

### Features

- ◆ Ultraminiature AC/DC Switching Power Supply Modules
- ◆ Fully encapsulated Plastic Package
- ◆ Universal Input 85-264 VAC, 50/60 Hz
- ◆ High Efficiency
- ◆ Low Ripple and Noise
- ◆ Overload Protection
- ◆ EMI meets EN 55022, Class B and FCC, Level B
- ◆ 3 Package Styles available:
  - for PCB Mounting with Solder Pins
  - for Chassis Mounting with FASTON-Tabs
  - for Chassis Mounting with Screw Terminals
- ◆ 3 Year Product Warranty



The TMS series switching power supplies offers high power density in a low profile package. This makes these modules the best choice for all space critical applications. A further feature is the easy installation provided by flexible connection systems (solderpins, terminalblock, FASTON-tabs).

EMC specifications and safety standards compliance with international requirement qualify the product for worldwide use. SMD-construction and industrial quality grade components guarantee a high reliability of the MicroSwitcher power modules.

### Models

Ordercode			Output Power max.	Output 1 Inom	Output 2 Inom
PCB-mounting with solder pins	Chassis mounting with FASTON-tabs	Chassis mounting with screw terminals			
TMS 06105 TMS 06112 TMS 06115 TMS 06124 TMS 06212 TMS 06215			6 Watt	5 VDC / 1200 mA 12 VDC / 500 mA 15 VDC / 400 mA 24 VDC / 250 mA +12 VDC / 250 mA +15 VDC / 200 mA	-12 VDC / 250 mA -15 VDC / 200 mA
TMS 10105 TMS 10112 TMS 10115 TMS 10124 TMS 10212 TMS 10215	TMS 10105F TMS 10112F TMS 10115F TMS 10124F TMS 10212F TMS 10215F		10 Watt	5 VDC / 2000 mA 12 VDC / 900 mA 15 VDC / 700 mA 24 VDC / 450 mA +12 VDC / 450 mA +15 VDC / 350 mA	-12 VDC / 450 mA -15 VDC / 350 mA
TMS 15105 TMS 15112 TMS 15115 TMS 15124 TMS 15212 TMS 15215	TMS 15105F TMS 15112F TMS 15115F TMS 15124F TMS 15212F TMS 15215F	TMS 15105C TMS 15112C TMS 15115C TMS 15124C TMS 15212C TMS 15215C	15 Watt	5 VDC / 3000 mA 12 VDC / 1300 mA 15 VDC / 1000 mA 24 VDC / 650 mA +12 VDC / 650 mA +15 VDC / 500 mA	-12 VDC / 650 mA -15 VDC / 500 mA
TMS 25105 TMS 25112 TMS 25115 TMS 25124 TMS 25212 TMS 25215	TMS 25105F TMS 25112F TMS 25115F TMS 25124F TMS 25212F TMS 25215F	TMS 25105C TMS 25112C TMS 25115C TMS 25124C TMS 25212C TMS 25215C	25 Watt*	5 VDC / 4600 mA 12 VDC / 2000 mA 15 VDC / 1600 mA 24 VDC / 1000 mA +12 VDC / 1000 mA +15 VDC / 800 mA	-12 VDC / 1000 mA 15 VDC / 800 mA

\* 10 % Power reduction at 115 VAC operation

### Input Specifications

Input voltage range	85 – 264 VAC (110–375 VDC)
Input frequency	47 – 63 Hz
External input fuse (recommended)	1A slow blow

### Output Specifications

Voltage set accuracy	± 2 %	
Regulation	<ul style="list-style-type: none"> <li>– Input variation</li> <li>– Load variation (10–90%)</li> <li>– Single output models</li> <li>– Dual output models (min. load 10%)</li> </ul>	<ul style="list-style-type: none"> <li>± 0.4 % max.</li> <li>± 1 % max.</li> <li>± 2 % typ. / 5 % max. (symmetric load)</li> </ul>
Ripple and noise (20Mhz Bandwidth)	100 mV pp typ.	
Overload protection by current limit at	>130 % Inom. foldback, automatic recovery (long term short circuit operation may cause damage to the unit)	

