30-48 WATT MEDICAL & ITE POWER SUPPLIES

DESCRIPTION

The PM42 series of compact, open PCB constructed, AC-DC switching power supplies are capable of delivering 30-48 watts of continuous output power at convection cooling. 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 EN60601-1 and EN62368-1 Safety Standards improves design-in time and reduces end equipment compliance costs.

PM42 SERIES

CE

RoHS

FEATURES

- BF Class insulation
- Medical and ITE approvals
- Compact size 2" x4" x1.18"
- Single, dual and triple outputs
- Wide-range input 90-264 VAC
- Low earth leakage current
- Level B emissions
- RoHS compliant

SAFETY STANDARD APPROVALS

c UL us	UL ES 60601-1, CSA C22.2 No. 60601-1 File No. E178020
TÜVRheinland CERTIFIED	TÜV EN 60601-1
TÜVRheinland	UL 62368-1, CSA-C22.2 No. 62368-1
TÜVRheinland ZERTIFIZIERT	TÜV EN 62368-1

INPUT SPECIFICATIONS

Input voltage:	90-264 VAC
Input frequency:	47-63 Hz
Input current:	0.9 A (rms) for 100 VAC 0.5 A (rms) for 240 VAC
Earth Leakage current:	150 µA max. @ 264 VAC, 63 Hz
Touch current:	100 µA max. @ 264 VAC, 63 Hz

OUTPUT SPECIFICATIONS

Output voltage/current:	See rating chart.
Maximum output power:	See rating chart.
Ripple and noise:	100 mV peak to peak on 3.3 V & 5.0 V models, 1% peak to peak on other models
Over voltage protection:	Provided on output #1 only; set at 112–132% of its nominal output voltage, automatic recovery
Short circuit protection:	Automatic recovery
Temperature coefficient:	All outputs ±0.04% /℃ maximum
Transient response:	Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 us after a 25% step load change

ENVIRONMENTAL SPECIFICATIONS

Operating temperature:	-10℃ to +70℃
Storage temperature:	-40℃ to +85℃
Relative humidity:	5% to 95% non-condensing
Temperature derating:	Derate from 100% at +50℃ linearly to 50% at +70℃

GENERAL SPECIFICATIONS

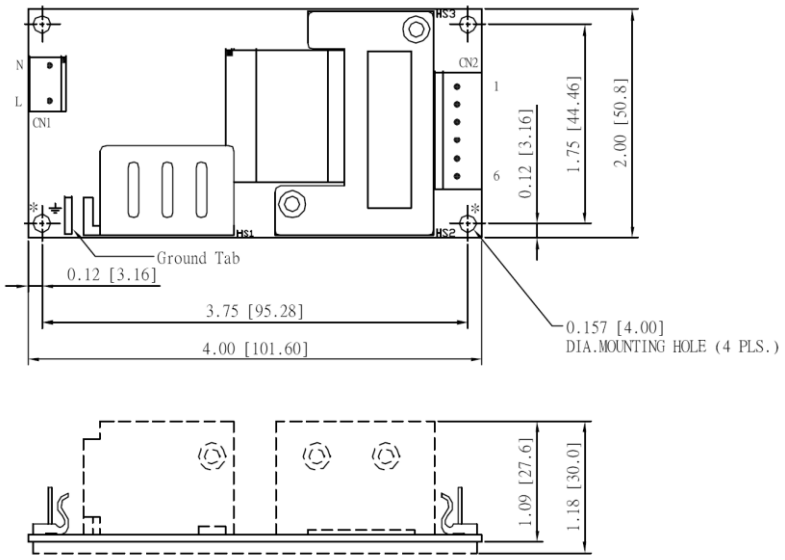
Switching frequency:	62 K±5 KHz
Efficiency:	80-88% typical except PM42-31-3A and PM42-31-5A at 75% typical
Hold-up time:	12 ms minimum at 110 VAC
Line regulation:	±0.5% maximum at full load
Inrush current:	25 A @ 115 VAC, or 50 A @ 230 VAC, at 25℃ cold start
Withstand voltage:	4000 VAC from input to output (2 MOPP) 1500 VAC from input to ground (1 MOPP) 1500 VAC from output to ground
MTBF:	400,000 hours at full load at 25℃ ambient, calculated per MIL-HDBK-217F
EMC Performance	
EN55011/ EN55032:	Class B conducted, class B radiated
EN61000-3-2:	Harmonic distortion, class A and D
EN61000-3-3:	Line flicker
EN60601-1-2, EN55024	
EN61000-4-2:	ESD, ±15 KV air and ±8 KV contact
EN61000-4-3:	Radiated immunity, 9-28 V/m
EN61000-4-4:	Fast transient/burst, ±2 KV
EN61000-4-5:	Surge, ±1 KV diff., ±2 KV com
EN61000-4-6:	Conducted immunity, 10 Vrms
EN61000-4-8:	Magnetic field immunity, 30 A/m
EN61000-4-11:	Voltage dip immunity, 30% reduction for 500 ms, 100% reduction for 10 ms

