 50.8 x 27 | | | | mm |
| weight | | | 62 | | g |

MECHANICAL DRAWING (BOARD MOUNT)

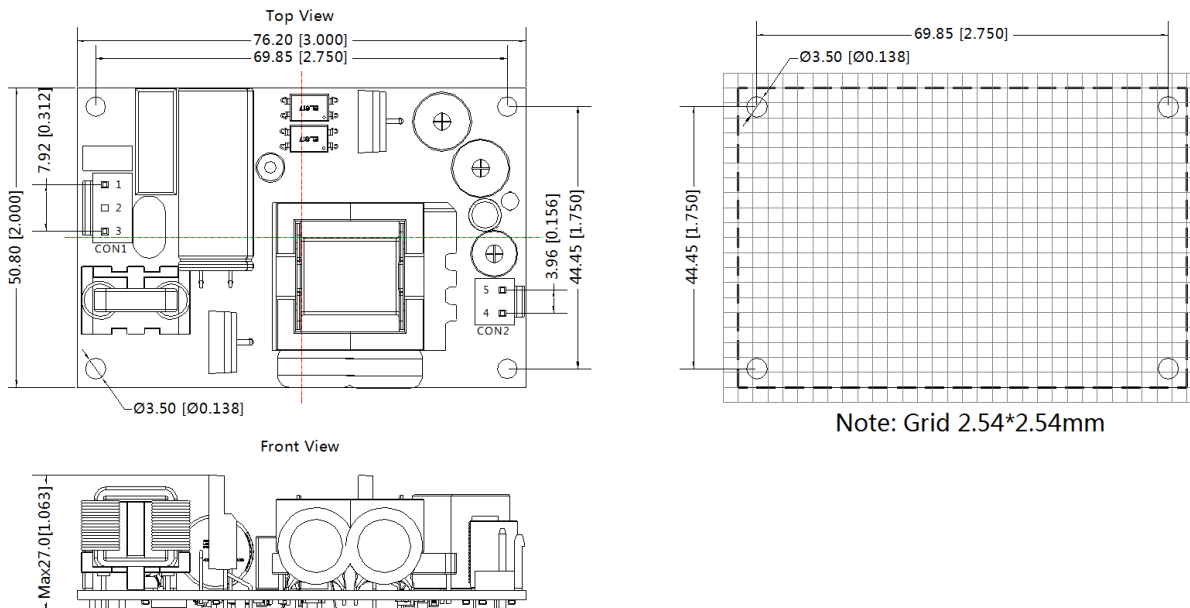
units: mm[inch]

tolerance: ±0.50[±0.020]

In CON1 model: VH-3A, Recommended terminal: VH-3Y

Out CON2 model: VH-2A, recommended terminal: VH-2Y

Mounting hole screwing torque: Max 0.4 N·m



| PIN-Out | | | |
|---------|----------|--|---|
| PIN | Function | Connector | Terminal |
| 1 | AC(L) | VH-3A or B2P3-VH or the same Spec. | VH-3Y or VHR-3N or the same Spec. |
| 2 | NoPin | | |
| 3 | AC(N) | | |
| 4 | -Vo | VH-2A or B2P-VH or the same Spec. | VH-2Y or VHR-2N or the same Spec. |
| 5 | +Vo | | |

REVISION HISTORY

| rev. | description | date |
|------|--|------------|
| 1.0 | initial release | 10/24/2019 |
| 1.01 | company logo updated | 11/30/2020 |
| 1.02 | derating and efficiency curves and circuit diagram updated | 02/10/2022 |
| 1.03 | UKCA mark added | 06/06/2022 |

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



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CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

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