### General Specifications

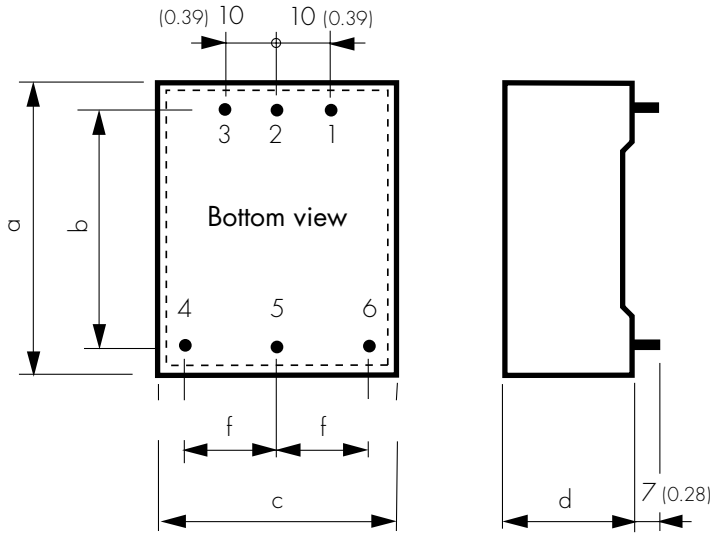
Temperature ranges	<ul style="list-style-type: none"> <li>– Operating</li> <li>– Case temperature</li> <li>– Storage (non operating)</li> </ul>	<ul style="list-style-type: none"> <li>– 25 °C...+60 °C ambient temp. max.</li> <li>+ 90 °C max.</li> <li>– 25 °C...+105 °C</li> </ul>
Derating	<ul style="list-style-type: none"> <li>– 5 Vout models</li> <li>– all other models</li> </ul>	<ul style="list-style-type: none"> <li>above + 40°C: 2.5 % / °C</li> <li>above + 50°C: 5 % / °C</li> </ul>
Temperature coefficient		0.02 % / °C
Efficiency		78 % typ.
Humidity (non condensing)		85 % rel max.
Switching frequency		100 kHz typ.
Hold-up time	<ul style="list-style-type: none"> <li>– Vin = 115 VAC</li> <li>– Vin = 230 VAC</li> </ul>	<ul style="list-style-type: none"> <li>20 ms typ.</li> <li>100 ms typ.</li> </ul>
I/O-Isolation voltage		3'000 VAC
Leakage current		0.3 mA RMS typ. / 230 VAC / 50 Hz
EMI / RFI conducted		EN 55022, level B, FCC Part 15 level B
EMC compliance	<ul style="list-style-type: none"> <li>– Electrostatic discharge ESD</li> <li>– RF field susceptibility</li> <li>– Electrical fast transients/bursts on mainsline</li> <li>– Surge</li> </ul>	<ul style="list-style-type: none"> <li>IEC / EN 61000-4-2 level 3 6 kV / 8 kV</li> <li>IEC / EN 61000-4-3 10 V / m</li> <li>IEC / EN 61000-4-4 level 3 2 kV</li> <li>IEC / EN 61000-4-5 level 3 1 kV / 2 kV</li> </ul>
Safety standards		UL 1950, EN 60950, IEC 60950
Safety approvals		UL / cUL File E141988
Case material		CELANEX (UL 94V-0 rated)
Reliability, calculated MTBF (MIL-HDBK-217E)		> 250'000 h @ 25°C

