



## TE Series • 10/100 Base-T Single Port Transformer Modules

### Features

- Low profile and light weight 10/100 BaseT modules facilitate pick and place compatibility and speed of placement
- Meets requirements of IEEE 802.3u and ANSI X3.263
- Consistent and reliable coplanarity
- Excellent quality at extremely competitive price due to high volume production
- Manufactured in an ISO-9001:2000, TS-16949 and ISO-14001:2004 certified Talema facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C



### Electrical Specifications @ 25°C

Inductance: 350µH minimum @ 100kHz, 100mV, 8mA  
 Leakage Inductance: 0.4µH @ 1MHz  
 $C_{w/w}$ : 15pF typical

Minimum isolation voltage: 1500 Vrms  
 Operating Temperature Range: -40°C to +85°C  
 Storage Temperature: -40°C to +125°C  
 Standard Packing: Tape and Reel

Quality and consistency is guaranteed through 100% testing of the specified parameters for primary inductance, leakage inductance, turns ratio, DC resistance and interwinding capacitance. This ensures that the return loss and pulse wave shape requirements can be fully maintained. Additionally, all parts are tested for 1500V minimum isolation.

### Applications

Talema 10/100Base-T transformer modules contain transmit and receive isolation transformers to maintain consistent wave shape and suppression of common mode noise while providing equipment isolation per IEEE 802.3. High impedance common mode quad chokes for additional EMI suppression have been added on some models as required for FCC and CISPR 22 Class B certification.

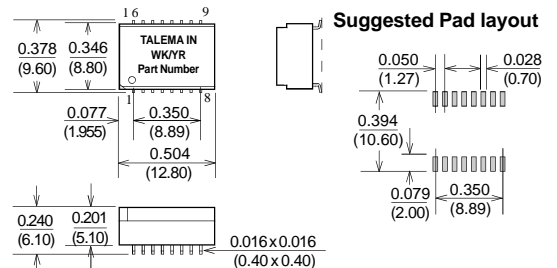
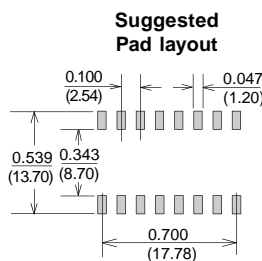
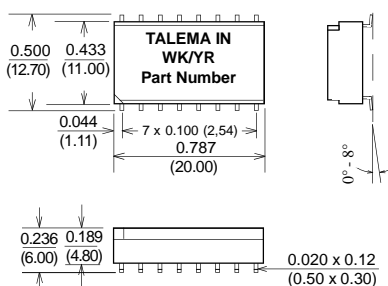
### TE Series - 10/100Base-T Single Port Isolation Transformer Modules

