

DESCRIPTION

The TMC60 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 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 EN 60601-1 and EN 60950-1 safety standards improves design-in time and reduces end equipment compliance costs.

FEATURES

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

INPUT SPECIFICATIONS

Input voltage: 90-264 VAC
Input frequency: 47-63 Hz
Input current: 1.3 A (rms) for 100 VAC
0.7 A (rms) for 240 VAC
Earth leakage current: 150 μ A max. @ 264 VAC, 60 Hz

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 $\pm 0.04\%$ / $^{\circ}$ 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

ENVIRONMENTAL SPECIFICATIONS

Operating temperature: -10 $^{\circ}$ C to +70 $^{\circ}$ C
Storage temperature: -40 $^{\circ}$ C to +85 $^{\circ}$ C
Relative humidity: 5% to 95% non-condensing
Derating: Derate from 100% at +50 $^{\circ}$ C linearly to 50% at +70 $^{\circ}$ C

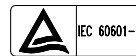
TMC60 SERIES



SAFETY STANDARD APPROVALS



UL 60601-1
CSA C22.2 No. 601.1



TÜV EN60601-1

GENERAL SPECIFICATIONS

Switching frequency: 62 \pm 5 KHz
Efficiency: 80-88% typical except TMC60-T31-3 and TMC60-T31-5 at 75% typical
Hold-up time: 12 msec minimum at 110 VAC
Line regulation: $\pm 0.5\%$ maximum at full load
Inrush current: 30 A @ 115 VAC, or 60 A @ 230 VAC, at 25 $^{\circ}$ C cold start
Withstand voltage: 4000 VAC from input to output
1500 VAC from input to ground
500 VAC from output to ground
MTBF: 400,000 hours at full load at 25 $^{\circ}$ 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, ± 8 KV air and ± 6 KV contact
EN61000-4-3: Radiated immunity, 3 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, 3 Vrms
EN61000-4-8: Magnetic field immunity, 3 A/m
EN61000-4-11: Voltage dips,
30% reduction for 500 ms
60% reduction for 100 ms
>95% reduction for 10 ms

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UNIVERSAL INPUT

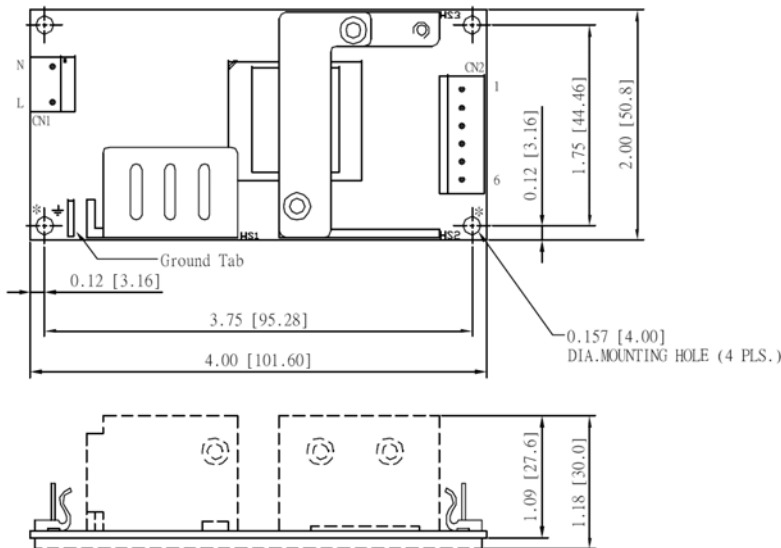
TMC60 MEDICAL & ITE SERIES

OUTPUT VOLTAGE/CURRENT RATING CHART

P/N	Output #1				Output #2				Output #3				Maximum Output(3) Power
	Vnom	Min.-Max.Current at convection	Min.-Max.Current at forced air (2)	Tol.	Vnom	Imin	Imax	Tol.	Vnom	Imin	Imax	Tol.	
TMC60-S05	5 V	0-11 A	(N/A)	2%		(N/A)				(N/A)			55 W
TMC60-S12	12 V	0-5 A	(N/A)	2%		(N/A)				(N/A)			60 W
TMC60-S15	15 V	0-4.3 A	(N/A)	2%		(N/A)				(N/A)			64 W
TMC60-S24	24 V	0-2.7 A	(N/A)	2%		(N/A)				(N/A)			64 W
TMC60-S48	48 V	0-1.35 A	(N/A)	2%		(N/A)				(N/A)			64 W
TMC60-D23	+5 V	0.5-6 A	0.5-8 A	3%	+12 V	0.1 A	3 A	5%		(N/A)			55 W
TMC60-D25	+5 V	0.5-6 A	0.5-8 A	3%	+24 V	0.1 A	1.5 A	5%		(N/A)			55 W
TMC60-T31	+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%	55 W
TMC60-T31-3	+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%	37.5 W
TMC60-T31-5	+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)
TMC60-T32	+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%	55 W
TMC60-T39	+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%	55 W

- NOTES: 1. Safety approvals are for PCB form only. To order unit with cover fitted, add suffix "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



NOTES:

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

PIN CHART

MODEL	PIN		1	2	3	4	5	6
	TMC60-S05 TMC60-S24	TMC60-S12 TMC60-S48	TMC60-S15	+V1	+V1	RTN	RTN	N.C.
TMC60-D23	TMC60-D25		+V1	+V1	RTN	RTN	N.C.	+V2
TMC60-T31	TMC60-T32 TMC60-T39		+V1	+V1	RTN	RTN	-V3	+V2
TMC60-T31-3	TMC60-T31-5		+V1	+V1	RTN	RTN	+V3	+V2

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