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

**Outline Dimensions mm (inches)**

PCB-mounting with solder pins

**TMS 6/10/15 W**

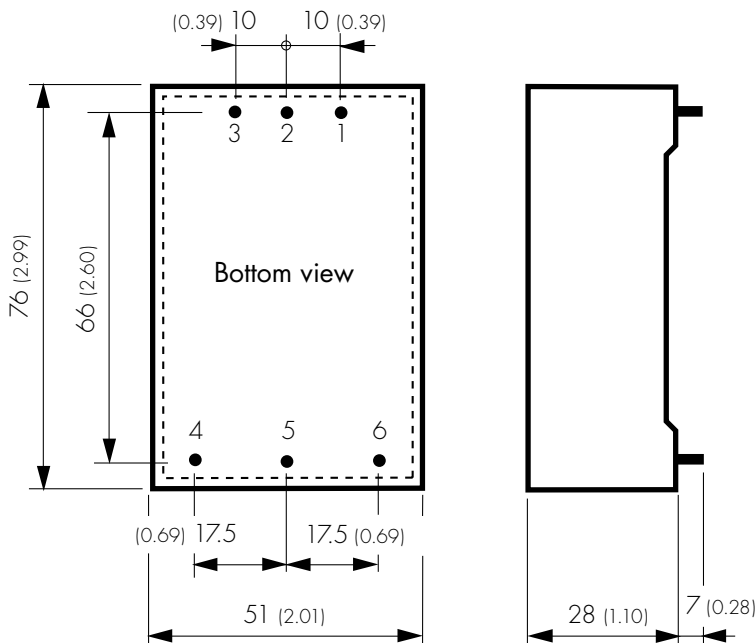


Pin diameter  $\varnothing 1.0 \pm 0.1$  (0.04  $\pm$  0.004)

Pin-Out			
	TMS 6	TMS 10	TMS 15
<b>a</b>	50 (1.97)	55 (2.17)	64 (2.52)
<b>b</b>	42 (1.65)	47 (1.85)	54 (2.13)
<b>c</b>	40 (1.57)	45 (1.77)	45 (1.77)
<b>d</b>	20 (0.79)	24 (0.94)	24 (0.94)
<b>f</b>	15.5 (0.61)	17.5 (0.69)	17.5 (0.69)

<b>Weight</b>	<b>TMS 6</b>	45 g (1.6 oz)
	<b>TMS 10</b>	75 g (2.7 oz)
	<b>TMS 15</b>	95 g (3.4 oz)
	<b>TMS 25</b>	135 g (4.8 oz)

**TMS 25 W**



Pin diameter  $\varnothing 1.0 \pm 0.1$  (0.04  $\pm$  0.004)

Pin-Out		
Pin	Single	Dual
<b>1</b>	-V out	-V out
<b>2</b>	No Pin	Common
<b>3</b>	+V out	+V out
<b>4</b>	AC in	AC in
<b>5</b>	AC in	AC in
<b>6</b>	FG	FG

