# SM50-xxP2 series

## 50W single Output Swithching power Supply

## Features:

- Universal AC input range
- Withstand 300VAC surge input for 5 second
- Small size, 1U low profile
- Wide working temperature range
- Protections: Short circuit / Overload / Over voltage
- Operating altitude up to 5000m
- Capable of withstanding 5G vibration testing
- High cost-effectiveness and High reliability
- LED indicator for power on
- 100% full load burn-in test
- 3 years warranty

## Specification

| MODEL | | SM50-5P2 | SM50-12P2 | SM50-15P2 | SM50-24P2 | SM50-36P2 | SM50-48P2 |
|---|---|---|---|---|---|---|---|
| INPUT | VOLTAGE RANGE | 85～264Vac 120~370VDC(refer to 'static characteristic') | | | | | |
| | FREQUENCY RANGE | 47～63Hz | | | | | |
| | EFFICIENCY(Typ.) | 81% | 87% | 87% | 88.5% | 89% | 90% |
| | AC CURRENT(Typ.) | 1A/115Vac 0.6A/230Vac | | | | | |
| | INRUSH CURRENT(Typ.) | 50A/230Vac (cold start) | | | | | |
| | LEAKAGE CURRENT | <0.75mA/240Vac | | | | | |
| OUTPUT | DC VOLTAGE | 5V | 12V | 15V | 24V | 36V | 48V |
| | RATED CURRENT | 10A | 4.2A | 3.4A | 2.2A | 1.45A | 1.1A |
| | CURRENT RANGE | 0~10A | 0~4.2A | 0~3.4A | 0～2.2A | 0～1.45A | 0~1.1A |
| | RATED POWER | 50W | 50.4W | 51W | 52.8W | 52.2W | 52.8W |
| | RIPPLE&NOISE(max.) | 80mVp-p | 100mVp-p | 100mVp-p | 100mVp-p | 150mVp-p | 150mVp-p |
| | VOLTAGE ADJ. RANGE | 4. 5～5.5V | 10.2～13.8V | 13.5～18V | 21.6～28.8V | 32.4～39.6V | 43.2～52.8V |
| | VOLTAGE TOLERANCE | ±2% | ±1% | ±1% | ±1% | ±1% | ±1% |
| | LINE REGULATION | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% |
| | LOAD REGULATION | ±1% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% |
| | SETUP, RISE TIME | 1000ms,50ms/230Vac 2000ms,50ms/115Vac full-load | | | | | |
| | HOLD UP TIME(Typ.) | 30ms/230Vac 12ms/115Vac full-load | | | | | |
| PROTECTION | OVER LOAD | 110%～160% rated output power | | | | | |
| | | Protection type: Hiccup mode ,recovers automatically after fault condition is removed. | | | | | |
| | OVER VOLTAGE | 6~9V | 13.8~17.5V | 18.8~21.8V | 28.8~36.5V | 41.4~48.6V | 55.2~64.8V |
| | | Protection type: Hiccup mode ,recovers automatically after fault condition is removed. | | | | | |
| ENVIRONIMENT | WORKING TEMP. | -30～+70℃(Refer to "Derating curve") | | | | | |
| | WORKING HUMIDITY | 20～90% RH non-condensing | | | | | |
| | STORAGETEMP.,HUMIDITY | -40～+85℃,10～95% RH non-condensing | | | | | |
| | TEMP. COEFFICIENT | ±0.03%/℃(0～50℃) | | | | | |
| | VIBRATION | 10～500Hz,5G 10min./1 cycle, period for 60 min. each along X、Y、Z axes | | | | | |
| | OVERVOLTAGE LEVEL | III; Refer to UL61558; EN50178;EN60664-1,EN62477-1;altitude up to 2000 meters | | | | | |



 