| Part Number       | Turns Ratio (Pri:Sec) |         | Insertion Loss (dB Max) | Return Loss (dB Min @ 100 Ohm) |         |       |       |       | Differential to Common Mode Rejection (dB Min) |       |        | Crosstalk (dB Typ) |       |        | Schematic |
|-------------------|-----------------------|---------|-------------------------|--------------------------------|---------|-------|-------|-------|--|-------|--------|--------------------|-------|--------|-----------|
|                   | Tx                    | Rx      |                         | 0.1 - 100MHz                   | 1-30MHz | 40MHz | 60MHz | 80MHz | 30MHz  | 60MHz | 100MHz | 30MHz              | 60MHz | 100MHz |           |
| TE_-300A-J        | 1ct:1ct               | 1ct:1ct | -1.0                    | -20                            | -20     | -18   | -14   | -42   | -36  | -33   | -50    | -40                | -40   | A      |           |
| TE_-300B-J & B1-J | 1ct:1ct               | 1ct:1ct | -1.0                    | -22                            | -20     | -18   | -12   | -42   | -38  | -32   | -50    | -40                | -40   | B      |           |
| TE_-300D-J        | 1ct:1ct               | 1ct:1ct | -1.0                    | -22                            | -20     | -18   | -12   | -45   | -40  | -35   | -50    | -40                | -40   | D      |           |
| TE_-304D-J        | 2ct:1ct               | 1ct:1ct | -1.1                    | -20                            | -20     | -14   | -11.5 | -42   | -37  | -33   | -45    | -40                | -35   | D      |           |
| TE_-305D-J        | 1.89ct:1ct            | 1ct:1ct | -1.1                    | -18                            | -16     | -14   | -12   | -30   | -30  | -30   | -35    | -35                | -35   | D      |           |
| TE_-300E-J        | 1ct:1ct               | 1ct:1ct | -1.0                    | -18                            | -16     | -14   | -12   | -42   | -37  | -32   | -45    | -40                | -35   | E      |           |
| TE_-304F-J        | 2ct:1                 | 1ct:1ct | -1.0                    | -16                            | -16     | -16   | -12   | -35   | -35  | -32   | -40    | -40                | -35   | F      |           |
| TE_-304G-J        | 2ct:1ct               | 1:1:1ct | -1.0                    | -16                            | -16     | -16   | -12   | -35   | -35  | -32   | -40    | -40                | -35   | G      |           |
| TE_-300H-J & H1-J | 1ct:1ct               | 1ct:1ct | -1.0                    | -20                            | -18     | -18   | -14   | -45   | -40  | -35   | -45    | -40                | -35   | H      |           |
| TE_-304J-J        | 2ct:1                 | 1:1:1ct | -1.0                    | -16                            | -16     | -16   | -12   | -35   | -35  | -32   | -40    | -40                | -35   | J      |           |
| TE_-300K-J & K1-J | 1ct:1                 | 1ct:1ct | -1.0                    | -16                            | -13.4   | -11.5 | -10   | -45   | -40  | -35   | -40    | -38                | -35   | K      |           |
| TE_-300L-J        | 1ct:1ct               | 1ct:1ct | -0.9                    | -18                            | -14     | -12   | -11   | -40   | -35  | -30   | -45    | -45                | -37   | L      |           |
| TE_-300M-J        | 1ct:1ct               | 1ct:1ct | -1.0                    | -20                            | -17     | -17   | -14   | -40   | -40  | -40   | -40    | -40                | -40   | M      |           |
| TE_-300N-J        | 1ct:1ct               | 1ct:1ct | -1.0                    | -20                            | -17     | -17   | -14   | -40   | -40  | -40   | -40    | -40                | -40   | N      |           |
| TE_-300P-J        | 1ct:1ct               | 1ct:1ct | -1.1                    | -18                            | -16     | -14   | -12   | -42   | -37  | -35   | -40    | -40                | -35   | P      |           |