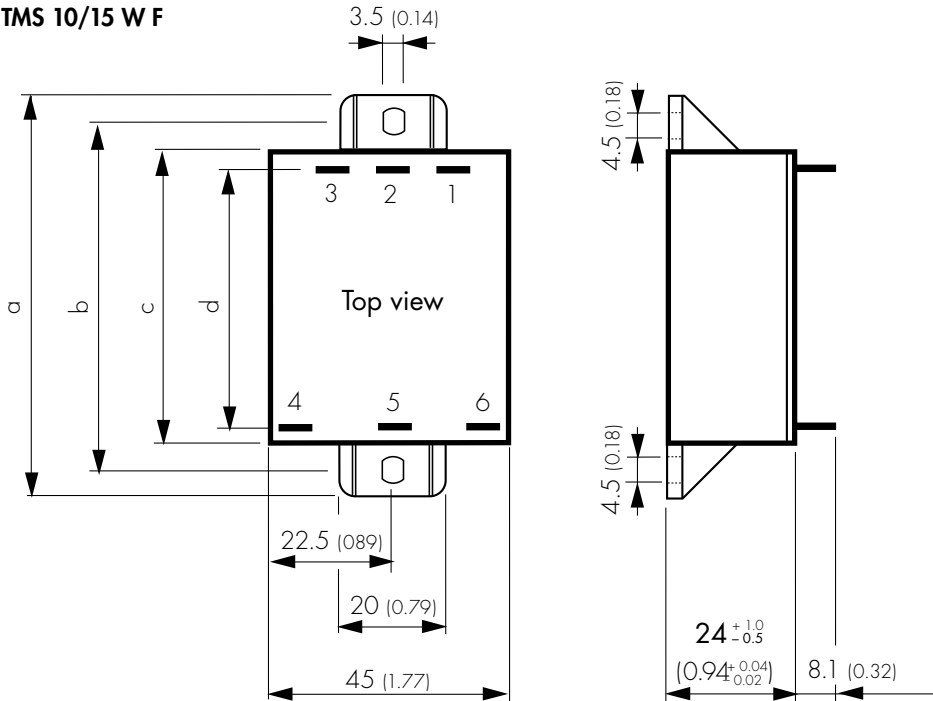
FG = field ground

Specifications can be changed without notice

**Outline Dimensions mm (inches)**

**Chassis mounting with FASTON-tabs**

**TMS 10/15 W F**



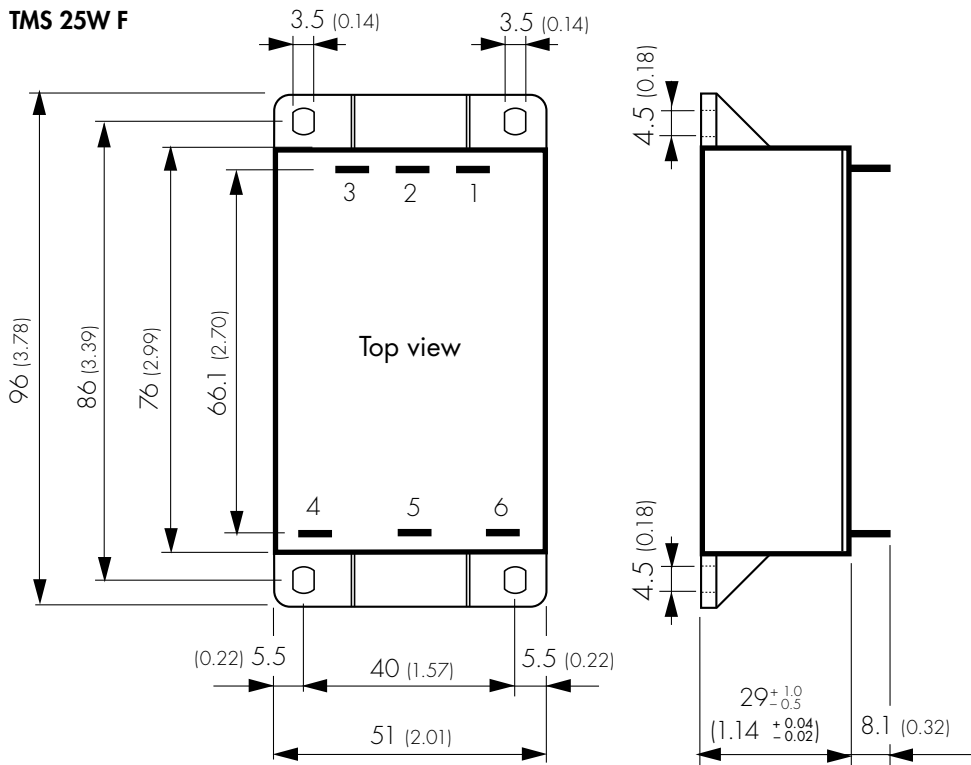
Faston no 187 / 4.75 x 0.51mm (0.187 x 0.02)

Pin-Out		
	TMS 10	TMS 15
a	75 (2.95)	84 (3.31)
b	65 (2.56)	74 (2.91)
c	55 (2.17)	64 (2.52)
d	47.6 (1.87)	55.1 (2.17)

