



## Quad Port SMD 10/100Base-T Isolation Transformer Modules

### Features

- Low profile (5.8mm) and light weight (4.0 g) 10/100Base-T Quad Port isolation transformer modules designed to support four single or double stacked RJ-45 connectors
- SMD packages facilitate pick and place compatability and speed of placement
- Modules meet 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-16949:2002 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

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 10/100BaseT Quad transformer modules contain transmit and receive isolation transformers to maintain constant 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.

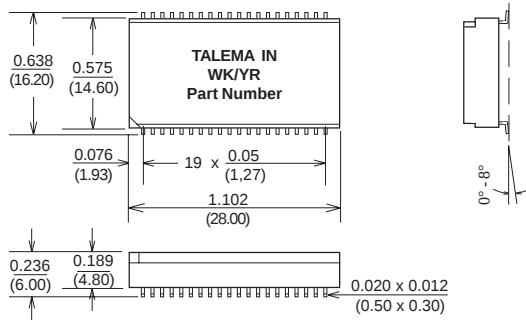
### TEQ Series - SMD Quad Port 10/100Base T Isolation Transformer Modules

| Part Number | Turns Ratio<br>±2% |       | Insertion<br>Loss<br>(dB Typ) | Return Loss<br>(dB Min) |             |           |           | Crosstalk<br>(dB Typ) |          |           |           | Common to Common<br>Rejection Ratio<br>0.1-60MHz (dB Typ) |          | Differential to<br>Common Mode<br>Rejection (dB Typ) |             | Schematic     |
|-------------|--------------------|-------|-------------------------------|-------------------------|-------------|-----------|-----------|-----------------------|----------|-----------|-----------|-----------------------------------------------------------|----------|------------------------------------------------------|-------------|---------------|
|             | Tx                 | Rx    |                               | 0.1 - 100<br>MHz        | 2-30<br>MHz | 40<br>MHz | 50<br>MHz | 60-80<br>MHz          | 1<br>MHz | 30<br>MHz | 60<br>MHz | 100<br>MHz                                                | Transmit | Receive                                              | 1-60<br>MHz | 60-200<br>MHz |
| TEQ-200A-J  | 1ct:1ct            | 1 : 1 | -0.5                          | -21                     | -17         | -14.5     | -12       | -65                   | -55      | -45       | -35       | -30                                                       | -30      | -40                                                  | -30         | A             |
| TEQ-202A-J  | 1.25ct:1ct         | 1 : 1 | -0.5                          | -18                     | -18         | -14       | -12       | -60                   | -50      | -40       | -35       | -30                                                       | -30      | -39                                                  | -33         | A             |
| TEQ-204A-J  | 2ct:1ct            | 1 : 1 | -0.5                          | -18                     | -18         | -14       | -12       | -60                   | -50      | -40       | -35       | -30                                                       | -30      | -39                                                  | -33         | A             |
| TEQ-200B-J  | 1ct:1ct            | 1 : 1 | -0.5                          | -21                     | -17         | -14.5     | -12       | -65                   | -55      | -45       | -35       | -30                                                       | -30      | -40                                                  | -30         | B             |
| TEQ-202B-J  | 1.25ct:1ct         | 1 : 1 | -0.5                          | -18                     | -18         | -14       | -12       | -60                   | -50      | -40       | -35       | -30                                                       | -30      | -39                                                  | -33         | B             |
| TEQ-204B-J  | 2ct:1ct            | 1 : 1 | -0.5                          | -21                     | -17         | -14.5     | -12       | -60                   | -50      | -40       | -35       | -30                                                       | -30      | -40                                                  | -30         | B             |
| TEQ-200C-J  | 1ct:1ct            | 1 : 1 | -0.5                          | -21                     | -17         | -14.5     | -12       | -65                   | -55      | -45       | -35       | -30                                                       | -30      | -40                                                  | -40         | C             |
| TEQ-204C-J  | 2ct:1ct            | 1 : 1 | -0.5                          | -21                     | -17         | -14.5     | -12       | -60                   | -50      | -40       | -35       | -30                                                       | -30      | -40                                                  | -40         | C             |
| TEQ-205C-J  | 1.89ct:1ct         | 1 : 1 | -1.1                          | -18                     | -16         | -14       | -12       | -60                   | -50      | -40       | -35       | -30                                                       | -25      | -40                                                  | -40         | C             |
| TEQ-200D-J  | 1ct:1ct            | 1 : 1 | -0.5                          | -21                     | -17         | -14.5     | -12       | -65                   | -55      | -45       | -35       | -30                                                       | -30      | -40                                                  | -30         | D             |
| TEQ-200D1-J | 1ct:1ct            | 1 : 1 | -0.5                          | -21                     | -17         | -14.5     | -12       | -65                   | -55      | -45       | -35       | -30                                                       | -30      | -40                                                  | -30         | D1            |
| TEQ-204D-J  | 2ct:1ct            | 1 : 1 | -0.5                          | -21                     | -17         | -14.5     | -12       | -60                   | -50      | -40       | -35       | -30                                                       | -30      | -40                                                  | -40         | D             |
| TEQ-204E-J  | 2ct:1ct            | 1 : 1 | -0.5                          | -21                     | -17         | -14.5     | -12       | -60                   | -50      | -40       | -35       | -30                                                       | -30      | -40                                                  | -30         | E             |
| TEQ-204F-J  | 2ct:1ct            | 1 : 1 | -0.5                          | -21                     | -17         | -14.5     | -12       | -60                   | -50      | -40       | -35       | -30                                                       | -30      | -40                                                  | -30         | F             |
| TEQ-200G-J  | 1ct:1ct            | 1 : 1 | -0.5                          | -21                     | -17         | -14.5     | -12       | -65                   | -50      | -40       | -30       | -30                                                       | -30      | -40                                                  | -30         | G             |
| TEQ-200H-J  | 1ct:1ct            | 1 : 1 | -0.5                          | -21                     | -17         | -14.5     | -12       | -65                   | -55      | -45       | -35       | -30                                                       | -30      | -40                                                  | -30         | H             |
| TEQ-200J-J  | 1ct:1ct            | 1 : 1 | -0.5                          | -21                     | -17         | -14.5     | -12       | -65                   | -50      | -40       | -30       | -30                                                       | -30      | -40                                                  | -30         | J             |
| TEQ-203K-J  | 1.41ct:1ct         | 1 : 1 | -0.5                          | -18                     | -16         | -14       | -12       | -60                   | -50      | -40       | -35       | -35                                                       | -35      | -40                                                  | -30         | K             |

