

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

Rev. V12

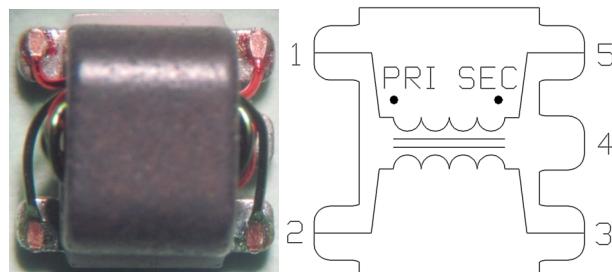
**Features**

- 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<sub>A</sub> = 25°C, Z<sub>0</sub> = 50 Ω, P<sub>IN</sub> = 0 dBm**

Parameter	Conditions	Units	Min.	Typ.	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

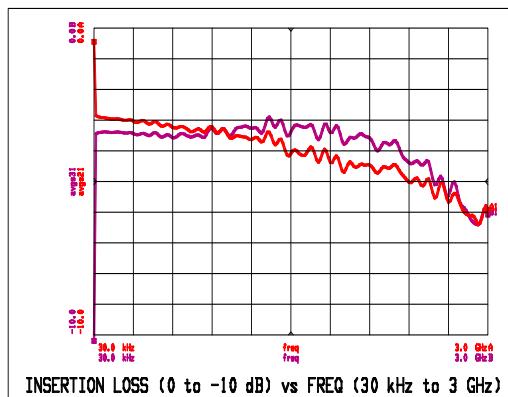
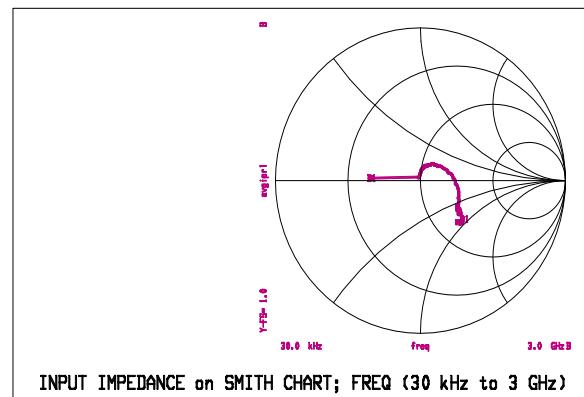
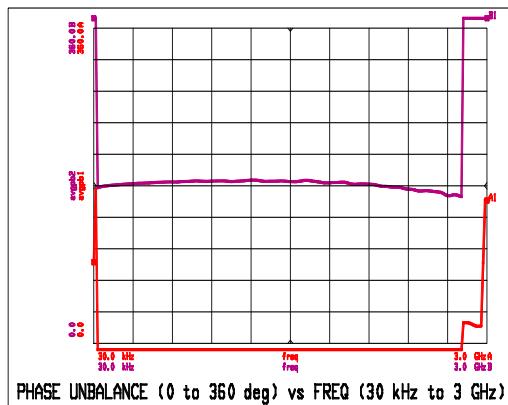
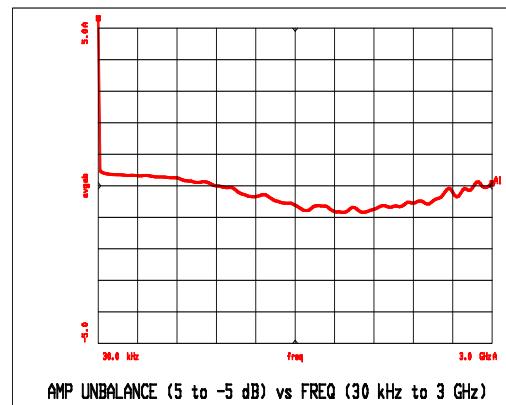
**Recommended Maximum Ratings**

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

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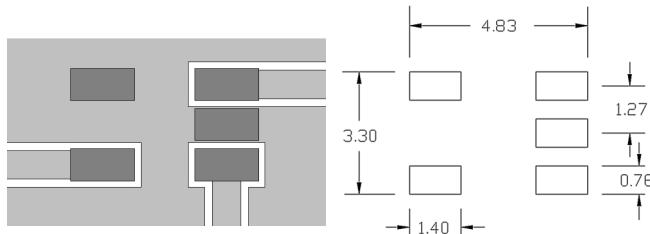
**Typical Performance Curves:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 50 \Omega$ ,  $P_{IN} = 0 \text{ dBm}$**

*Insertion Loss**Input Impedance**Phase Unbalance**Amplitude Unbalance*

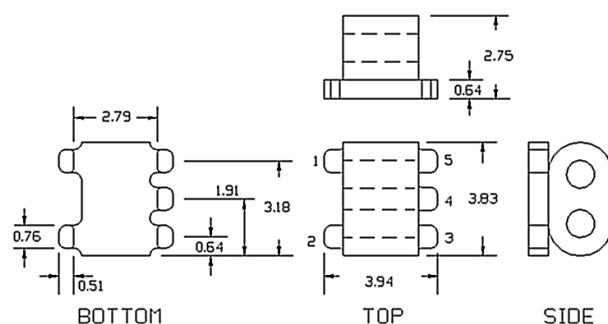
Full temperature plots available on request

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**Recommended Board Layout / Footprint<sup>2</sup>**

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

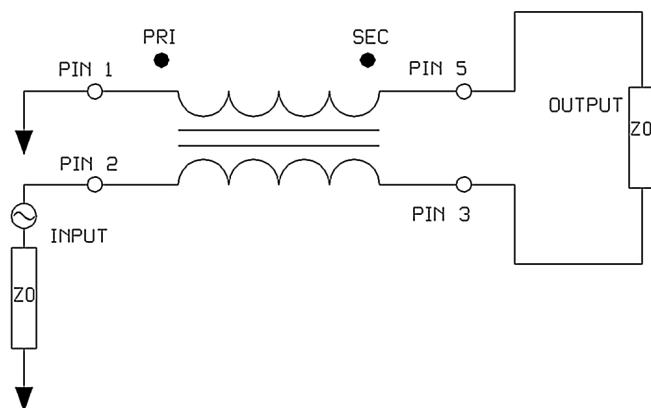
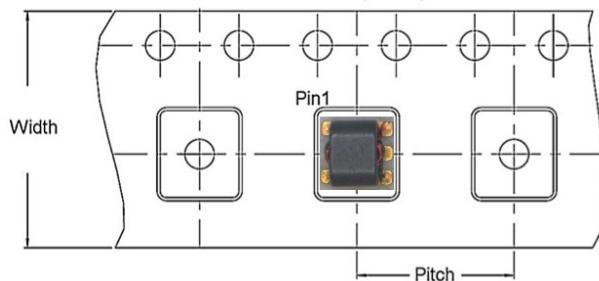
**Outline Drawing<sup>3,4,5,6</sup>**

3. Dimensions in mm.

4. Tolerance:  $\pm 0.2$  mm unless otherwise noted.

5. Model number and lot code are printed on the reel.

6. Lead finish: Sn.

**Application Circuit****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		

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