

PHOTO COMING SOON

SM60P SERIES

37.5-64 WATT MEDICAL & ITE SWITCHING POWER SUPPLIES

UNIVERSAL INPUT

FEATURES

- ◆ Medical and industrial approvals
- ◆ Compact size 2" x 4" x 1.18"
- ◆ Single, dual and triple outputs
- ◆ Wide-range input 90-264 VAC
- ◆ Low earth leakage current
- ◆ Level B emissions
- ◆ RoHS compliant

DESCRIPTION

The SM60P series of compact, open PCB constructed, AC-DC switching power supplies are capable of delivering 37.5-64 watts of continuous output power at convection. They operate at 90-264 VAC input voltage without the need of voltage selection, and are suited for medical, information technology and industrial applications. Approval to both EN 60601-1 and EN 60950-1 safety standards improves design-in time and reduces end equipment compliance costs.

INPUT SPECIFICATIONS

Input Voltage:	90-264 VAC
Input Frequency:	47-63 Hz
Input Current:	1.3A (rms) for 100 VAC 0.7A (rms) for 240 VAC
Earth Leakage Current:	150 μ A max. @ 264 VAC, 60 Hz

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature:	-10°C to +70°C
Storage Temperature:	-40°C to +85°C
Relative Humidity:	5% to 95% non-condensing
Derating:	Derate from 100% at +50°C linearly to 50% at +70°C

GENERAL SPECIFICATIONS

Switching Frequency:	62 K \pm 5 KHz
Efficiency:	80-88% typical except SM60P31-3A and SM60P31-5A at 75% typical
Hold-up Time:	12 msec minimum at 110 VAC
Line Regulation:	\pm 0.5% maximum at full load
Inrush Current:	30A @ 115 VAC, or 60A @ 230 VAC, at 25°C cold start
Withstand Voltage:	4000 VAC from input to output 1500 VAC from input to ground 500 VAC from output to ground
MTBF (25°C ambient):	400,000 hours at full load at 25°C ambient, calculated per MIL-HDBK-217F

EMC PERFORMANCE

EN55011 / EN55022:	Class B conducted, class B radiated
FCC:	Class B conducted, class B radiated
VCCI:	Class B conducted, class B radiated
EN61000-3-2:	Harmonic distortion, class A and D
EN61000-3-3:	Line flicker
EN61000-4-2:	ESD, \pm 8 KV air and \pm 6 KV contact
EN61000-4-3:	Radiated immunity, 3 V/m
EN61000-4-4:	Fast transient/burst, \pm 2 KV
EN61000-4-5:	Surge, \pm 1 KV diff, \pm 2 KV com.
EN61000-4-6:	Conducted immunity, 3V rms
EN61000-4-8:	Magnetic field immunity, 3A/m
EN61000-4-11:	Voltage dips, 30% reduction for 500 ms 60% reduction for 100 ms >95% reduction for 10 ms

OUTPUT SPECIFICATIONS

Output voltage/current:	See rating chart
Maximum output power:	See rating chart
Ripple and noise:	2% peak to peak on 5.0 V model, 1% peak to peak on other models.
Overvoltage protection:	Provided on output #1 only; set at 112-132% of its nominal output voltage
Overcurrent protection:	All outputs protected to short circuit conditions
Temperature coefficient:	All outputs \pm 0.04% /°C maximum
Transient response:	Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 μ s after a 25% step load change