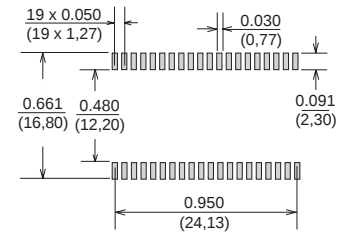
Dimensions and Schematics on following page

# Dimensions & Schematics • Quad Port 10/100Base-T Transformer Modules

## Dimensions



## Suggested Pad Layout

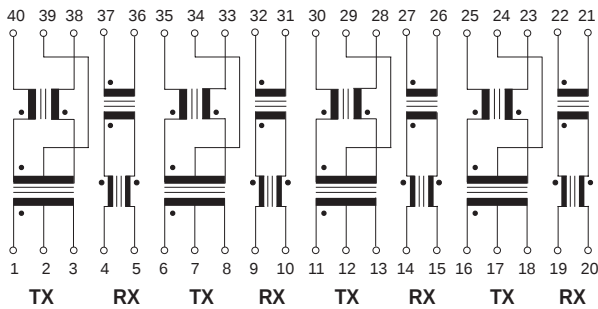


Surface coplanarity will be <0.004 (0.10)

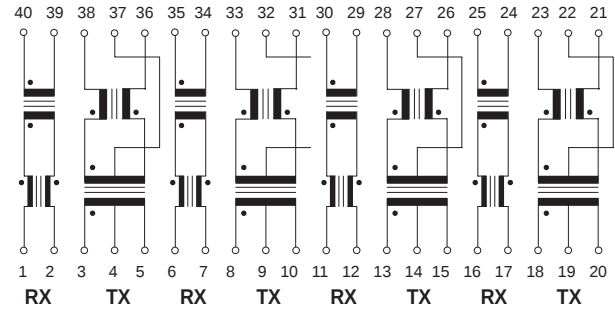
Dimensions: Inches (Millimeters)  
Tolerance: ±0.010 (0.25) unless specified otherwise

