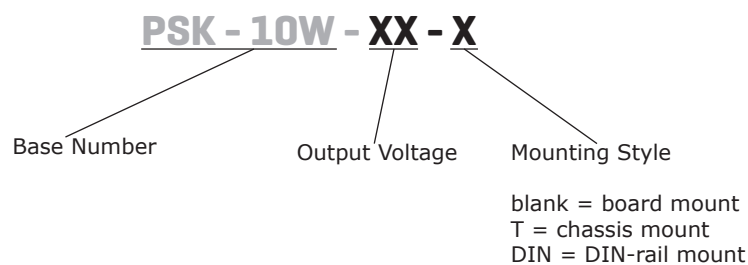


SERIES: PSK-10W | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY
FEATURES

- wide input range (85~305 Vac)
- UL/EN/IEC 62368 certified
- meets CISPR32/EN 55032 Class B without external components
- short-circuit, over-current, over-voltage protections



| MODEL | output voltage | output current | output power | ripple and noise | efficiency |
|------------|----------------|----------------|--------------|------------------|------------|
| | (Vdc) | max (A) | max (W) | typ (mVp-p) | typ (%) |
| PSK-10W-3 | 3.3 | 2.0 | 6.6 | 100 | 72 |
| PSK-10W-5 | 5 | 2.0 | 10 | 100 | 76 |
| PSK-10W-9 | 9 | 1.1 | 10 | 100 | 79 |
| PSK-10W-12 | 12 | 0.9 | 10.8 | 100 | 81 |
| PSK-10W-15 | 15 | 0.7 | 10.5 | 100 | 81 |
| PSK-10W-24 | 24 | 0.45 | 10.8 | 100 | 82 |

PART NUMBER KEY

INPUT

| parameter | conditions/description | min | typ | max | units |
|---------------------------|------------------------|-----|-----|-----|-------|
| voltage | ac input | 85 | | 305 | Vac |
| | dc input | 100 | | 430 | Vdc |
| frequency | | 47 | | 63 | Hz |
| current | at 115 Vac | | | .23 | A |
| | at 230 Vac | | | .15 | A |
| inrush current | at 115 Vac | | 15 | | A |
| | at 230 Vac | | 30 | | |
| leakage current | 230 Vac / 50 Hz | | | .25 | mA |
| no load power consumption | at 230 Vac | | | 0.5 | W |

OUTPUT

| parameter | conditions/description | min | typ | max | units |
|-------------------------|------------------------|-----|-------|-------|-------|
| capacitive load | 3.3 Vdc output models | | | 26400 | μF |
| | 5 Vdc output models | | | 9440 | |
| | 9 Vdc output models | | | 3600 | |
| | 12 Vdc output models | | | 2000 | |
| | 15 Vdc output models | | | 1170 | |
| | 24 Vdc output models | | | 370 | |
| output voltage accuracy | 3.3 V | | ±3 | | % |
| | all other models | | ±2 | | % |
| line regulation | full load | | ±0.5 | | % |
| load regulation | 0~100% load | | ±1.0 | | % |
| hold-up time | at 115 Vac | | 8 | | ms |
| | at 230 Vac | | 75 | | ms |
| switching frequency | | | 100 | | kHz |
| temperature coefficient | | | ±0.02 | | %/°C |