**Weight**

<b>TMS 10</b>	80 g (2.8 oz)
<b>TMS 15</b>	100 g (3.5 oz)
<b>TMS 25</b>	150 g (5.3 oz)

**TMS 25W F**



Faston no 187 / 4.75 x 0.51mm (0.187 x 0.02)

Pin-Out		
Pin	Single	Dual
1	-V out	-V out
2	No Tab	Common
3	+V out	+V out
4	AC in	AC in
5	AC in	AC in
6	FG	FG

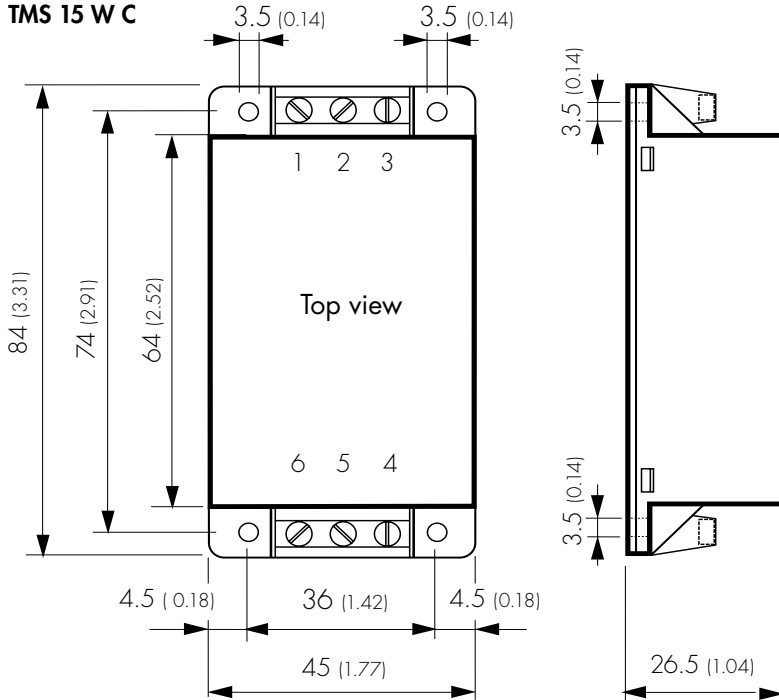
FG = field ground

Specifications can be changed without notice

**Outline Dimensions mm (inches)**

**Chassis mounting with screw terminals**

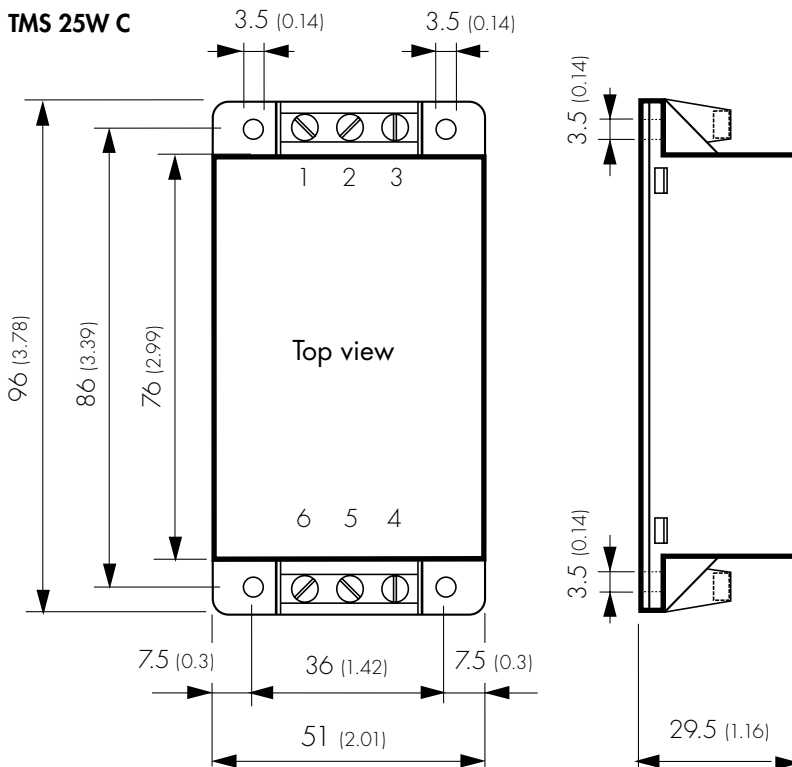
**TMS 15 W C**



Faston no 187 / 4.75 x 0.51mm (0.187 x 0.02)

**Weight** TMS 15 105 g (3.7 oz)  
TMS 25 165 g (5.8 oz)