## Schematics

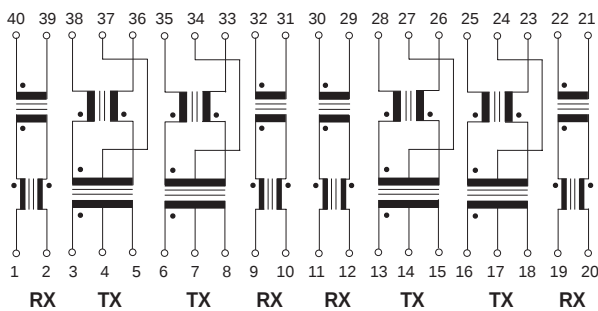
### A



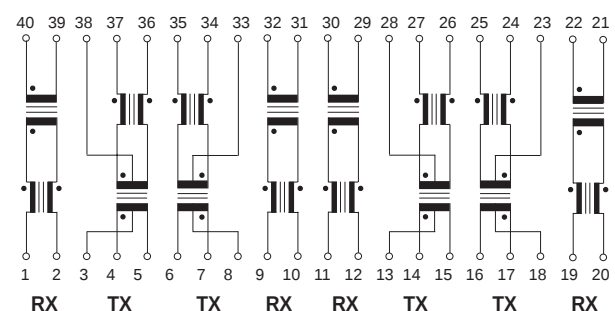
### B



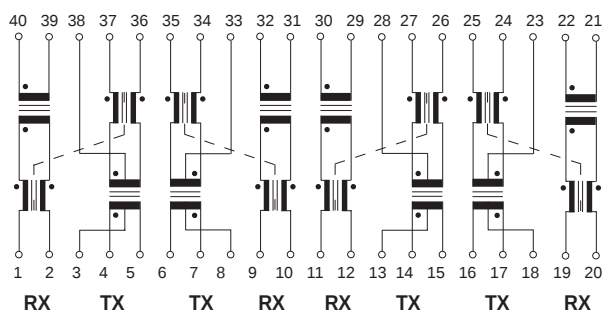
### C



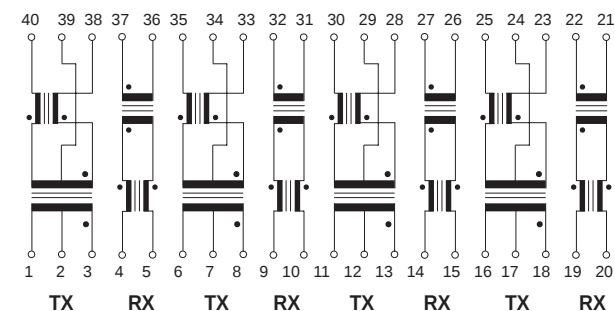
### D



### D1



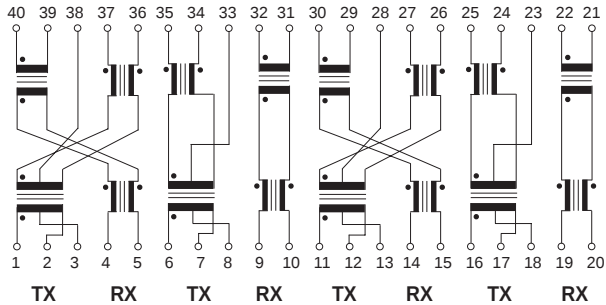
### E



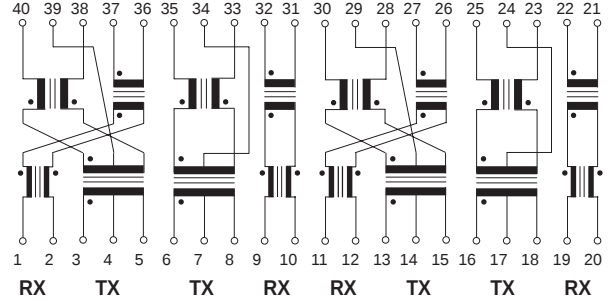
## Schematics • SMD Quad Port 10/100Base-T Isolation Transformer Modules

### Schematics

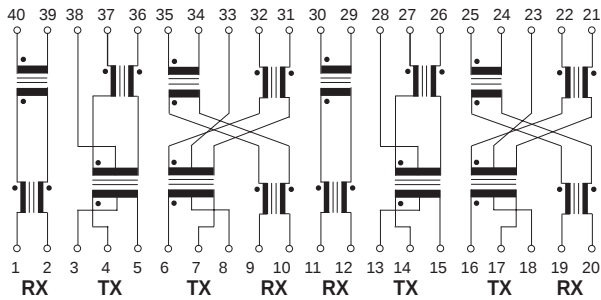
F



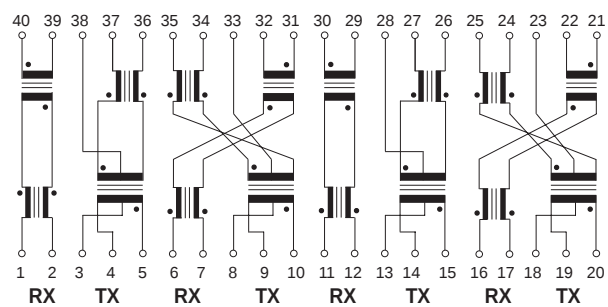
G



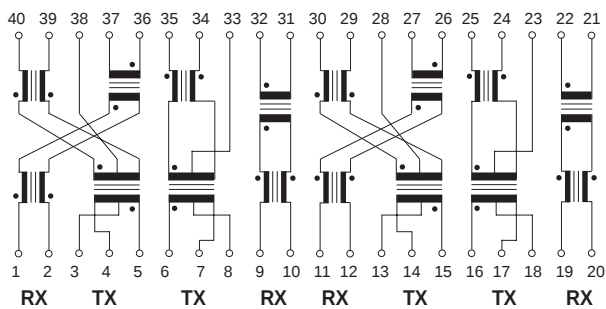
H



J



K



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