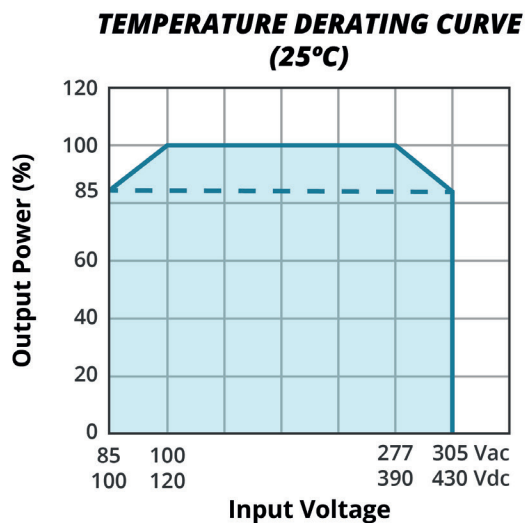
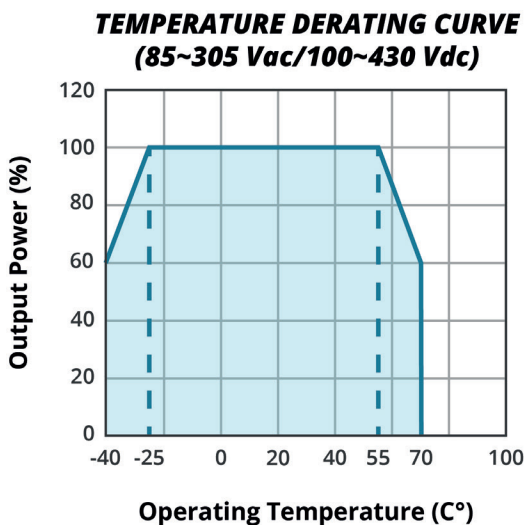
PROTECTIONS

| parameter | conditions/description | min | typ | max | units |
|--------------------------|-----------------------------------|-----|-----|-----|-------|
| over voltage protection | 3.3 / 5 Vdc output models | | | 9 | V |
| | 9 Vdc output models | | | 15 | |
| | 12 Vdc output models | | | 20 | |
| | 15 Vdc output models | | | 25 | |
| | 24 Vdc output models | | | 35 | |
| over current protection | self recovery | 110 | | 300 | % |
| short circuit protection | hiccup, continuous, self recovery | | | | |

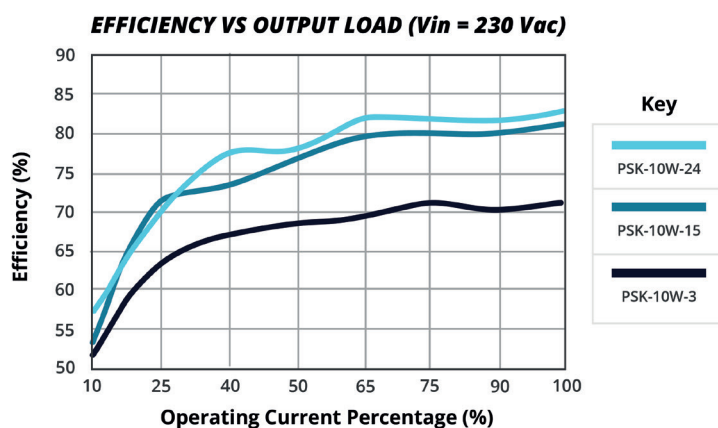
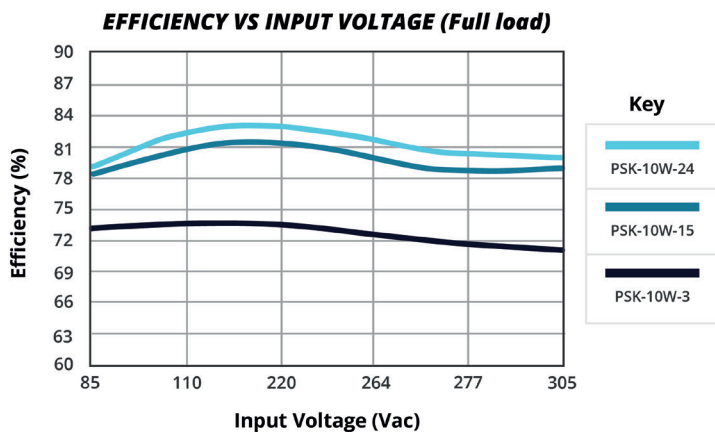
SAFETY & COMPLIANCE

