TMC100 SERIES

DESCRIPTION

The TMC100 series of compact, open PCB constructed, AC-DC switching power supplies are capable of delivering 100 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.



FEATURES

- Medical and ITE approvals
- Compact size 2" × 4" × 1.26"
- Ultra high power density 10 W/cubic inch
- Full range input 90-132 VAC, or 180-264 VAC
- Low earth leakage current
- Conducted EMI class B
- RoHS compliant

SAFETY STANDARD APPROVALS

UL 60601-1
CSA C22.2 No. 601.1

TÜV EN60601-1

INPUT SPECIFICATIONS

Input voltage:	90-132 VAC or 180-264 VAC
Input frequency:	47-63 Hz
Input current:	1.9A (rms) for 100-120 VAC
	1.0A (rms) for 200-240 VAC
Earth leakage current:	150 µA max. @ 264 VAC, 63 Hz

OUTPUT SPECIFICATIONS

Output voltage/current:	See rating chart
Total output power:	100 watts maximum
Ripple and noise:	250 mV peak to peak on 5.0 V model , 1% peak to peak on other models.
Overvoltage protection:	Provided on output; set at 110-140% of its nominal output voltage
Overcurrent protection:	All outputs protected to short circuit conditions
Temperature coefficient:	All outputs ±0.04% /°C maximum
Transient response:	Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 µs after a 25% step load change

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
Cooling:	Convection cooling

GENERAL SPECIFICATIONS

Switching frequency:	100 KHz
Efficiency:	87-90% @ 230 VAC full load.
Hold-up time:	12 msec minimum at 110 VAC.
Line regulation:	±0.2% maximum at full load
Inrush current:	40 A @ 115 VAC or 80 A @ 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:	270,000 hours at full load at 25°C ambient temperature, calculated per MIL-HDBK-217F
EMC Performance	
EN55011 / EN55022:	Class B conducted, class A radiated
FCC:	Class B conducted, class A radiated
VCC:	Class B conducted, class A radiated
EN61000-3-2:	Harmonic distortion, class A
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 5 sec. Performance criteria A, B, A.

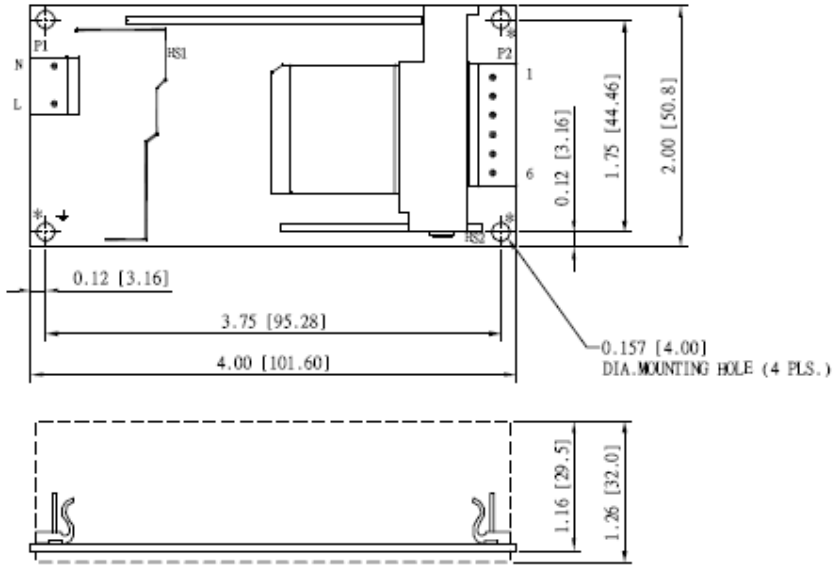
Tumbler Technologies + TRUMPower
3350 Scott Blvd., Bldg. 13, Santa Clara, California 95054, USA
Phone: 408-988-6616 ● Fax: 408-988-6622 ● email: sales@trumpower.com ● Website: www.TRUMPower.com

OUTPUT VOLTAGE/CURRENT RATING CHART

P/N	Vnom.	Output Imin.	Output Imax.	Tol.	Maximum Output Power
TMC100-S05	5 V	0 A	20 A	2%	100 W
TMC100-S12	12 V	0 A	8.34 A	2%	100 W
TMC100-S15	15 V	0 A	6.7 A	2%	100 W
TMC100-S18	18 V	0 A	5.56 A	2%	100 W
TMC100-S24	24 V	0 A	4.2 A	2%	100 W
TMC100-S28	28 V	0 A	3.58 A	2%	100 W
TMC100-S36	36 V	0 A	2.78 A	2%	100 W
TMC100-S48	48 V	0 A	2.1 A	2%	100 W

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

MECHANICAL SPECIFICATIONS



NOTES:

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. To ensure compliance with level B emissions, connect the three “∗ “ marked mounting holes with metallic standoffs to chassis.
6. Weight: 190 grams (0.44 lbs.) approx.

.

PIN CHART

MODEL \ PIN	1	2	3	4	5	6
TMC100-S05 TMC100-S12 TMC100-S15 TMC100-S18 TMC100-S24 TMC100-S28 TMC100-S36 TMC100-S48	RETURN	RETURN	RETURN	OUTPUT	OUTPUT	OUTPUT