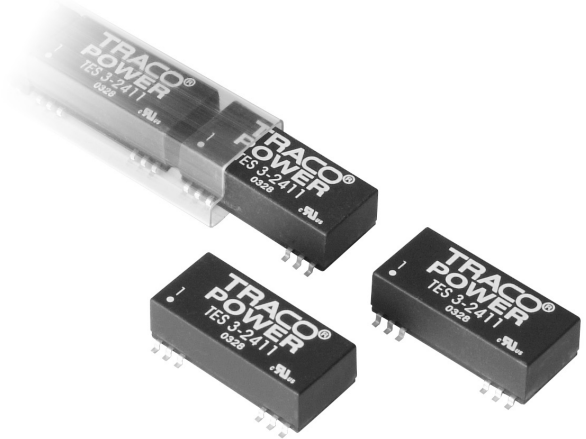


Features

- ◆ SMD package
- ◆ Wide 2:1 input voltage range
- ◆ I/O isolation 1500VDC
- ◆ Under voltage lockout
- ◆ Operating temp. range -40°C to $+85^{\circ}\text{C}$
- ◆ Short circuit protection
- ◆ High accuracy of pin co-planarity
- ◆ Lead free design – RoHS compliant
- ◆ 3-years product warranty



The TES-3 series is a family of high performance 3W dc-dc converter modules featuring wide 2:1 input voltage ranges. The 15 models come in a low profile SMD package with dimensions of 32.3 x 14.8 x 10.2 mm. A high efficiency allows an operating temperature range of -40°C to $+85^{\circ}\text{C}$ at full load. This product is qualified for soldering in a high temperature lead-free reflow solder process. Typical applications for the converters are battery operated equipment, instrumentation, communication and industrial electronics, everywhere where an isolated, tightly regulated voltage is required.

