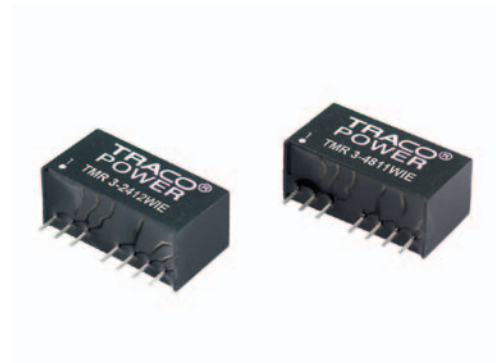


Features

- ◆ Wide 4:1 input voltage range
- ◆ Compact SIP-8 package
- ◆ Cost optimized design
- ◆ Temperature range -40°C to $+85^{\circ}\text{C}$
- ◆ I/O isolation 1600 VDC
- ◆ Remote On/Off control
- ◆ 3-year product warranty



The TMR-3WIE series is a family of isolated 3 W dc-dc converter modules with regulated output, featuring wide 4:1 input voltage ranges. The product comes in a compact SIP-8 plastic package with small footprint occupying only 2.0 cm² (0.3 square in.) of board space.

An excellent efficiency allows -40°C to $+85^{\circ}\text{C}$ operation temperature. Further features include remote On/Off control and continuous short circuit protection. The compact dimensions and cost optimized design make this converters an ideal solution for applications in communication equipment, instrumentation and industrial electronics.

Models

Order code	Input voltage range	Output voltage	Output current max.	Efficiency typ.
TMR 3-1210WIE	4.5 – 18 VDC (12 VDC nominal)	3.3 VDC	700 mA	74 %
TMR 3-1211WIE		5.0 VDC	600 mA	78 %
TMR 3-1212WIE		12 VDC	250 mA	80 %
TMR 3-1213WIE		15 VDC	200 mA	80 %
TMR 3-1221WIE		± 5.0 VDC	± 300 mA	70 %
TMR 3-1222WIE		± 12 VDC	± 125 mA	80 %
TMR 3-1223WIE		± 15 VDC	± 100 mA	80 %
TMR 3-2410WIE	9 – 36 VDC (24 VDC nominal)	3.3 VDC	700 mA	75 %
TMR 3-2411WIE		5.0 VDC	600 mA	80 %
TMR 3-2412WIE		12 VDC	250 mA	81 %
TMR 3-2413WIE		15 VDC	200 mA	81 %
TMR 3-2421WIE		± 5.0 VDC	± 300 mA	79 %
TMR 3-2422WIE		± 12 VDC	± 125 mA	80 %
TMR 3-2423WIE		± 15 VDC	± 100 mA	81 %
TMR 3-4810WIE	18 – 75 VDC (48 VDC nominal)	3.3 VDC	700 mA	74 %
TMR 3-4811WIE		5.0 VDC	600 mA	79 %
TMR 3-4812WIE		12 VDC	250 mA	79 %
TMR 3-4813WIE		15 VDC	200 mA	79 %
TMR 3-4821WIE		± 5.0 VDC	± 300 mA	79 %
TMR 3-4822WIE		± 12 VDC	± 125 mA	79 %
TMR 3-4823WIE		± 15 VDC	± 100 mA	80 %

Input Specifications

Input current at no load (nominal input voltage)	12 V models: 60 mA typ. 24 V models: 25 mA typ. 48 V models: 15 mA typ.
Input current at full load (nominal input voltage)	12 V models: 310 mA typ. 24 V models: 155 mA typ. 48 V models: 80 mA typ.
Surge voltage (1000 msec. max.)	12 V models: 25 V max. 24 V models: 50 V max. 48 V models: 100 V max.
Start-up voltage / under voltage lockout	12 V models: 4.5 VDC / 4 VDC or lower 24 V models: 9 VDC / 8 VDC or lower 48 V models: 18 VDC / 16 VDC or lower long term operation at undervoltage will damage the converter!
max. reverse polarity input current	1.0 A
Recommended Input Fuse (Slow Blow)	12 V models: 1500 mA 24 V models: 700 mA 48 V models: 350 mA
Conducted noise (input)	EN 55022 level A, FCC part 15, level A with external capacitor (tba)

