

AC/DC U-Channel

500 Watts SMQ500 Series

XPiQ inc.

Intelligent Design Quality Product



- High Power Density
- High Peak Load Rating
- Active PFC
- Universal Input
- Single Outputs from 3.3 V to 54 V
- International Safety Approvals

Specification

Input

- | | |
|-----------------|--|
| Input Voltage | • 90-264 VAC |
| Input Frequency | • 47-63 Hz |
| Power Factor | • 0.99 typical |
| Inrush Current | • 70 A Peak at 230 VAC |
| Input Current | • 8 A at 90 VAC |
| Leakage Current | • <3.5 mA |
| Remote On/Off | • On = TTL Logic HIGH, or open circuit
Off = TTL Logic LOW or short circuit |

Output

- | | |
|----------------------------|---|
| Output Voltage | • 3.3 VDC to 54 VDC |
| Output Power | • See Table |
| Output Voltage Adjustment | • $\pm 5\%$ |
| Minimum Load | • No minimum load required |
| Line Regulation | • $\pm 0.5\%$ from low line to high line |
| Load Regulation | • $\pm 1\%$ |
| Ripple & Noise | • 50mV ($V_o \leq 5V$), 1% ($V_o \geq 12V$) |
| Transient Response | • 5% max deviation, 2.5 ms recovery time to within 1% for a 50% load change |
| Hold up Time | • 20ms minimum at 120 VAC and 80% load |
| Turn On Time | • 1 second max at 120 VAC |
| Overvoltage Protection | • 130% recycle input to reset |
| Overcurrent Protection | • 110% to 135% with auto recovery |
| Overtemperature Protection | • $>85^\circ\text{C}$ ambient with auto recovery measured internally |
| Remote Sense | • Compensates for up to 0.5 V drop |

General

- | | |
|-------------------|---|
| Efficiency | • 70% minimum at 230 VAC, 65% min for $V_o \leq 5V$ |
| Power Density | • 5.13 W/in ³ |
| MTBF | • 100,000 hrs per MIL-HDBK-217F |
| Isolation Voltage | • 3000 VAC Input to Output
1500 VAC Input to Ground
500 VAC Output to Ground |
| Signals | • Green LED for Power On
DC OK TTL HIGH within 100-500 ms
LOW at least 1 ms before loss of regulation |
| Size | • 9.17" x 4.25" x 2.50" |
| Weight | • 0.5 lbs. (1.1kg) approx |

Environmental

- | | |
|-----------------------|---|
| Operating Temperature | • 0°C to $+70^\circ\text{C}$ derate linearly from 100% load at $+50^\circ\text{C}$ to 50% load at $+70^\circ\text{C}$ |
| Cooling | • Via internal fan |
| Relative Humidity | • 5% to 90%, non-condensing |
| Storage Temperature | • -20°C to $+85^\circ\text{C}$ |

EMC & Safety

- | | |
|------------------|---|
| Safety Approvals | • UL1950, CSA C22.2 No 950
EN60950, CE Mark LVD |
| EMI/EMC | • Meets EN61000-3-2, -3
FCC Part 15 and CISPR 22 Class B conducted |

