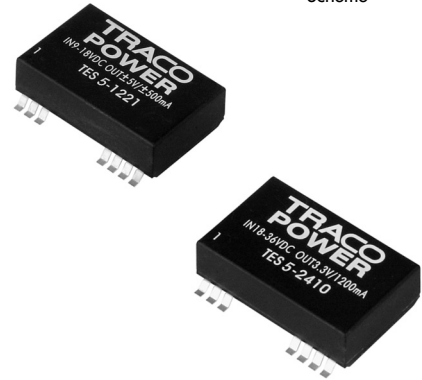


### Features

- ◆ Compact low profile SMD package
- ◆ Wide 2:1 input voltage range
- ◆ I/O isolation 1500VDC
- ◆ Operating temp. range -40°C to +85°C max.
- ◆ Short circuit protection
- ◆ Remote On/Off
- ◆ High accuracy of pin co-planarity
- ◆ Lead free design – RoHS compliant
- ◆ 3-years product warranty



The TES-5 series is a new range of high performance 5W dc-dc converter modules in low profile SMD package with compact dimensions of only 33.4 x 20.6 x 10.2 mm. The 18 available models feature wide 2:1 input voltage range and tightly regulated output voltage. High efficiency allows operating temperatures up to 71°C at full load.

Further features are built-in EMI-filter to meet EN 55022, class A and FCC, level A without additional components and remote On/Off control. The products are qualified for soldering in a high temperature lead-free reflow solder process. Typical applications for these converters are battery powered equipment, instrumentation, communication systems and industrial controls.

### Models

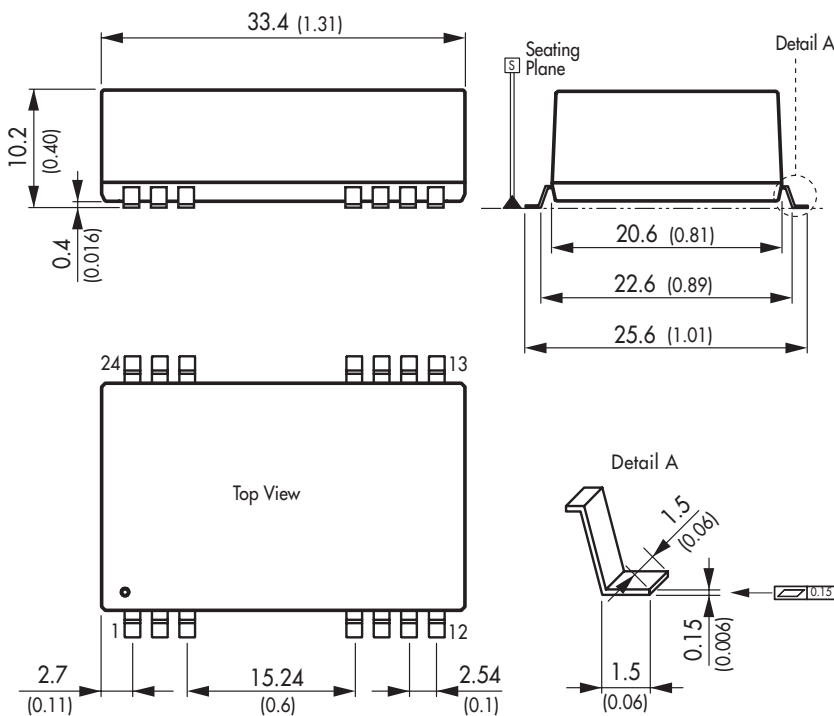
Ordercode	Input voltage range	Output voltage	Output current max.	Efficiency typ.
TES 5-1210	9 – 18 VDC (12 VDC nominal)	3.3 VDC	1200 mA	76 %
TES 5-1211		5 VDC	1000 mA	80 %
TES 5-1212		12 VDC	420 mA	83 %
TES 5-1213		15 VDC	335 mA	83 %
TES 5-1221		±5 VDC	±500 mA	80 %
TES 5-1222		±12 VDC	±210 mA	83 %
TES 5-1223		±15 VDC	±165 mA	83 %
TES 5-2410	18 – 36 VDC (24 VDC nominal)	3.3 VDC	1200 mA	78 %
TES 5-2411		5 VDC	1000 mA	82 %
TES 5-2412		12 VDC	420 mA	85 %
TES 5-2413		15 VDC	335 mA	85 %
TES 5-2421		±5 VDC	±500 mA	82 %
TES 5-2422		±12 VDC	±210 mA	85 %
TES 5-2423		±15 VDC	±165 mA	85 %
TES 5-4810	36 – 75 VDC (48 VDC nominal)	3.3 VDC	1200 mA	78 %
TES 5-4811		5 VDC	1000 mA	82 %
TES 5-4812		12 VDC	420 mA	85 %
TES 5-4813		15 VDC	335 mA	85 %
TES 5-4821		±5 VDC	±500 mA	82 %
TES 5-4822		±12 VDC	±210 mA	85 %
TES 5-4823		±15 VDC	±165 mA	85 %



### Physical Specifications

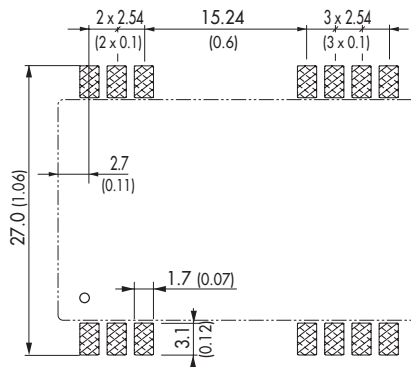
Casing material	non conductive plastic
Weight	14 g (0.55oz)
Moisture sensitivity level (MSL)	level 2 as per J-STD-020D.1 (to find at: <a href="http://www.jedec.org">www.jedec.org</a> - free registration required)
Washing process	<a href="http://www.tracopower.com/products/smd-wash.pdf">www.tracopower.com/products/smd-wash.pdf</a>
Packaging	<a href="http://www.tracopower.com/products/tes5-pack.pdf">www.tracopower.com/products/tes5-pack.pdf</a>

### Outline Dimensions



Pin-Out		
Pin	Single	Dual
1	Remote On/Off	Remote On/Off
2	-Vin (GND)	-Vin (GND)
3	-Vin (GND)	-Vin (GND)
9	No con.	Common
10	No con.	No con.
11	No con.	-Vout
12	No con.	No con.
13	No con.	No con.
14	+Vout	+Vout
15	No con.	No con.
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)
24	No con.	No con.

Pin Patterns:



Dimensions in [mm], ( ) = Inch  
Tolerances  $\pm 0.25$  ( $\pm 0.02$ )  
Pin pitch tolerances  $\pm 0.13$  ( $\pm 0.005$ )

Specifications can be changed without notice! Make sure you are using the latest documentation, downloadable at [www.tracopower.com](http://www.tracopower.com)