Output Specifications

Voltage set accuracy	– Single Output Models – Dual Output Models	±1 % max. ±2 % max. (balanced load)
Regulation	– Input variation V_{in} min. to V_{in} max. – Load variation 25 – 100%	0.5 % max. 1.0 % max.
Minimum load		25 % of rated max. load (operation at lower load condition is safe but a higher output ripple will be experienced)
Temperature coefficient		0.02 %/K
Ripple and noise (20 MHz bandwidth)		75 mVp-p max.
Transient response setting time (25% load step change)		500 μ s max.
Short circuit protection		continuous, automatic recovery
Capacitive load	3.3 VDC models: 1760 μ F max. 5 VDC models: 1000 μ F max. 12 VDC models: 170 μ F max. 15 VDC models: 110 μ F max. \pm 5 VDC models: 470 μ F max. (each output) \pm 12 VDC models: 100 μ F max. (each output) \pm 5 VDC models: 47 μ F max. (each output)	

General Specifications

Temperature ranges	– Operating – Case temperature – Storage	–40°C to +85°C (with derating) +105°C max. –55°C to +125°C
Load derating		3.3 %/K above +70°C
Humidity (non condensing)		95 % rel. H max.
Reliability, calculated MTBF (MIL-HDBK-217F, @ +25°C, ground benign)		> 800'000 h

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

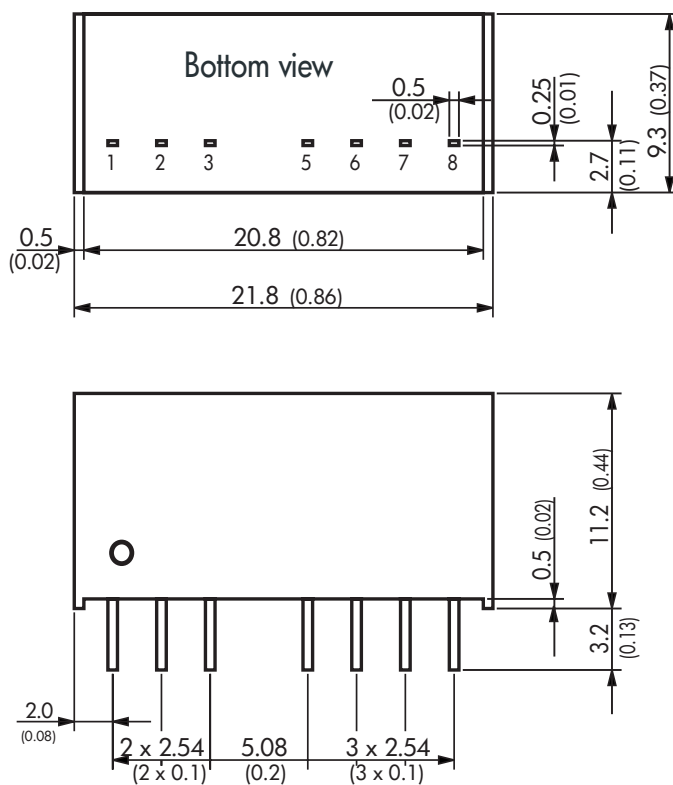
General Specifications

Isolation voltage (60 sec.)	- Input/Output	1'600 VDC
Isolation capacitance	- Input/Output	200 pF typ.
Isolation resistance	- Input/Output (500 VDC)	>1 GOhm
Switching frequency		350 kHz typ. (PFM)
Remote On/Off	- On: - Off: - Off standby current: - Off control input current:	< 0.6 VDC or open circuit 2.7 to 15 VDC (ref. to -Vin) 2.5 mA max. 1 mA max.

Physical Specifications

Casing material	non-conductive plastic (UL 94V-0 rated)
Potting material	Silicon, (UL 94V-0 rated)
Weight	4.8 g (0.17 oz)
Soldering temperature	max. 260°C / 10 sec.

Outline Dimensions



Pinout		
Pin	single output	dual output
1	-Vin (GND)	-Vin (GND)
2	+Vin (Vcc)	+Vin (Vcc)
3	Remote On/Off	Remote On/Off
5	ntc.	ntc.
6	+Vout	+Vout
7	-Vout	Common
8	ntc.	-Vout

ntc. = Not to connect

Dimensions in [mm], () = Inch
Tolerances: ±0.5 (±0.02)
Pin pitch tolerances: ±0.25 (±0.01)

Specifications can be changed any time without notice.