| parameter | conditions/description | min | typ | max | units |
|--------------------|---|---------|-----|-----|-------|
| isolation voltage | input to output | 4,000 | | | Vac |
| safety approvals | IEC 62368/EN 62368/UL 62368 | | | | |
| safety class | Class II | | | | |
| EMI/EMC | CISPR 32/EN 55032: 2015 Class B | | | | |
| ESD | IEC/EN 61000-4-2: Contact $\pm 6\text{KV}$ / Air $\pm 8\text{KV}$, perf. Criteria B | | | | |
| radiated immunity | IEC/EN 61000-4-3: 10V/m, perf. Criteria A | | | | |
| EFT/burst | IEC/EN 61000-4-4: $\pm 2\text{KV}$, perf. Criteria B IEC/EN 61000-4-4: $\pm 4\text{KV}$, see recommended circuit, perf. Criteria B | | | | |
| surge | IEC/EN 61000-4-5: line to line $\pm 1\text{KV}$, perf. Criteria B IEC/EN 61000-4-5: line to line $\pm 2\text{KV}$, line to ground $\pm 4\text{KV}$, see recommended circuit | | | | |
| conducted immunity | IEC/EN 61000-4-6: 10Vr.m.s, perf. Criteria A | | | | |
| voltage dips | IEC/EN 61000-4-11: 0%, 70% | | | | |
| MTBF | as per MIL-HDBK-217F @ 25°C | 300,000 | | | hours |
| RoHS | yes | | | | |

DERATING CURVE



EFFICIENCY CURVES



ENVIRONMENTAL

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

SOLDERABILITY

| parameter | conditions/description | min | typ | max | units |
|----------------|------------------------|-----|-----|-----|-------|
| wave soldering | for 5~10 seconds | 255 | 260 | 265 | °C |
| hand soldering | for 3~5 seconds | 350 | 360 | 370 | °C |

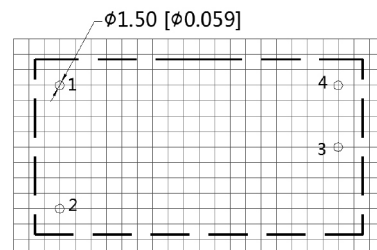
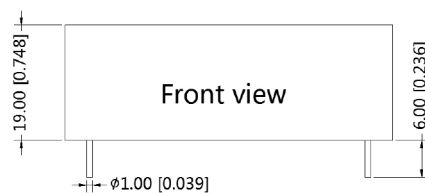
MECHANICAL

| parameter | conditions/description | min | typ | max | units |
|---------------|---|-----|-----|-----|-------|
| dimensions | 53.80 x 28.80 x 19.00 | | | | mm |
| weight | | | 48 | | g |
| cooling | free air convection | | | | |
| case material | Black plastic, flame-retardant and heat-resistant (UL94V-0) | | | | |

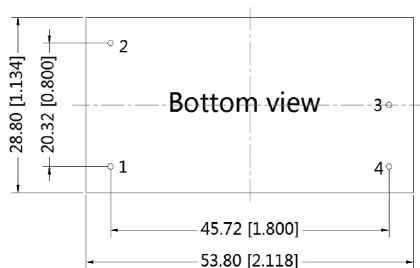
MECHANICAL DRAWING (BOARD MOUNT)

units: mm [inch]
 tolerance: ±0.50 [±0.020]
 pin diameter tolerances: ±0.10 [±0.004]

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



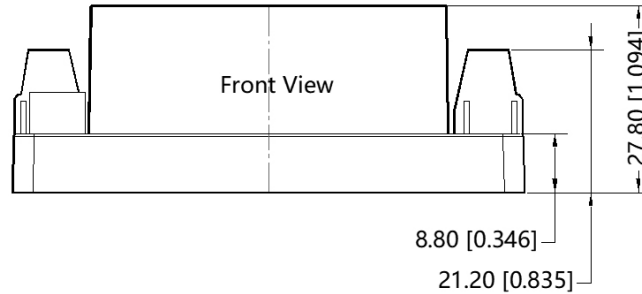
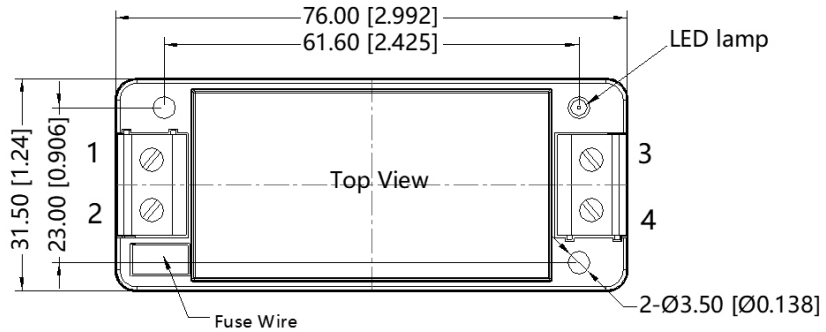
Note : Grid 2.54*2.54mm