OUTPUT VOLTAGE/CURRENT RATING CHART

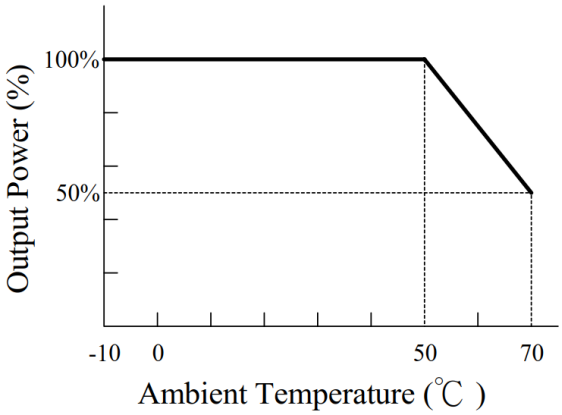
Model (1)	Output #1 V1	Min. Current	Max. Current	Tol.	Output #2 V2	Min. Current	Max. Current	Tol.	Output #3 V3	Min. Current	Max. Current	Tol.	Max. Output Power
PM42-10A	5 V	0 A	8.0 A	±2%	(N/A)				(N/A)				40 W
PM42-12A	12 V	0 A	3.5 A	±2%	(N/A)				(N/A)				42 W
PM42-13A	15 V	0 A	3.0 A	±2%	(N/A)				(N/A)				45 W
PM42-14A	24 V	0 A	2.0 A	±2%	(N/A)				(N/A)				48 W
PM42-18A	48 V	0 A	1.0 A	±2%	(N/A)				(N/A)				48 W
PM42-23A	+5 V	0.5 A	6.0 A	±3%	+12 V	0.1 A	2.0 A	±5%	(N/A)				40 W
PM42-25A	+5 V	0.5 A	6.0 A	±3%	+24 V	0.1 A	1.0 A	±5%	(N/A)				40 W
PM42-31A	+5 V	0.5 A	6.0 A	±3%	+12 V	0.1 A	2.0 A	±5%	-12 V	0 A	0.3 A	±4%	40 W
PM42-31-3A	+3.3 V	0.8 A	6.0 A	±3%	+5 V	0.1 A	2.0 A	±5%	+12 V	0 A	0.3 A	±4%	30 W
PM42-31-5A	+5 V	0.5 A	6.0 A	±3%	+3.3 V	0 A	1.5 A	±5%	+12 V	0 A	0.3 A	±4%	30 W
PM42-32A	+5 V	0.5 A	6.0 A	±3%	+15 V	0.1 A	1.5 A	±5%	-15 V	0 A	0.3 A	±4%	40 W
PM42-39A	+5 V	0.5 A	6.0 A	±3%	+24 V	0.1 A	1.0 A	±5%	-12 V	0 A	0.3 A	±4%	40 W

NOTES:
1. Safety approvals are for PCB form only. To order unit with cover fitted, change suffix “A” to “C”.
2. The output voltages of a multiple output model may go outside of the stated tolerance when an output load current is out of stated limits. All models may be operated at no-load without damage.
3. Ripple and noise is maximum peak to peak voltage value measured at output within 20 MHz bandwidth, at rated line voltage and output load ranges, and with a 10 μF tantalum capacitor in parallel with a 0.1 μF ceramic capacitor across the output.

MECHANICAL SPECIFICATIONS



OUTPUT POWER DERATING CURVE



NOTES:
1. Dimensions shown in inches [mm]
2. Tolerance 0.02 [0.5] maximum
3. Connector CN1: Molex header 09-65-2038 or equivalent, mating with Molex housing 09-50-1031 or equivalent.
4. Connector CN2: Molex header 09-65-2068 or equivalent, mating with Molex housing 09-50-1061 or equivalent.
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
PM42-10A PM42-13A PM42-18A PM42-12A PM42-14A	+V1		V1 Return		N.C.	
PM42-23A PM42-25A	V1		Common Return		N.C	V2
PM42-31A PM42-32A PM42-39A PM42-31-3A PM42-31-5A	V1		Common Return		V3	V2