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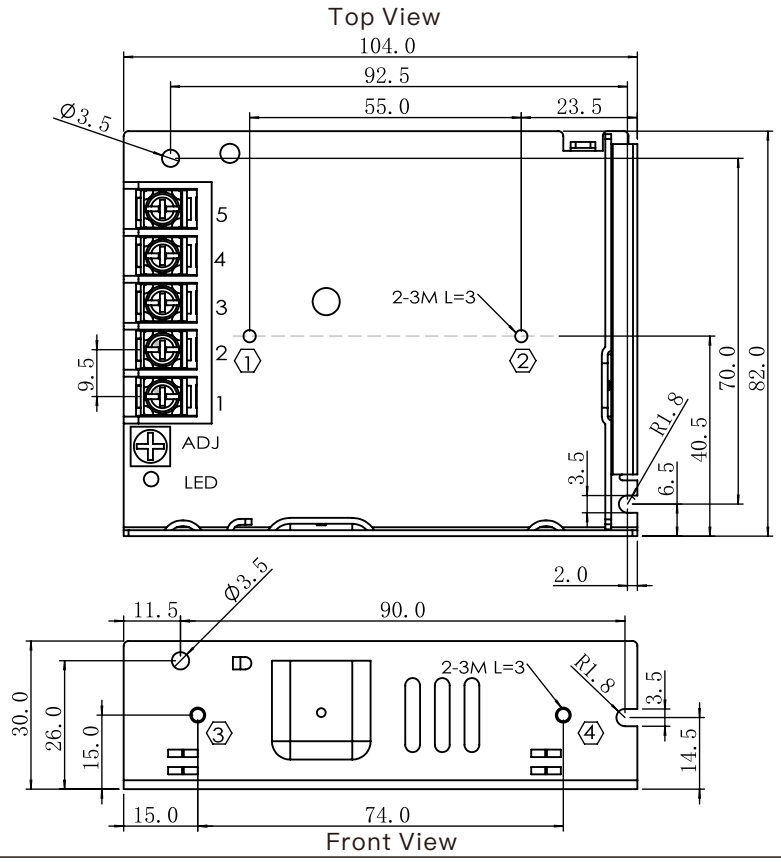
|---|---|---|---|---|
| Safety and electromagnetic compatibility | Safety standards | Refer to UL62368-1,TUV EN62368-1,CCC GB4943.1 | | |
| | Withstand voltage and isolation resistance | I/P-O/P: 4KVac; 100MΩ / 500Vdc / 25℃ / 70%RH | | |
| | | I/P-FG: 2KVac; 100MΩ / 500Vdc / 25℃ / 70%RH | | |
| | | O/P-FG: 1.25KVac; 100MΩ / 500Vdc / 25℃ / 70%RH | | |
| | Electromagnetic compatibility emission | **Parameter** | **Standard** | **Test Level / Note** |
| | | Conducted emission | BS EN/EN55032(CISPR32),FCC PART 15 / CISPR22 ,GB9254.1 | Class B |
| | | Radiated emission | BS EN/EN55032(CISPR32),FCC PART 15 / CISPR22 ,GB9254.1 | Class B |
| | | Harmonic current | BS EN/EN61000-3-2,GB17625.1 | Class A |
| | | Voltage flicker | BS EN/EN61000-3-3 | ---- |
| | Electromagnetic compatibility immunity | BS EN/EN55035 | | |
| | | **Parameter** | **Standard** | **Test Level /Note** |
| | | ESD | BS EN/EN61000-4-2 | Level 4, 8KV air, Level 2, 4KV contact, criteria A |
| | | RF field susceptibility | BS EN/EN61000-4-3 | Level 3, criteria A |
| | | EFT bursts | BS EN/EN61000-4-4 | Level 3, criteria A |
| | | Surge susceptibility | BS EN/EN61000-4-5 | Level 4, 2KV/L-N, 4KV/L/N-FG criteria A |
| | | Conducted susceptibility | BS EN/EN61000-4-6 | Level 3, criteria A |
| | | Magnetic field immunity | BS EN/EN61000-4-8 | Level 4, criteria A |
| | | Voltage dips and interruptions | BS EN/EN61000-4-11 | >95% dip 0.5 periods, 30% dip 25 periods , >95% interruptions 250 periods |
| OTHERS | MTBF | ≥645Khrs MIL-HDBK-217F(25℃) | | |
| | DIMENSION | 104*82*30mm(L*W*H) | | |
| | PACKING | 0.23Kg; 60pcs/ 14.8Kg/ 1.03CUFT | | |