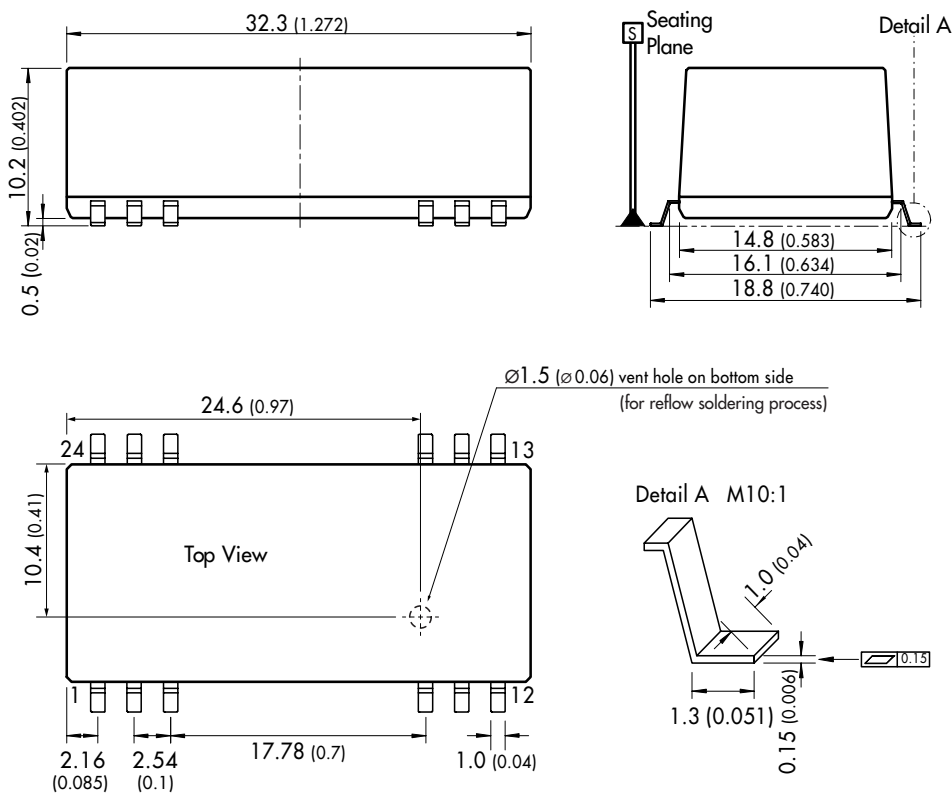
Models

Ordercode	Input voltage range	Output voltage	Output current max.	Efficiency typ.
TES 3-1210	9 – 18 VDC (12 VDC nominal)	3.3 VDC	700 mA	75 %
TES 3-1211		5 VDC	600 mA	79 %
TES 3-1212		12 VDC	250 mA	82 %
TES 3-1222		± 12 VDC	± 125 mA	81 %
TES 3-1223		± 15 VDC	± 100 mA	81 %
TES 3-2410	18 – 36 VDC (24 VDC nominal)	3.3 VDC	700 mA	76 %
TES 3-2411		5 VDC	600 mA	80 %
TES 3-2412		12 VDC	250 mA	83 %
TES 3-2422		± 12 VDC	± 125 mA	82 %
TES 3-2423		± 15 VDC	± 100 mA	82 %
TES 3-4810	36 – 75 VDC (48 VDC nominal)	3.3 VDC	700 mA	76 %
TES 3-4811		5 VDC	600 mA	80 %
TES 3-4812		12 VDC	250 mA	83 %
TES 3-4822		± 12 VDC	± 125 mA	82 %
TES 3-4823		± 15 VDC	± 100 mA	82 %

Physical Specifications

Casing material	non conductive black plastic (UL 94V-0-rated)
Pin material	Phosphor bronze
Package weight	8.8 g (0.31 oz)
Lead-free reflow solder process	as per J-STD-020D.1 (to find at: www.jedec.org - free registration required)
Moisture sensivity level (MSL)	level 2 as per J-STD-033B.1 (to find at: www.jedec.org - free registration required)
Washing process	not recommended. Product non-hermetical.

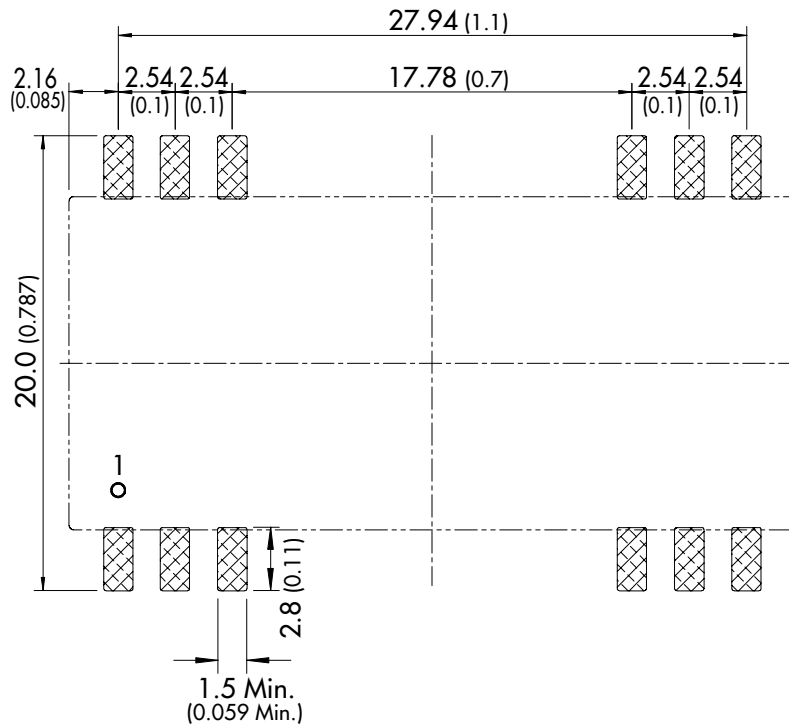
Outline Dimensions mm (inches)



Pin-Out		
Pin	Single	Dual
1	-Vin (GND)	-Vin (GND)
2	-Vin (GND)	-Vin (GND)
3	NC	NC
10	NC	Common
11	NC	NC
12	NC	-V Output
13	+V Output	+V Output
14	NC	NC
15	-V Output	Common
22	NC	NC
23	+Vin (Vcc)	+Vin (Vcc)
24	+Vin (Vcc)	+Vin (Vcc)

Dimensions in [mm], () = Inch
Tolerances ±0.25 (±0.01)
Pin pitch tolerances ±0.05 (±0.002)

Outline Dimensions mm (inches)



Dimensions in [mm], () = Inch
 Tolerances ± 0.25 (± 0.01)
 Pin pitch tolerances ± 0.05 (± 0.002)

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[TES 3-2410](#) [TES 3-2411](#) [TES 3-1212](#) [TES 3-1223](#) [TES 3-4810](#) [TES 3-2422](#) [TES 3-1211](#) [TES 3-4822](#) [TES 3-4811](#) [TES 3-2423](#) [TES 3-4812](#) [TES 3-1210](#) [TES 3-4823](#) [TES 3-2412](#) [TES 3-1222](#)