OUTPUT VOLTAGE & CURRENT RATINGS

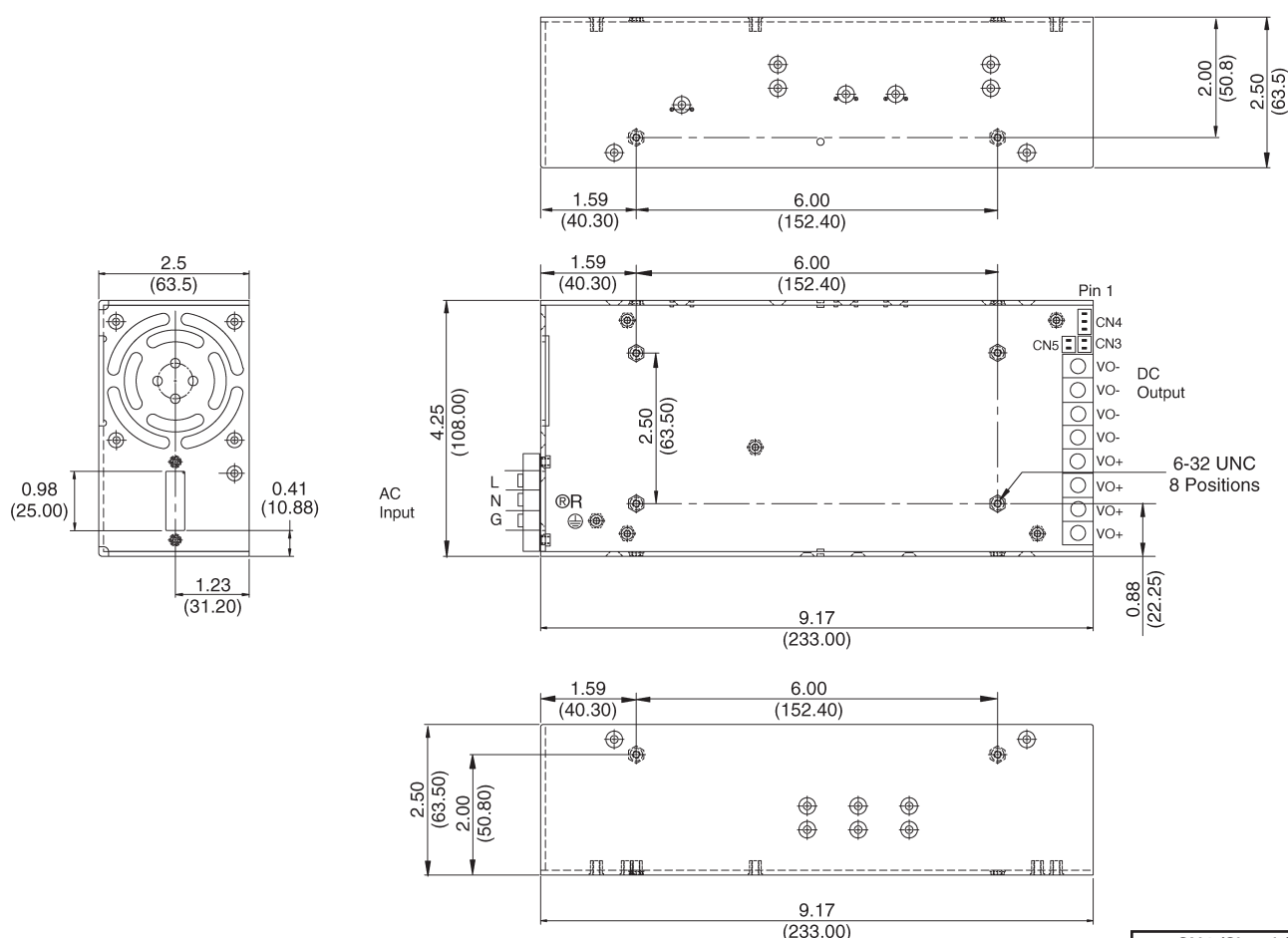
SMQ500

Maximum Power	Output Voltage	Output Current		Ripple & Noise ⁽³⁾	Model Number
		Maximum	Peak ⁽¹⁾		
330 W	3.3 V	100.00 A	180.00 A	50 mV	SMQ500PS03-C
400 W	5.0 V	80.00 A	160.00 A	50 mV	SMQ500PS05-C
500 W	12.0 V	41.00 A	75.00 A	120 mV	SMQ500PS12-C
500 W	15.0 V	31.00 A	56.00 A	150 mV	SMQ500PS15-C
500 W	18.0 V	27.77 A	54.00 A	180 mV	SMQ500PS18-C
500 W	24.0 V	22.00 A	40.00 A	240 mV	SMQ500PS24-C
500 W	27.0 V	18.50 A	40.00 A	270 mV	SMQ500PS27-C
500 W	48.0 V	10.00 A	18.80 A	480 mV	SMQ500PS48-C
500 W	54.0 V	9.25 A	18.80 A	540 mV	SMQ500PS54-C

Notes

- Standard models have foldback mode current protection with a high peak load capability. This peak can be taken for 1 ms only.
- For optional constant current versions, add suffix 'B' to model number (current limit range is 95-105% of max output current). Not available on 3.3 V and 5 V models.
- Ripple and noise measured using 0.1 μ F ceramic and 22 μ F electrolytic capacitor, 20 MHz bandwidth.
- Part numbers in bold are stocking models. Others are build to order.
- Other output voltages are available, contact factory for details.

Mechanical Details



NOTES:

- Dimensions in inches (mm).
- Remote ON/OFF CN4 mates with JST XHP-3 or equivalent
- Fan Connector CN3 is wired in parallel to the internal fan. No auxiliary output is available.
- Remote sense CN5 mates with JST XHP-2 or equivalent.
- Weight: 0.5 lb (1.1 kg) approx.

CN4 (Signals)	
Pin	Function
1	ON/OFF
2	DC OK
3	RTN

CN5 (Remote Sense)	
Pin	Function
1	+ RS
2	- RS