#### TES Module

#### Package Style

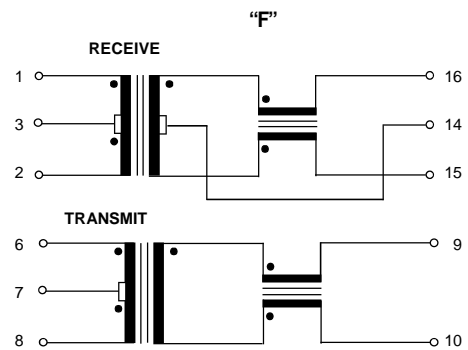
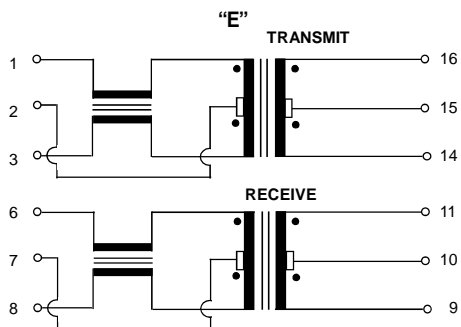
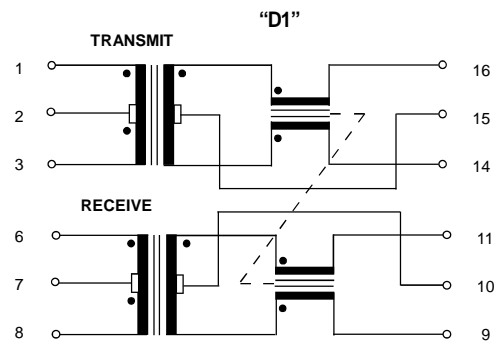
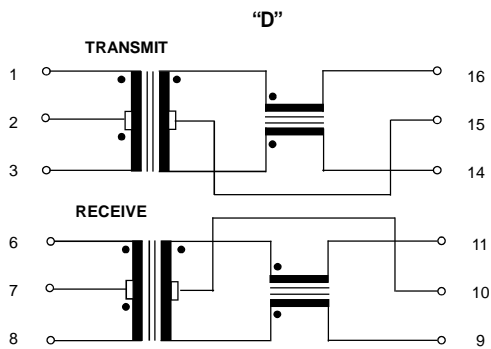
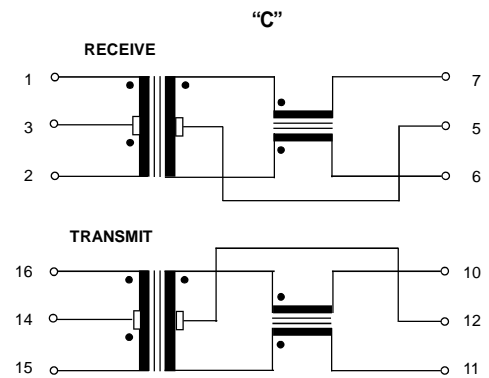
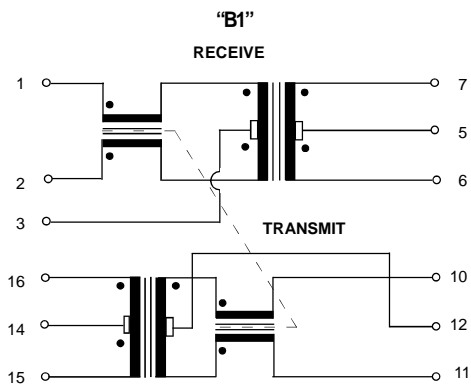
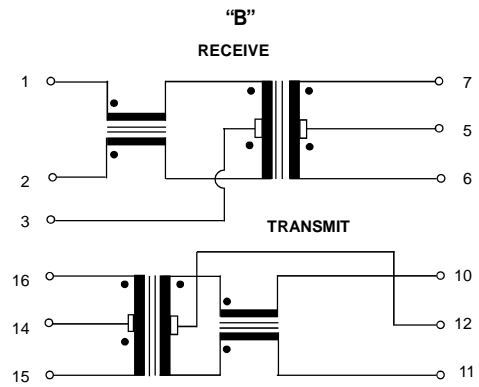
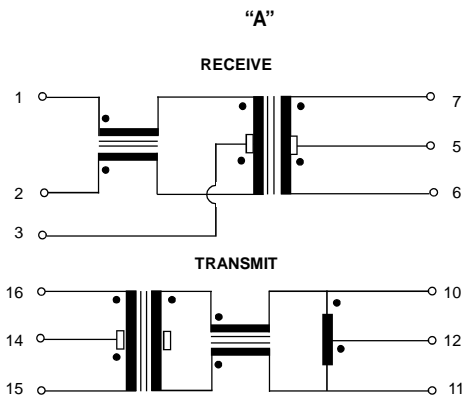
#### TEM Miniature Module



Surface coplanarity will be 0.004 (0.10) maximum

Dimensions: Inches (Millimeters)  
 Tolerance: ±0.010 (0.25) unless specified otherwise

# Schematics • TE Series 10/100Base-T Single Port SMD Transformer Modules



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