SAFETY PENDING

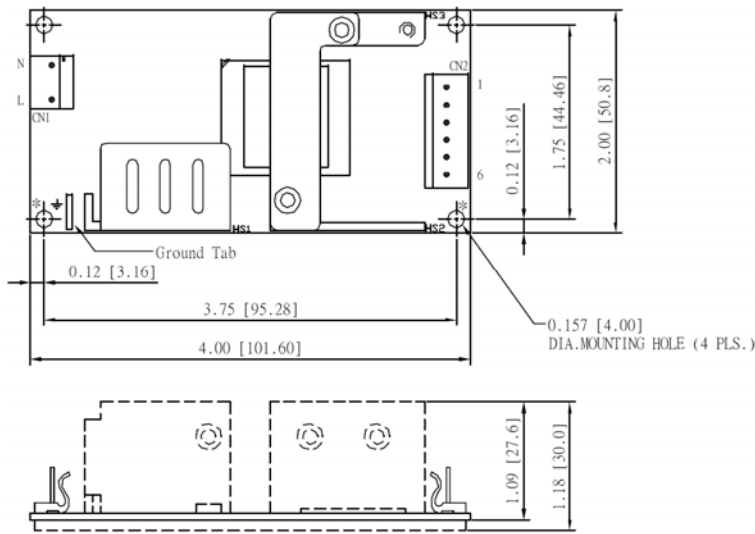


OUTPUT VOLTAGE/CURRENT RATING CHART

Model (1)	Output #1				Output #2				Output #3				Max. Power
	Vnom	Min.-Max. Current at convection	Min.-Max. Current at forced air (2)	Tol.	Vnom	Imin	Imax	Tol.	Vnom	Imin	Imax	Tol.	
SM60P10A	5 V	0-11 A	(N/A)	2%									55W
SM60P12A	12 V	0-5 A	(N/A)	2%									60W
SM60P13A	15 V	0-4.3 A	(N/A)	2%									64W
SM60P14A	24 V	0-2.7 A	(N/A)	2%									64W
SM60P18A	48 V	0-1.35 A	(N/A)	2%									64W
SM60P23A	+5 V	0.5-6 A	0.5-8 A	3%	+12 V	0.1 A	3 A	5%					55W
SM60P25A	+5 V	0.5-6 A	0.5-8 A	3%	+24 V	0.1 A	1.5 A	5%					55W
SM60P31A	+5 V	0.5-6 A	0.5-8 A	3%	+12 V	0.1 A	3 A	5%	-12 V	0 A	0.5 A	4%	55W
SM60P31-3A	+3.3 V	0.8-6 A	0.5-8 A	3%	+5.2 V	0.1 A	3 A	5%	+12 V	0 A	0.5 A	4%	37.5W
SM60P31-5A	+5 V	0.5-6 A	0.5-8 A	3%	+3.3 V	0 A	1.5 A	5%	+12 V	0 A	0.5 A	4%	37.5/47.5W (4)
SM60P32A	+5 V	0.5-6 A	0.5-8 A	3%	+15 V	0.1 A	2.4 A	5%	-15 V	0 A	0.5 A	4%	55W
SM60P39A	+5 V	0.5-6 A	0.5-8 A	3%	+24 V	0.1 A	1.5 A	5%	-12 V	0 A	0.5 A	4%	55W

- Notes:
1. Safety approvals are for PCB form only. To order unit with cover fitted, change suffix "A" to "C"
 2. Maximum current of output #1 of multi-output models can be 8 A at 5 CFM forced air provided by user.
 3. The maximum output power shown is convection rating.
 4. 47.5W with 5CFM forced air provide by user.

MECHANICAL SPECIFICATIONS



1. Dimensions shown in inches [mm]
2. Tolerance 0.02 [0.5] maximum
3. Input connector mates with Molex housing 09-50-3031 and Molex 2878 series crimp terminal.
4. Output connector mates with Molex housing 09-50-3061 and Molex 2878 series crimp terminal.
5. Ground tab is 0.25 [6.35] x 0.032 [0.8].
6. To ensure compliance with level B emissions, connect the two "*" marked mounting holes with metallic standoffs to chassis.
7. Weight: 205 grams (0.45 lbs.) approx.

PIN CHART

MODEL	PIN			1	2	3	4	5	6
SM60P10A SM60P12A SM60P14A	SM60P12A SM60P18A	SM60P13A		+V1	+V1	RTN	RTN	N.C	N.C
SM60P23A	SM60P25A			+V1	+V1	RTN	RTN	N.C	+V2
SM60P31A	SM60P32A	SM60P39A		+V1	+V1	RTN	RTN	-V3	+V2
SM60P31-3A	SM60P31-5A			+V1	+V1	RTN	RTN	+V3	+V2

Note: All data are subject to change without notice