

## RF Transformer

50Ω 2100 to 2700 MHz

TCW2-272+



## Maximum Ratings

|                                                                                                                             |                |
|-----------------------------------------------------------------------------------------------------------------------------|----------------|
| Operating Temperature                                                                                                       | -55°C to 100°C |
| Storage Temperature                                                                                                         | -55°C to 100°C |
| Input RF Power*                                                                                                             | 2W at 25°C     |
| *Passband rating, derate linearly to 1W at 100°C ambient<br>Permanent damage may occur if any of these limits are exceeded. |                |

## Pad Connections

|                               |     |
|-------------------------------|-----|
| PRIMARY DOT (Unbalanced Port) | 1   |
| PRIMARY (GND)                 | 3   |
| SECONDARY DOT (Balanced)      | 4   |
| SECONDARY (Balanced)          | 6   |
| NO CONNECTION                 | 2,5 |

## Features

- wideband, 2100 to 2700 MHz
- low phase unbalance, 5 deg. and amplitude unbalance, 0.6 dB typ.
- miniature size 0603 (1.6x0.8mm)
- LTCC construction
- low cost
- aqueous washable

## Applications

- WLAN
- WiMAX/WiBRO
- ISM
- RADAR

CASE STYLE: JC0603C  
PRICE: \$ 1.19 ea. QTY (20)  
\$ 1.14 ea. QTY (100)

## +RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications



Available Tape and Reel  
at no extra cost

| Reel Size | Devices/Reel                      |
|-----------|-----------------------------------|
| 7"        | 20, 50, 100, 200, 500, 1000, 4000 |

## Electrical Specifications at 25°C

| Parameter           | Frequency (MHz) | Min. | Typ. | Max. | Unit   |
|---------------------|-----------------|------|------|------|--------|
| Impedance Ratio     |                 |      | 2    |      |        |
| Frequency Range     |                 | 2100 | —    | 2700 | MHz    |
| Insertion Loss*     | 2400 - 2500     | —    | 1.1  | 1.4  | dB     |
|                     | 2100 - 2700     | —    | 1.3  | —    |        |
| Amplitude Unbalance | 2400 - 2500     | —    | 0.6  | 1.4  | dB     |
|                     | 2100 - 2700     | —    | 0.8  | —    |        |
| Phase Unbalance †   | 2400 - 2500     | —    | 4    | 10   | Degree |
|                     | 2100 - 2700     | —    | 8    | —    |        |

\* Reference Demo Board TB-793+

† Relative to 180°

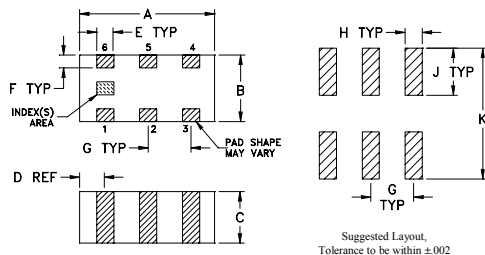
## Typical Performance Data at 25°C\*\*

| FREQUENCY (MHz) | INSERTION LOSS (dB) | INPUT R. LOSS (dB) | AMPLITUDE UNBALANCE (dB) | PHASE UNBALANCE (Deg.) |
|-----------------|---------------------|--------------------|--------------------------|------------------------|
| 2100            | 1.21                | 12.69              | 0.40                     | 10.88                  |
| 2200            | 1.15                | 13.35              | 0.28                     | 8.73                   |
| 2300            | 1.13                | 13.65              | 0.20                     | 6.32                   |
| 2400            | 1.14                | 13.52              | 0.10                     | 3.73                   |
| 2475            | 1.16                | 13.17              | 0.06                     | 1.68                   |
| 2500            | 1.17                | 13.01              | 0.04                     | 0.97                   |
| 2550            | 1.20                | 12.68              | 0.01                     | 0.35                   |
| 2575            | 1.22                | 12.51              | 0.01                     | 1.01                   |
| 2600            | 1.24                | 12.32              | 0.01                     | 1.64                   |
| 2700            | 1.34                | 11.34              | 0.04                     | 4.47                   |

\*\* Measured with Agilent E5071B network analyzer using impedance conversion and port extension.

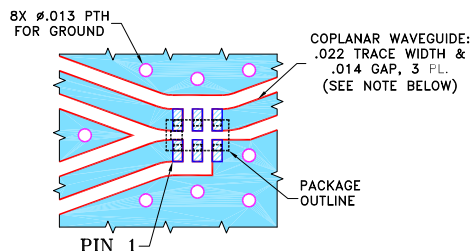
## Outline Drawing

PCB Land Pattern



## Outline Dimensions (inch/mm)

| A    | B    | C    | D    | E     | F    |
|------|------|------|------|-------|------|
| .063 | .031 | .024 | .012 | .008  | .006 |
| 1.60 | 0.79 | 0.61 | 0.30 | 0.20  | 0.15 |
| G    | H    | J    | K    | wt    |      |
| .020 | .010 | .022 | .053 | grams |      |
| 0.51 | 0.25 | 0.56 | 1.35 | 0.005 |      |

Demo Board MCL P/N: TB-793+  
Suggested PCB Layout (PL-430)

## NOTES:

1. COPLANAR WAVEGUIDE IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .010" ± .001". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
3. DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).
4. DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

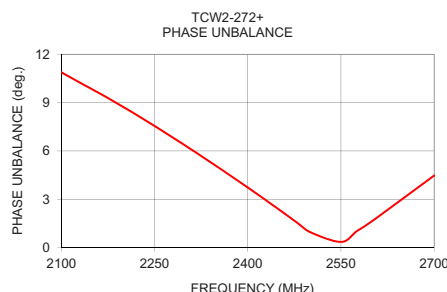
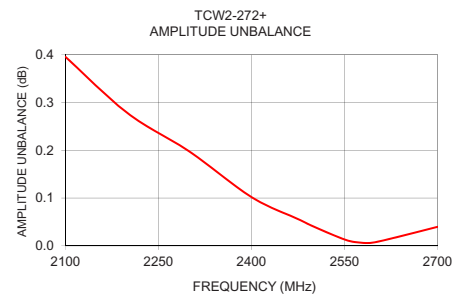
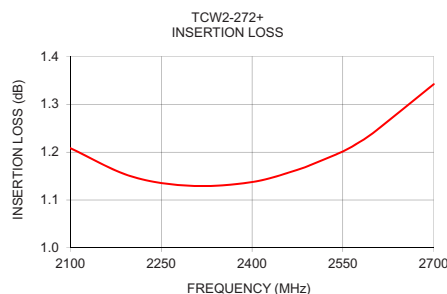
## Notes

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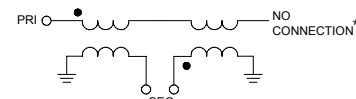


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REV. OR  
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MY/CP/AM  
141010



## configuration J



\*Internal Open Circuit