MECHANICAL DRAWING [CHASSIS MOUNT]

units: mm [inch]
 tolerance: ± 0.50 [± 0.020]
 wire range: 24~12 AWG
 tightening torque: max 0.4 N·m

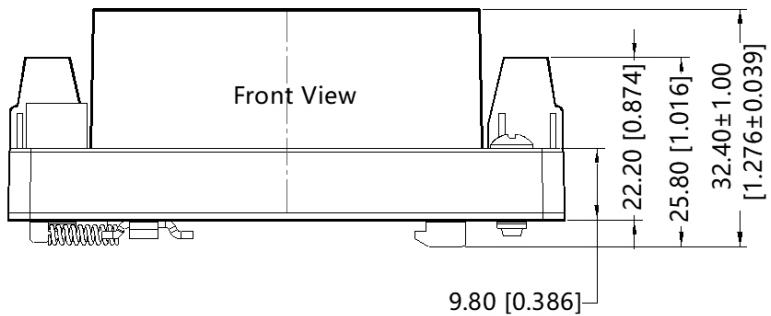
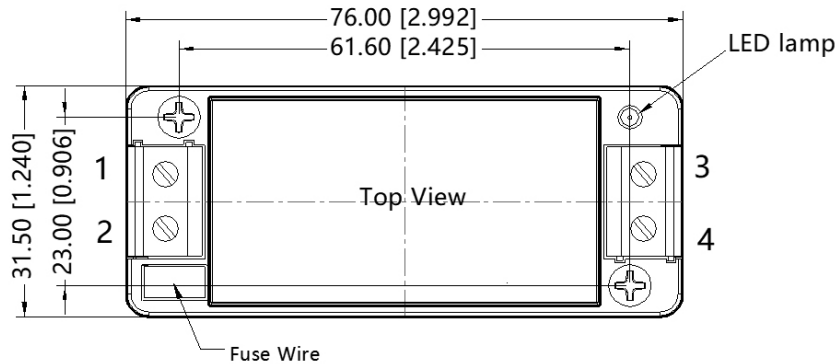
| PIN CONNECTIONS | |
|-----------------|----------|
| PIN | Function |
| 1 | AC (N) |
| 2 | AC (L) |
| 3 | -Vo |
| 4 | +Vo |



MECHANICAL DRAWING [DIN-RAIL MOUNT]

units: mm [inch]
 tolerance: ± 0.50 [± 0.020]
 wire range: 24~12 AWG
 tightening torque: max 0.4 N·m

