

High Power Density Single Output Supplies

500/600 Watts SMQ500/600 Series



THE **XP**ERTS IN POWER

- 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 - SMQ500 10 A at 90 VAC - SMQ600
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 Tables
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
Undervoltage Protection	• Shutdown below 80 VAC (± 5 V), restart above 80 VAC

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	• 6.93 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	• 233.0 x 108.0 x 63.5 mm
Weight	• 1.1 kg 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
EMC	• Meets EN61000-3-2, -3 FCC Part 15 and CISPR 22 Class B conducted EN61000-4-2, -3, -4, -5, -6, -8, -11 immunity

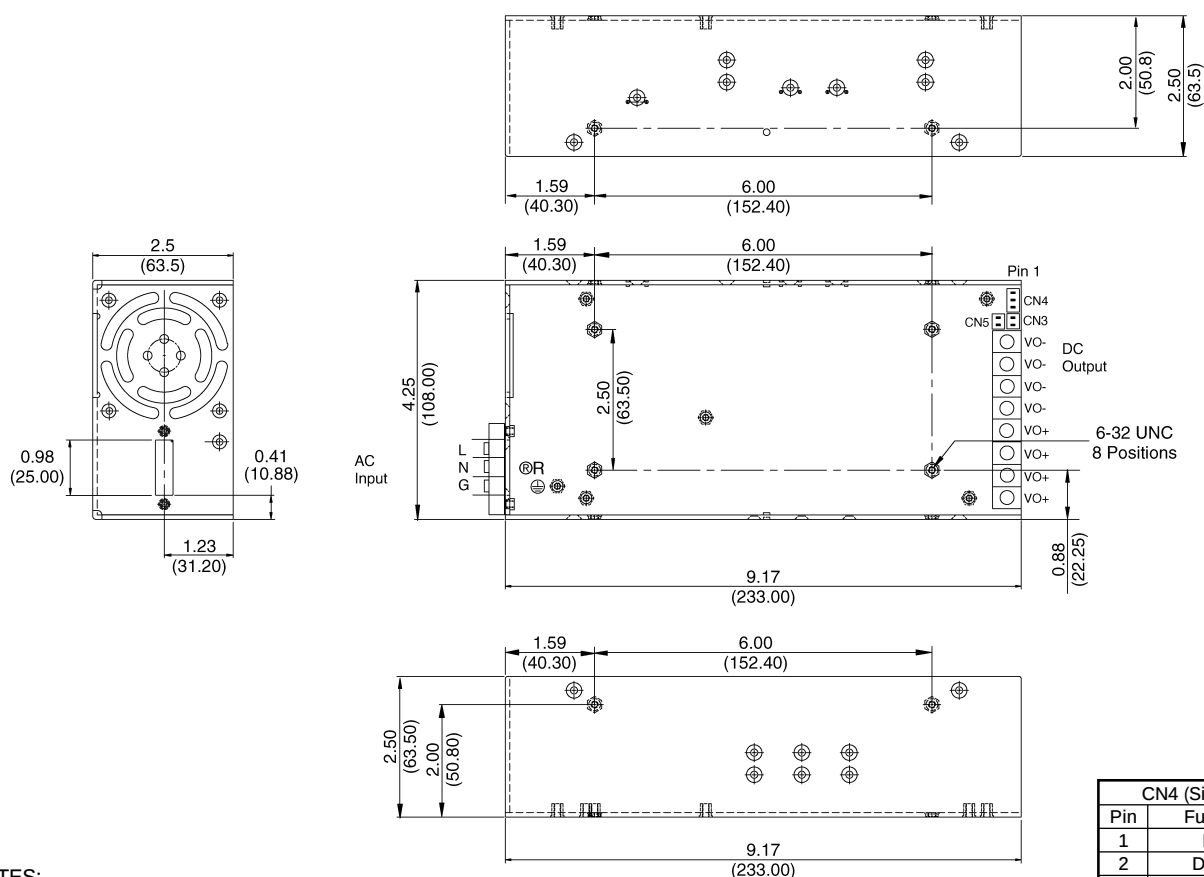
SMQ500/600

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	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
396 W	3.3 V	120.00 A	180.00 A	50 mV	SMQ600PS03-C
500 W	5.0 V	100.00 A	160.00 A	50 mV	SMQ600PS05-C
600 W	12.0 V	50.00 A	75.00 A	120 mV	SMQ600PS12-C
600 W	15.0 V	40.00 A	56.00 A	150 mV	SMQ600PS15-C
600 W	24.0 V	25.00 A	40.00 A	240 mV	SMQ600PS24-C
600 W	27.0 V	22.20 A	40.00 A	270 mV	SMQ600PS27-C
600 W	48.0 V	12.50 A	18.80 A	480 mV	SMQ600PS48-C
600 W	54.0 V	11.10 A	18.80 A	540 mV	SMQ600PS54-C

Notes

1. Standard models have foldback mode current protection with a high peak load capability. This peak can be taken for 1 ms only.
2. For optional constant current versions, add suffix 'B' to model number (current limit range is 95-105% of max output current).
3. Ripple and noise measured using 0.1 μ F ceramic and 22 μ F electrolytic capacitor, 20 MHz bandwidth.
4. Part numbers in bold are stocking models. Others are build to order.
5. Other output voltages are available, contact factory for details.

Mechanical Details



NOTES:

1. Dimensions in inches (mm).
2. Remote ON/OFF CN4 mates with JST XHP-3 or equivalent
3. Remote sense CN5 and fan CN3 mates with JST XHP-2 or equivalent.
4. Weight: 1.1 kg.

CN4 (Signals)	
Pin	Function
1	ROF
2	DC OK
3	RTN

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