DC/DC Converters

TMA Series, 1 Watt

RoHS compliant

Features

- Single-in-Line (SIL) Package
- Single and Dual Output Models
- I/O-Isolation 1'000 VDC
- High Efficiency up to 81%
- Operating Temperature –40°C to +85°C
- Industry Standard Pinout
- 100% Burn-in (8 h)
- Lead free Design, RoHS compliant
- 3 Year Product Warranty

The TMA series are miniature, isolated 1 W DC/DC-converters in a Single-in-Line package (SIP). Requiring only 1.2 cm2 board space they offer the ideal solution in many space critical applications for board level power distribution. The use of SMD-technology makes it possible to offer a product with high performance at low cost.

Models

Ordercode	Input voltage	Output voltage	Output current max.	Efficiency typ.
TMA 0505S		5 VDC	200 mA	71 %
TMA 0512S		12 VDC	80 mA	78 %
TMA 0515S	5 VDC ± 10%	15 VDC	65 mA	78 %
TMA 0505D		± 5 VDC	±100 mA	72 %
TMA 0512D		±12 VDC	± 40 mA	78 %
TMA 0515D		±15 VDC	± 35 mA	79 %
TMA 1205S		5 VDC	200 mA	73 %
TMA 1212S		12 VDC	80 mA	80 %
TMA 1215S	12 VDC ± 10%	15 VDC	65 mA	80 %
TMA 1205D		± 5 VDC	±100 mA	74 %
TMA 1212D		±12 VDC	± 40 mA	81 %
TMA 1215D		±15 VDC	± 35 mA	81 %
TMA 1505S		5 VDC	200 mA	73 %
TMA 1512S		12 VDC	80 mA	80 %
TMA 1515S	15 VDC ± 10%	15 VDC	65 mA	80 %
TMA 1505D		± 5 VDC	±100 mA	74 %
TMA 1512D		±12 VDC	± 40 mA	81 %
TMA 1515D		±15 VDC	± 35 mA	81 %
TMA 2405S		5 VDC	200 mA	71 %
TMA 2412S		12 VDC	80 mA	78 %
TMA 2415S	24 VDC ± 10%	15 VDC	65 mA	79 %
TMA 2405D		± 5 VDC	±100 mA	72 %
TMA 2412D		±12 VDC	± 40 mA	79 %
TMA 2415D		±15 VDC	± 35 mA	80 %

Input Specifications

Input current no load /full load	5 Vin models:	30 mA / 260 mA typ.
	12 Vin models:	12 mA / 110 mA typ.
	15 Vin models:	12 mA / 100 mA typ.
	24 Vin models:	7 mA / 55 mA typ.
Surge voltage (1 sec. max.)	5 Vin models:	9 V max.
	12 Vin models:	18 V max.
	15 Vin models:	21 V max.
	24 Vin models:	30 V max.
Reverse voltage protection		0.3 A max.
Reflected input ripple current		can be reduced by ext. 1–3.3 µF polyester film capacitor
Input filter		internal capacitors

Output Specifications

Voltage set accuracy		± 3 %
Voltage balance (dual output models)		± 1 % max.
Regulation	– Input variation	± 1.2 % / 1 % change Vin
	– Load variation 20 – 100 %	± 10 % max.
Ripple and noise (20 MHz Bandwidth)		75 mV pk-pk max.
Temperature coefficient		± 0.02 % / K
Short circuit protection		limited 1 sec. max.
Capacitive load	– Single output models	220 µF max.
	– Dual output models	100 µF max.

General Specifications

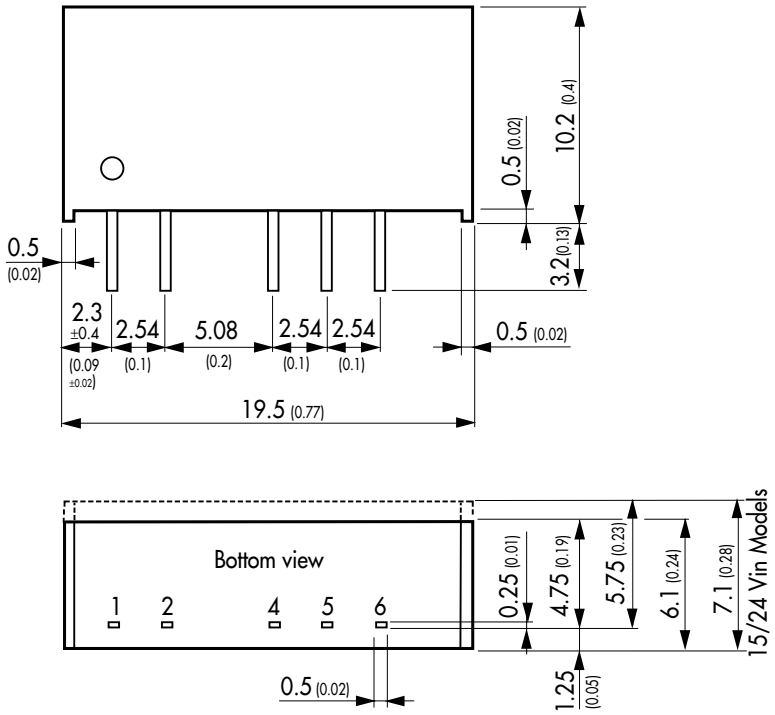
Temperature ranges	– Operating	–40 °C ... +85 °C
	– Case temperature	+95 °C max.
	– Storage	–40 °C ... +105 °C
Humidity (non condensing)		95 % rel H max.
Reliability, calculated MTBF (MIL-HDBK-217E)		>2'000'000 h @ 25 °C
Isolation voltage (input/output)		1'000 VDC
Isolation capacity (input/output)		60 pF typ.
Isolation resistance (input/output)		>1'000 Mohm
Switching frequency		100 kHz typ. (frequency modulation)
Frequency change over line and load		± 30 % max.

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

Physical Specifications

Case material		non conductive black plastic (UL 94V-0 rated)
Package weight	Single output models: Dual output models:	2.1 g (0.07 oz) 2.6 g (0.09 oz)
Soldering temperature		max. 265°C / 10 sec

Outline Dimensions mm (inches)



Pin-Out		
Pin	**Single**	**Dual**
1	+Vin (Vcc)	+Vin (Vcc)
2	–Vin (GND)	–Vin (GND)
4	–Vout	–Vout
5	No pin	Common
6	+Vout	+Vout

Tolerances ±0.25 (0.01)
pins ±0.05 (0.002)

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