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



TYPICAL APPLICATION CIRCUIT

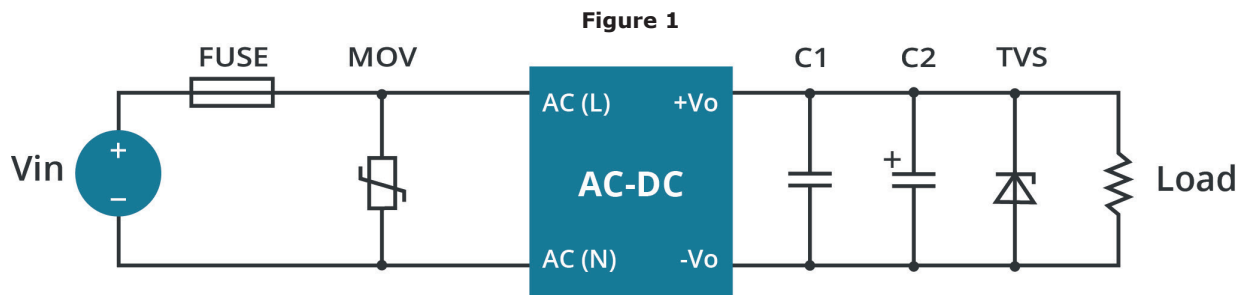


Table 1

| Recommended External Circuit Components | | | | | |
|---|-------------------|------------------|---------|-----------|----------|
| Vo (Vdc) | FUSE ⁶ | MOV ⁶ | C1 | C2 | TVS |
| 3.3 | 2A/300V | S14K350 | 1μF/50V | 470μF/10V | SMBJ7.0A |
| 5 | 2A/300V | S14K350 | 1μF/50V | 470μF/10V | SMBJ7.0A |
| 9 | 2A/300V | S14K350 | 1μF/50V | 220μF/25V | SMBJ15A |
| 12 | 2A/300V | S14K350 | 1μF/50V | 220μF/25V | SMBJ20A |
| 15 | 2A/300V | S14K350 | 1μF/50V | 220μF/25V | SMBJ20A |
| 24 | 2A/300V | S14K350 | 1μF/50V | 100μF/35V | SMBJ30A |

Notes: 6. Chassis Mount and DIN-Rail Mount versions include the fuse and MOV components.

EMC RECOMMENDED CIRCUIT

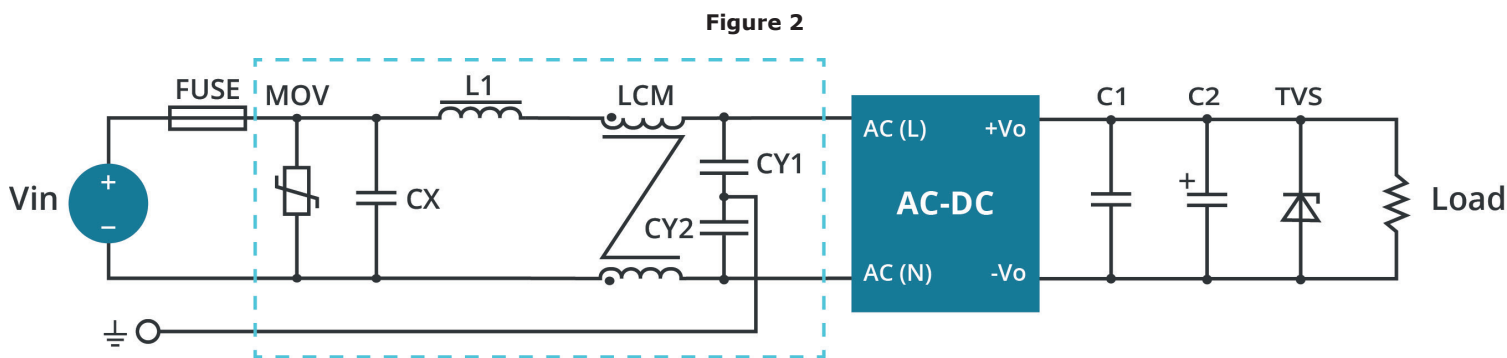


Table 2

| Recommended External Circuit Components | |
|---|---------------------------|
| FUSE | 3.15 A/300 V, slow fusing |
| MOV | S14K350 |
| LCM | 2.2 mH |
| CX | 0.1 μF/310 Vac |
| L1 | 4.7 μH/ 2 A |
| CY1/CY2 | 1000 pF/400 Vac |

Note: Also refer to Table 1.

Notes: 7. C1 is a ceramic capacitor used to filter high frequency noise.
 8. C2 is an electrolytic capacitor and it is recommended to be high frequency and low impedance. For capacitance and current of capacitor, refer to the datasheet provided by the manufacturer. Voltage derating of capacitor should be at least 80%.
 9. TVS is a recommended component to protect post-circuits (if converter fails).

REVISION HISTORY

| rev. | description | date |
|------|-------------------------------------|------------|
| 1.0 | initial release | 06/29/2020 |
| 1.01 | mechanical drawings updated | 12/03/2020 |
| 1.02 | figure and circuit drawings updated | 02/24/2021 |
| 1.03 | UKCA mark added | 05/26/2022 |

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



Headquarters
20050 SW 112th Ave.
Tualatin, OR 97062
800.275.4899

Fax 503.612.2383
cuicom
techsupport@cuicom

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