

- Ultra Compact 10 Watt PCB Power module in 1" x 1.5" package
- Certified to EN 60335-1 and UL 62368-1 for household and industrial appliance
- Reinforced I/O isolation 4000 VAC
- Operating temperature range -25°C to +70°C
- Allows 130% peak current up to 30 s
- Ready to meet ErP directive, < 0.15 W no load power consumption
- EMI meets EN 55032 class B and EN 55014-1
- Protection class II prepared
- 3-year product warranty



IEC/EN 62368-1
IEC/EN 60335-1

The TMPS 10 series comprises ultra compact AC/DC power supply modules in a lightweight fully encapsulated plastic casing for PCB mount. Beside the latest safety approvals for industrial and IT solutions (IEC/EN/UL 62368-1), they are also certified to IEC/EN 60335-1 for household appliance. These 10 Watt modules are the ideal solution for low power or segregated circuits when space is critical or for an efficient powering of a standby mode when compliance to ErP directive is required. A peak current of 130% facilitates the activation of main circuits.

Models

Order Code	Output Power (max.)	Output Voltage	Output Current		Efficiency (typ.)
			max.	peak ¹⁾	
TMPS 10-103	8.6 W	3.3 VDC	2600 mA	3380 mA	77 %
TMPS 10-105	10 W	5 VDC	2000 mA	2600 mA	80 %
TMPS 10-109		9 VDC	1100 mA	1440 mA	83 %
TMPS 10-112		12 VDC	830 mA	1080 mA	84 %
TMPS 10-115		15 VDC	660 mA	860 mA	84 %
TMPS 10-124		24 VDC	410 mA	530 mA	86 %
TMPS 10-148		48 VDC	210 mA	270 mA	84 %

¹⁾ < 30 s with maximum duty cycle of 10%, average output power must not exceed 10 W

Input Specifications

Input voltage	– AC Input – DC Input	85 – 264 VAC 120 – 370 VDC
Input frequency		47 – 63 Hz (designed to meet: 47 – 440 Hz)
Leakage current		0.25 mA max.
Inrush current	– 115 VAC Input – 230 VAC Input	20 A max. 40 A max.
No-load power consumption		0.15 W max.
External input fuse (required)		1.6 A (slow blow type)

Output Specifications

Voltage accuracy		±1 % typ. / ±2 % max.
Regulation	– Input variation (Vin min. to Vin max.) – Load variation (0 to 100 %)	0.5 % max. 1.0 % max.
Minimum load		not required
Hold-up time	– 115 VAC / 60 Hz Input – 230 VAC / 50 Hz Input	8 ms typ. 40 ms typ.
Ripple and Noise (20 MHz bandwidth)	3.3 & 5 VDC models: other models:	60 mVp-p max. 1 % (Vp-p) of Vout max.
Current limitation (long term condition may cause damage)		at 150 % Iout typ. (foldback, auto recovery)
Short circuit protection		hiccup, auto recovery
Output overvoltage protection		125 % of Vout typ. (by Zener diode)
Capacitive load	3.3 Vout model: 5.0 Vout model: 9.0 Vout model: 12 Vout model: 15 Vout model: 24 Vout model: 48 Vout model:	4'400 µF max. 2'200 µF max. 680 µF max. 390 µF max. 240 µF max. 100 µF max. 24 µF max.

General Specifications

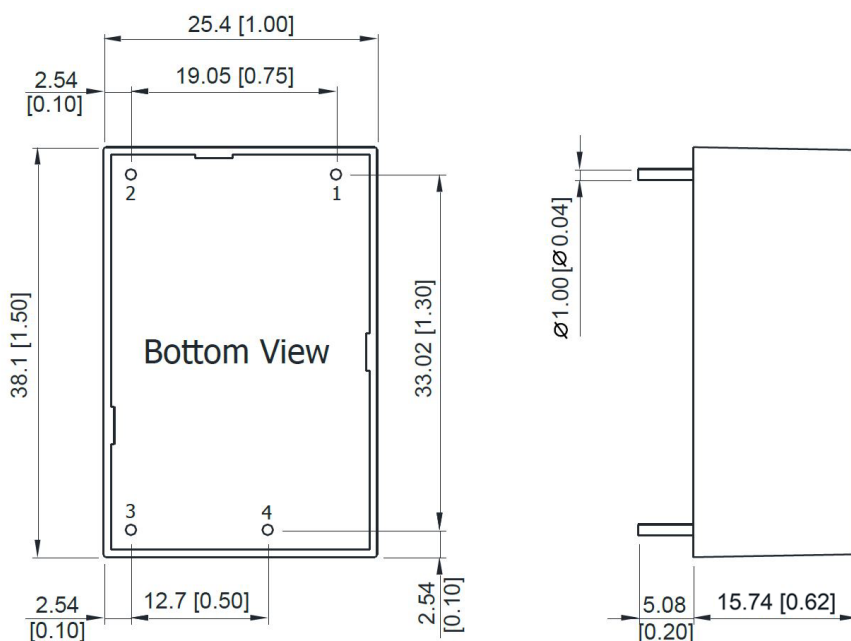
Temperature ranges	– Operating (natural convection: 20 LFM, 0.1 m/s) – Case temperature – Storage temperature	–25 °C to +70 °C max. +95 °C max. –40 °C to +85 °C max.
Power derating		2.5 %/K above 50 °C
Temperature coefficient		0.02 %/K max.
Altitude during operation		2000 m max.
Switching frequency		30 - 65 kHz typ. (pulse width modulation)
Humidity (non condensing)		95 % rel. H max.
Isolation voltage (60 s)	– Input/Output	4000 VAC
Isolation resistance	– At 500 VDC	1 GOhm min.
MTBF (MIL-HDBK-217F, at 25 °C ground benign)		450'000 h
Case material		Plastic resin (UL94V-0 rated)
Pin material		Tinned copper

All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

General Specifications (continued)

Protection class	class II acc. IEC/EN 60536
Safety standards	IEC/EN/UL 60950-1 IEC/EN/UL 62368-1 IEC/EN 60335-1 – Certification documents www.tracopower.com/overview/tmps10
EMC emission	– Conducted & Radiated input suppression EN 55014-1, EN 55032, FCC part 15, class B
EMC immunity	EN 55014-2, EN 55024 – Electrostatic discharge (ESD) EN 61000-4-2, air ± 8 kV, contact ± 6 kV, perf. criteria A – Radiated immunity EN 61000-4-3, 10 V/m, perf. criteria A – Fast transient / burst immunity EN 61000-4-4, ± 2 kV, perf. criteria A – Surge immunity EN 61000-4-5, ± 1 kV, perf. criteria A – Conducted immunity EN 61000-4-6, 10 Vrms, perf. criteria A – Magnetic field immunity EN 61000-4-8, 30 A/m, perf. criteria A – Voltage dips EN 61000-4-11, 30% 10 ms, perf. criteria A – Interruptions EN 61000-4-11, >95% 5 s, perf. criteria B
Environmental compliance	– Reach – RoHS www.tracopower.com/info/reach-declaration.pdf RoHS directive 2011/65/EU

Outline Dimensions



Pinout	
Pin	Function
1	AC IN (N)
2	AC IN (L)
3	–Vout
4	+Vout

Weight: 29 g (1.02 oz)

Dimensions in mm [inch]
Tolerances: ± 0.5 [± 0.02]
Pin diameter $\varnothing$: 1.0 ± 0.1 [0.04 ± 0.004]