**TMS 25W C**



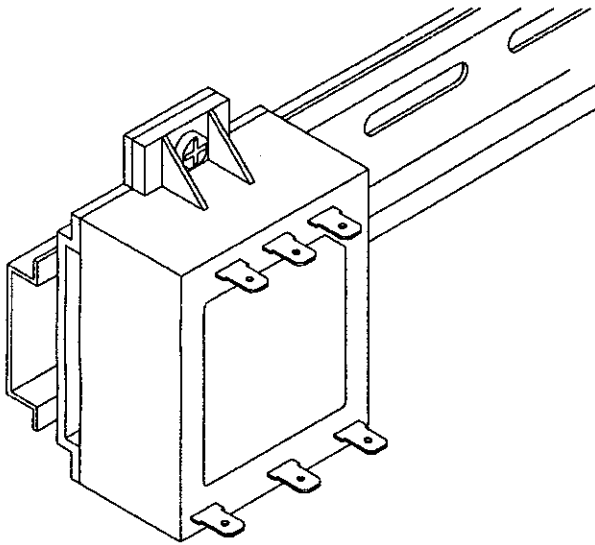
Input- and output screw terminal block: GMKDS 1.5/3-7.62 (Phoenix)

Specifications can be changed without notice

Pin-Out		
Pin	Single	Dual
1	-V out	-V out
2	No function	Common
3	+V out	+V out
4	AC in	AC in
5	AC in	AC in
6	FG	FG

FG = field ground

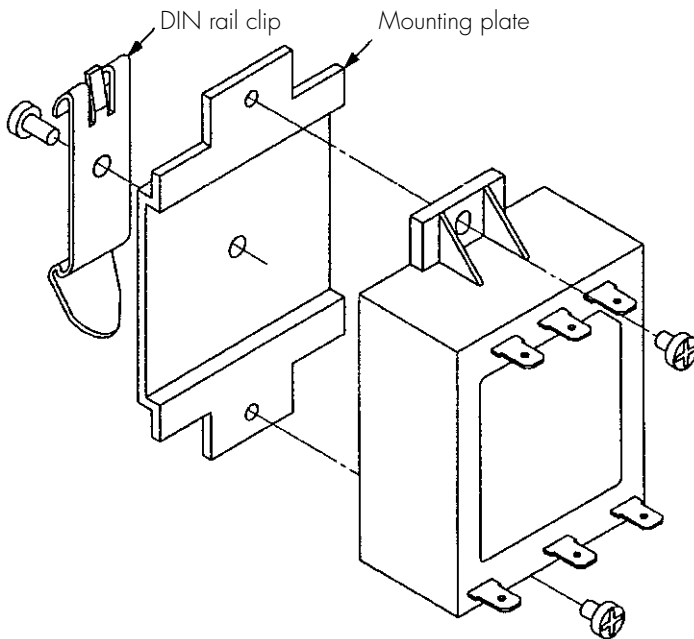
**DIN-Rail Mounting**



**Mounting kit\***

Order code	
TMS 10 Series	<b>TMS-DM10</b>
TMS 15 Series	<b>TMS-DM15</b>
TMS 25 Series	<b>TMS-DM25</b>

\*includes mounting plate, clip and screws



Specifications can be changed without notice