

**DESCRIPTION**

The TMC40 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 EN60950-1 safety standards improves design-in time and reduces end equipment compliance costs.

**FEATURES**

- Medical and ITE approvals
- Compact size 2" x4" x1.18"
- 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: 0.9 A (rms) for 100 VAC  
 0.5 A (rms) for 240 VAC  
 Earth Leakage current: 150  $\mu$ A max. @ 264 VAC, 63 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  $\mu$ 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% to +50 $^{\circ}$ C linearly to  
 50% at +70 $^{\circ}$ C

**TMC40 SERIES****SAFETY STANDARD APPROVALS**

**UL 60601-1**  
**CSA C22.2 No. 601.1**



**TÜV EN60601-1**

**GENERAL SPECIFICATIONS**

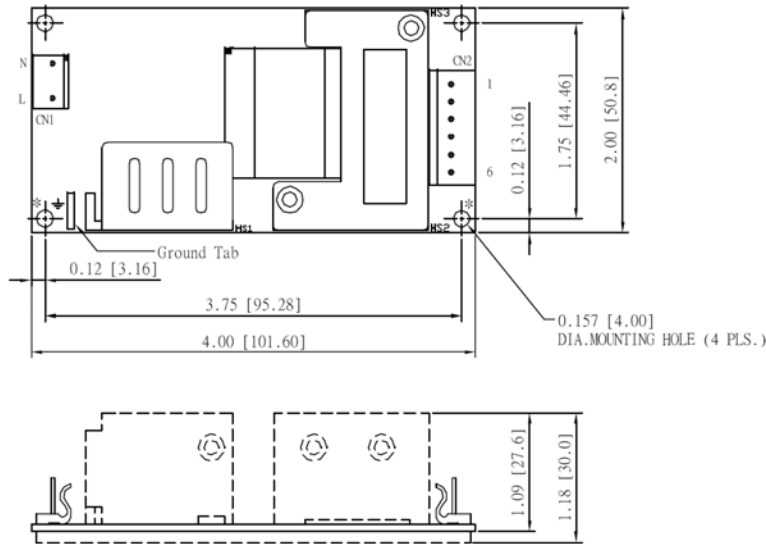
Switching frequency: 62 $\pm$ 5 KHz  
 Efficiency: 80-88% typical except TMC40-T31-3 and  
 TMC40-T31-5 at 75% typical  
 Hold-up time: 12 msec minimum at 110 VAC  
 Line regulation:  $\pm 0.5\%$  maximum at full load  
 Inrush current: 25 A @ 115 VAC, or 50 A @ 230 VAC,  
 at 25  $^{\circ}$ C cold start  
 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,  $\pm 8$  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, 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

## OUTPUT VOLTAGE/CURRENT RATING CHART

P/N	Output #1				Output #2				Output #3				Maximum Output Power
	Vnom.	Imin.	Imax.	Tol.	Vnom.	Imin.	Imax.	Tol.	Vnom.	Imin.	Imax.	Tol.	
TMC40-S05	5 V	0 A	8.0 A	2%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	40 W
TMC40-S12	12 V	0 A	3.5 A	2%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	42 W
TMC40-S15	15 V	0 A	3.0 A	2%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	45 W
TMC40-S24	24 V	0 A	2.0 A	2%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	48 W
TMC40-S48	48 V	0 A	1.0 A	2%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	48 W
TMC40-D23	+5 V	0.5 A	6 A	3%	+12 V	0.1 A	2 A	5%	(N/A)	(N/A)	(N/A)	(N/A)	40 W
TMC40-D25	+5 V	0.5 A	6 A	3%	+24 V	0.1 A	1 A	5%	(N/A)	(N/A)	(N/A)	(N/A)	40 W
TMC40-T31	+5 V	0.5 A	6 A	3%	+12 V	0.1 A	2 A	5%	-12 V	0 A	0.3 A	4%	40 W
TMC40-T31-3	+3.3 V	0.8 A	6 A	3%	+5 V	0.1 A	2 A	5%	+12 V	0 A	0.3 A	4%	30 W
TMC40-T31-5	+5 V	0.5 A	6 A	3%	+3.3 V	0 A	1.5 A	5%	+12 V	0 A	0.3 A	4%	30 W
TMC40-T32	+5 V	0.5 A	6 A	3%	+15 V	0.1 A	1.5 A	5%	-15 V	0 A	0.3 A	4%	40 W
TMC40-T39	+5 V	0.5 A	6 A	3%	+24 V	0.1 A	1 A	5%	-12 V	0 A	0.3 A	4%	40 W

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

## 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
	TMC40-S05 TMC40-S24	TMC40-S12 TMC40-S48	TMC40-S15		+V1	+V1	RTN	RTN	N.C
TMC40-D23	TMC40-D25			+V1	+V1	RTN	RTN	N.C	+V2
TMC40-T31	TMC40-T32	TMC40-T39		+V1	+V1	RTN	RTN	-V3	+V2
TMC40-T31-3, TMC40-T31-5				+V1	+V1	RTN	RTN	+V3	+V2

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