

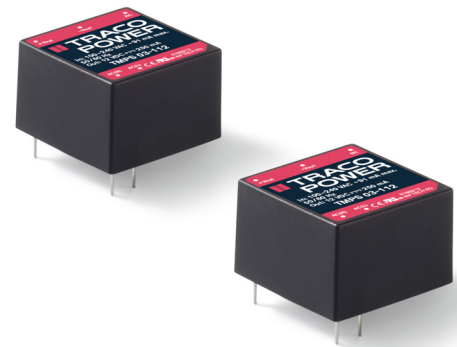


**EN:** This Datasheet/Document is presented by the manufacturer.

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### Features

- ◆ PCB Power module in 1" x 1" package
- ◆ No load input power <150mW, to comply with ErP directive
- ◆ Operating temperature range -25°C to +70°C
- ◆ Certified to EN60335-1 for household appliance
- ◆ EMI meets EN 55022, class B
- ◆ Protection class II prepared
- ◆ 3-year product warranty



The TMPS-03 series are ultra compact AC/DC power supplies in a fully encapsulated plastic casing for PCB mount. Their safety approvals and extended operating temp. range from -25°C to +70°C qualify them for worldwide markets. They are certified to EN 60335-1 for household appliance and offer an interesting solution for space critical applications in commercial, and industrial electronic equipment and if compliance to ErP directive is required.

### Models

| Order code  | Output power max. | Output Voltage | Output Current |                    | Efficiency |
|-------------|-------------------|----------------|----------------|--------------------|------------|
|             |                   |                | max.           | peak <sup>1)</sup> |            |
| TMPS 03-103 | 3 W               | 3.3 VDC        | 900 mA         | 1170 mA            | 70 %       |
| TMPS 03-105 |                   | 5.0 VDC        | 600 mA         | 780 mA             | 72 %       |
| TMPS 03-109 |                   | 9.0 VDC        | 333 mA         | 430 mA             | 77 %       |
| TMPS 03-112 |                   | 12 VDC         | 250 mA         | 320 mA             | 78 %       |
| TMPS 03-115 |                   | 15 VDC         | 200 mA         | 260 mA             | 78 %       |
| TMPS 03-124 |                   | 24 VDC         | 125 mA         | 160 mA             | 78 %       |

<sup>1)</sup> < 30s with maximum duty cycle of 10%, average output power must not exceed 3W

### Input Specifications

|                                                               |                          |                               |
|---------------------------------------------------------------|--------------------------|-------------------------------|
| Input voltage ranges                                          | – AC input<br>– DC Input | 85 – 264 VAC<br>120 – 370 VDC |
| Input frequency                                               |                          | 47 – 63 Hz                    |
| Input current at full load (115 VAC or 230 VAC nominal input) |                          | 60 mA typ.                    |
| Inrush current (115 VAC / 230 VAC nominal input)              |                          | 15 A max. / 25 A max.         |
| No-Load power consumption                                     |                          | 150 mW max.                   |

### Output Specifications

|                                                                               |                                                                                                       |                                                           |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| Voltage set accuracy                                                          |                                                                                                       | ±2 % max.                                                 |
| Minimum load                                                                  |                                                                                                       | no minimum load required                                  |
| Ripple and noise (20 MHz bandwidth)                                           |                                                                                                       | 70 mVp-p max.                                             |
| Regulation – Input variation                                                  |                                                                                                       | 1 % max.                                                  |
| Regulation – Load variation                                                   |                                                                                                       | 1 % max.                                                  |
| Hold-up time                                                                  |                                                                                                       | 8 ms typ. (at 115 VAC and full load)                      |
| Current limitation<br>(Operation under over-load conditions may cause damage) |                                                                                                       | at 150 % typ. (auto recovery)                             |
| Short circuit protection                                                      |                                                                                                       | hiccup, automatic recovery                                |
| Max. capacitive load                                                          | 3.3 VDC model:<br>5.0 VDC model:<br>9.0 VDC model:<br>12 VDC model:<br>15 VDC model:<br>24 VDC model: | 1200 µF<br>820 µF<br>470 µF<br>330 µF<br>270 µF<br>180 µF |

