

E-Series Transformer, RF 1:1 Transmission Line 4.5 - 3000 MHz

Rev. V12

Features

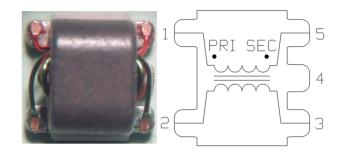
- Surface Mount
- 1:1 impedance ratio
- Available on Tape and Reel
- RoHS Compliant and Pb Free
- 260°C Reflow Compatible
- Available on Tape and Reel

Description

The ETC1-1-13 is a 1:1 transmission line transformer in a low cost surface mount package.

Ideally suited for high volume cellular and wireless applications.

Functional Schematic



Pin Configuration

| Pin No. | Function | |
|---------|------------------------|--|
| 1 | Primary Dot | |
| 2 | Primary | |
| 3 | Secondary | |
| 4 | Not Connected (ground) | |
| 5 | Secondary Dot | |

Electrical Specifications: Freq. = 4.5 - 3000 MHz, $T_A = 25$ °C, $Z_0 = 50 \Omega$, $P_{IN} = 0 \text{ dBm}$

| Parameter | Conditions | Units | Min. | Тур. | Max. |
|--------------------------------------|--|--------|------|----------------|-------------------|
| Insertion Loss (Ref. level -3 dB) | 4.5 - 1000 MHz 1000 - 2000 MHz 2000 - 3000 MHz | dB | - | 0.32 - - | 1.0 2.0 3.5 |
| Amplitude Balance | - | dB | - | - | ±1.0 |
| Phase Balance (Ref. value 0°) | - | degree | - | - | ±20 |

Ordering Information

| Part Number | Description |
|-------------|-----------------|
| ETC1-1-13TR | 2000 piece reel |

Recommended Maximum Ratings

| Parameter | Units |
|-----------------------|----------------|
| Input RF Power | 250 mW |
| DC Current | 30 mA |
| Operating Temperature | -55°C to +85°C |

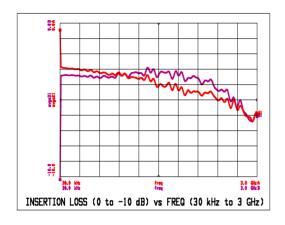


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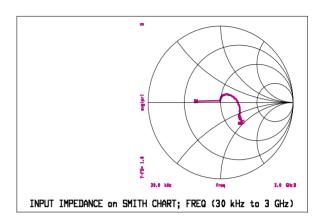
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Typical Performance Curves: $T_A = 25^{\circ}C$, $Z_0 = 50 \Omega$, $P_{IN} = 0 \text{ dBm}$

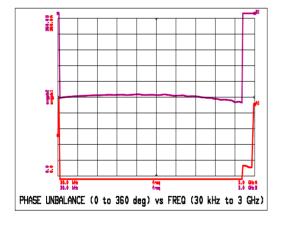
Insertion Loss



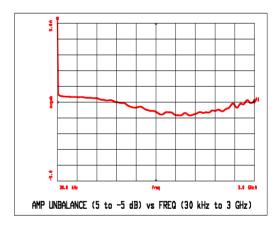
Input Impedance



Phase Unbalance



Amplitude Unbalance



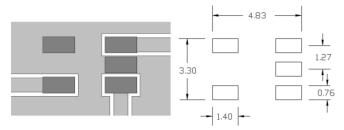
Full temperature plots available on request



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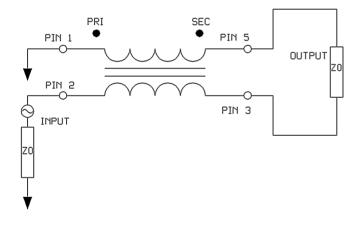
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Recommended Board Layout / Footprint²

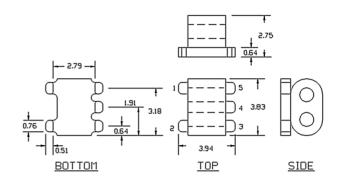


 Recommended PCB layout shown uses 0.8 mm FR4, grounded coplanar wave guide, transmission line width 0.90 mm and gap 0.25 mm.

Application Circuit

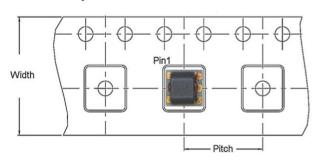


Outline Drawing 3,4,5,6



- 3. Dimensions in mm.
- 4. Tolerance: ±0.2 mm unless otherwise noted.
- 5. Model number and lot code are printed on the reel.
- 6. Lead finish: Sn.

Carrier Tape Orientation



Tape & Reel Information

| Parameter | Units | Value | | |
|--|-------|-------|--|--|
| Qty per reel | - | 2000 | | |
| Reel Size | mm | 330 | | |
| Width | mm | 12.0 | | |
| Pitch | mm | 8.0 | | |
| Orientation | - | F5 | | |
| Reference Application Note ANI-019 for orientation | | | | |

ETC1-1-13



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