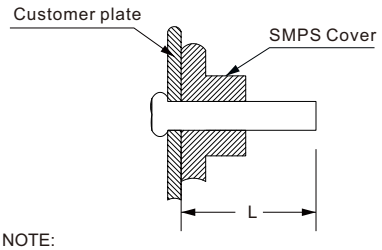
**NOTE**

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.
3. Tolerance: includes set up tolerance, line regulation and load regulation.
4. Line regulation is measured from low line to high line at rated load.
5. Load regulation is measured from 0% to 100% rated load
6. Length of set up time is measured at cold first start, Turning ON/OFF the power supply very quickly may lead to increase of the set up time.
7. The ambient temperature derating of 5℃/1000m is needed for operating altitude great than 2000m(6500ft).
8. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives.

## Mechanical specification



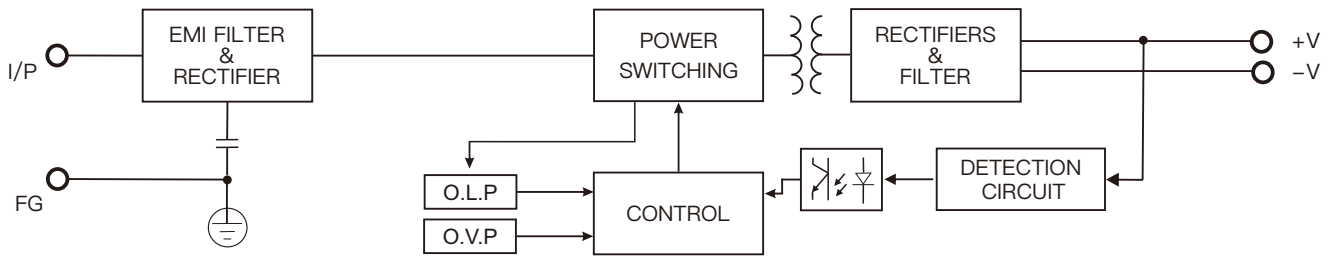




NOTE:
Unit: mm
SVR1:Output adjustable resistor
Torque:M3.5, 0.8N • m Max
TOL: ±1.00
Terminal protection cover optional
(not provided for standard products)

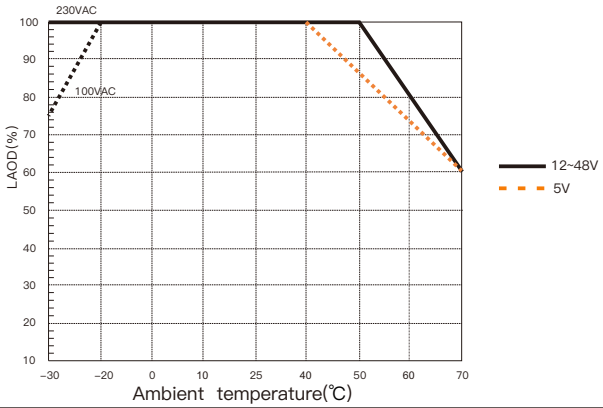
| Position No. | Screw Size | L max | Torque max |
|---|---|---|---|
| 1-2 | M3 | 3mm | 0.4N • m |
| 3-4 | | | |

| Screw Terminal | | | |
|---|---|---|---|
| Pin No. | Assignment | Pin No. | Assignment |
| 5 | AC/L | 2 | DC OUTPUT – |
| 4 | AC/N | 1 | DC OUTPUT + |
| 3 | FG | | |

## Block diagram




## Derating curve




## Static characteristics