### General Specifications

|                                                                       |                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Temperature ranges                                                    | – Operating (convection cooling)<br>– Power derating above +60°C<br>– Storage (non operating)                                                                                                           | –25°C to +70°C<br>5.0 %/K<br>–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                                                     | – Input/Output                                                                                                                                                                                          | 4'242 VDC                                                                                                                                                                                                                                                                                                                                                                      |
| Isolation resistance (500 VDC)                                        |                                                                                                                                                                                                         | >100 MOhm                                                                                                                                                                                                                                                                                                                                                                      |
| Reliability /calculated MTBF (MIL-HDBK-217F, at +25°C, ground benign) |                                                                                                                                                                                                         | 1.2 mio h                                                                                                                                                                                                                                                                                                                                                                      |
| Electromagnetic compatibility (EMC), emissions                        | – Conducted input RI suppression<br>– Radiated input suppression                                                                                                                                        | EN 55022, class B, FCC part 15, level B<br>EN 55014-1                                                                                                                                                                                                                                                                                                                          |
| Electromagnetic compatibility (EMC), Immunity                         | – Electrostatic discharge ESD<br>– RF field immunity<br>– Electrical fast transients/burst immunity<br>– Surge<br>– Conducted RF<br>– Magnetic field immunity<br>– Mains voltage dips and interruptions | EN 55014-2, EN 61204-3, EN 55024<br>EN 61000-4-2, air 8 kV / 4 kV, criteria A<br>EN 61000-4-3, 10 V/m, criteria A<br>EN 61000-4-4, 2 kV, criteria A<br>EN 61000-4-5, 1 kV, criteria A<br>EN 61000-4-6, 10 Vrms, criteria A<br>EN 61000-4-8, 30 A/m, criteria A<br>EN 61000-4-11, >95 % 0.5 periods, criteria A<br>60 %, 10 periods, criteria A<br>30 %, 25 periods, criteria A |

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

## General Specifications (continued)

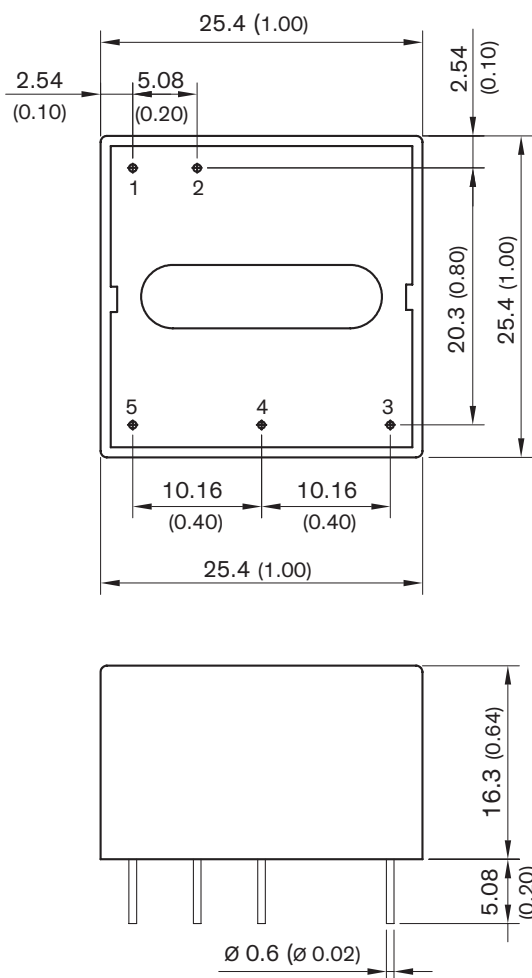
|                           |                                                                                                                                                                            |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protection class II       | prepared according IEC/EN 60536                                                                                                                                            |
| Safety standards          | UL 60950-1 and CSA C22.2 No. 60950-1-07<br>IEC/EN 60950-1<br>EN 60335-1<br><a href="http://www.tracopower.com/overview/tmps03">www.tracopower.com/overview/tmps03</a>      |
| – Certification documents |                                                                                                                                                                            |
| Environmental compliance  | – Reach<br>– RoHS<br><a href="http://www.tracopower.com/products/reach-declaration.pdf">www.tracopower.com/products/reach-declaration.pdf</a><br>RoHS directive 2011/65/EU |

## Physical Specifications

|                 |                                               |
|-----------------|-----------------------------------------------|
| Casing material | plastic resin + fiberglass (UL 94V-0 rated)   |
| Pin             | copper alloy with gold plated nickel subplate |
| Weight          | 17.4 g (0.61 oz)                              |

## Outline Dimensions

TMPS 03:



| Pinout |       |
|--------|-------|
| Pin    |       |
| 1      | AC(N) |
| 2      | AC(L) |
| 3      | NC    |
| 4      | -Vout |
| 5      | +Vout |

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)