

- ◆ PCB Power module in 1" x 1" package
- ◆ Certified to EN60335-1 for household appliance.
- ◆ No load input power <300 mW to comply with ErP directive
- ◆ Operating temperature range -25°C to +70°C
- ◆ EMI meets EN 55022 class B and EN 55014-1
- ◆ Protection class II prepared
- ◆ 3-year product warranty



The TMPS-05 series comprises ultra compact AC/DC power supply modules in lightweight fully encapsulated plastic casing for PCB mount. Beside the safety approvals for industrial and IT solutions, they are also certified to EN 60335 for household appliance. These 5 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
			max.	peak <sup>1)</sup>	
TMPS 05-103	5 W	3.3 VDC	1515 mA	1970 mA	74 %
TMPS 05-105		5.0 VDC	1000 mA	1300 mA	80 %
TMPS 05-109		9.0 VDC	555 mA	721 mA	82 %
TMPS 05-112		12 VDC	416 mA	540 mA	82 %
TMPS 05-115		15 VDC	333 mA	433 mA	83 %
TMPS 05-124		24 VDC	208 mA	270 mA	83 %
TMPS 05-148		48 VDC	104 mA	135 mA	85 %

<sup>1)</sup> < 30 s with maximum duty cycle of 10%, average output power must not exceed 5 W

### Input Specifications

Input voltage ranges	– AC input – DC Input	85 – 264 VAC 120 – 370 VDC
Input frequency		47 – 63 Hz
Input current at full load (115 VAC / 230 VAC nominal input)		110 mA typ.
No-Load power consumption		300 mW max.

### Output Specifications

Voltage set accuracy		±2 % max.
Minimum load		no minimum load required
Ripple and noise (20 MHz bandwidth)	3.3 and 5 VDC models: other models:	60 mVp-p max. 1% mVp-p max. of nominal Vout
Regulation	– Input variation – Load variation	1 % max. 1 % max.
Hold-up time		8 ms typ. (at 115 VAC and full load) 40 ms typ. (at 230 VAC and full load)
Over voltage protection		max. 190 % of nominal Vout
Current limitation (operation under over-load conditions may cause damage)		at 150 % typ. (autorecovery)
Short circuit protection		hiccup, automatic recovery
Max. capacitive load	3.3 VDC model: 5.0 VDC model: 9.0 VDC model: 12 VDC model: 15 VDC model: 24 VDC model: 48 VDC model:	2200 µF 1000 µF 300 µF 160 µF 100 µF 43 µF 10 µF

### General Specifications

Temperature ranges	– Operating (20 LFM convection cooling) – Power derating above +50°C – Storage (non operating)	–25°C to +70°C 2.5 %/K –40°C to +85°C
Temperature coefficient		0.05 %/°C
Humidity (non condensing)		95 % rel max.
Switching frequency (pulse width modulation PWM)		65 kHz typ.
Isolation voltage (60 sec.) – Input/Output		3'000 VAC
Isolation resistance (500 VDC)		>100 MOhm
Reliability /calculated MTBF (MIL-HDBK-217F, at +25°C, ground benign)		628'000 h
Electromagnetic compatibility (EMC), emissions	– Conducted and radiated input suppression	EN 55011/22, class B, FCC part 15, level B EN 55014-1,
Electromagnetic compatibility (EMC), immunity	– Electrostatic discharge ESD – RF field immunity – Electrical fast transients/burst immunity – Surge – Conducted RF – Magnetic field immunity – Voltage dip and interruptions	EN55014-2; EN55024 IEC / EN 61000-4-2, 8 kV / 4kV criteria A IEC / EN 61000-4-3, 10 V/m criteria A IEC / EN 61000-4-4, 2 kV DC criteria A IEC / EN 61000-4-5, 1 kV/0.5kV criteria A IEC / EN 61000-4-6, 10 Vrms criteria A IEC / EN 61000-4-8, 30 A/m criteria A IEC / EN 61000-4-11 30%, 10ms perf. criteria A 95%, 5000ms perf. criteria B

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

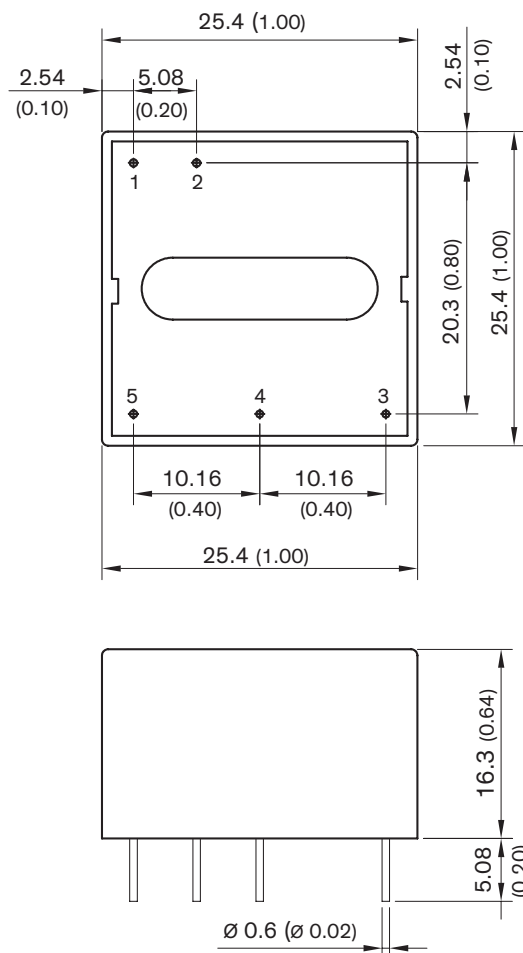
### General Specifications (continued)

Protection class II		according IEC/EN 60536
Safety standards		IEC/EN 60950-1, UL 60950-1 EN 60335-1
Safety approvals	– certification documents (pending)	<a href="http://www.tracopower.com/overview/tmps05">www.tracopower.com/overview/tmps05</a>
Environmental compliance	– Reach (pending) – RoHS	<a href="http://www.tracopower.com/products/reach-declaration.pdf">www.tracopower.com/products/reach-declaration.pdf</a> RoHS directive 2011/65/EU

### Physical Specifications

Casing material	plastic resin + fiberglass (UL 94V-0 rated)
Pin	tinned copper
Weight	19.7 g (0.69 oz)

### Outline Dimensions



Pin-Out	
Pin	
1	AC(N)
2	AC(L)
3	NC*
4	-Vout
5	+Vout

\*internally not connected but keep it isolated from primary circuit

Dimensions in [mm], ( ) = Inches  
Tolerances = 0.5mm (0.01)  
Pin diameter  $\varnothing$  0.6 mm (0.02  $\pm$  0.004)

Specifications can be changed without notice! Make sure you are using the latest documentation, downloadable at [www.tracopower.com](http://www.tracopower.com)