

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

Rev. V12

Features

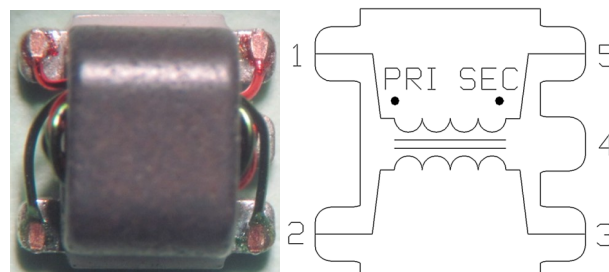
- Surface Mount
- 1:1 impedance ratio
- Available on Tape and Reel
- RoHS Compliant and Pb Free
- 260°C Reflow Compatible
- Available on Tape and Reel

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

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

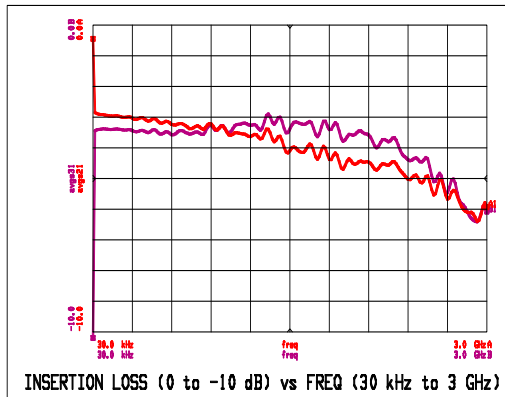
Parameter	Units
Input RF Power	250 mW
DC Current	30 mA
Operating Temperature	-55°C to $+85^\circ\text{C}$

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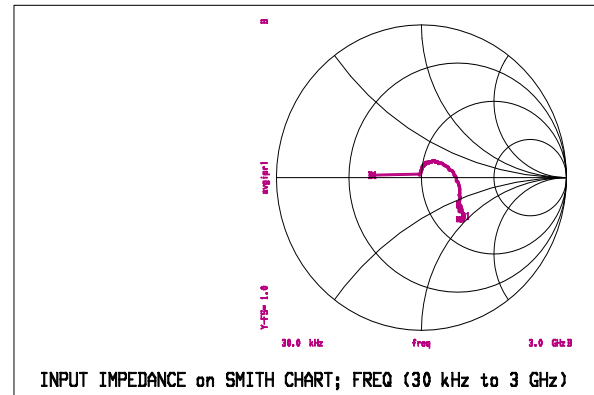
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Typical Performance Curves: $T_A = 25^\circ\text{C}$, $Z_0 = 50\ \Omega$, $P_{IN} = 0\ \text{dBm}$

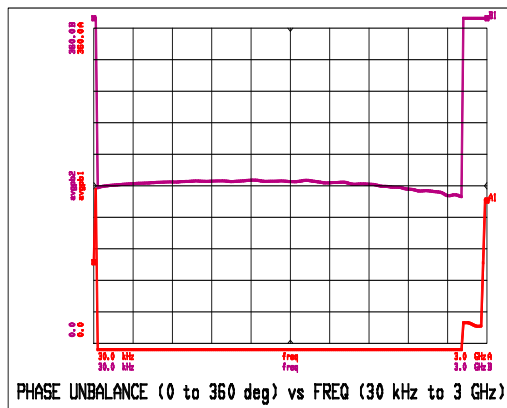
Insertion Loss



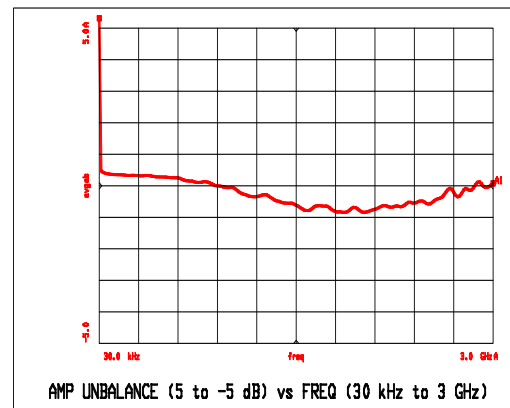
Input Impedance



Phase Unbalance



Amplitude Unbalance

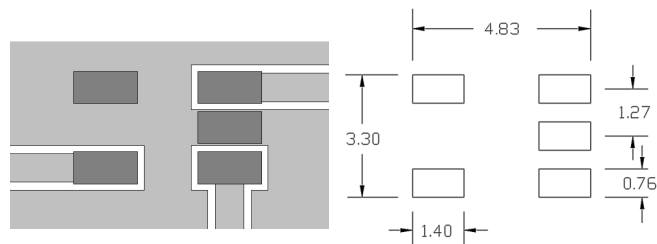


Full temperature plots available on request

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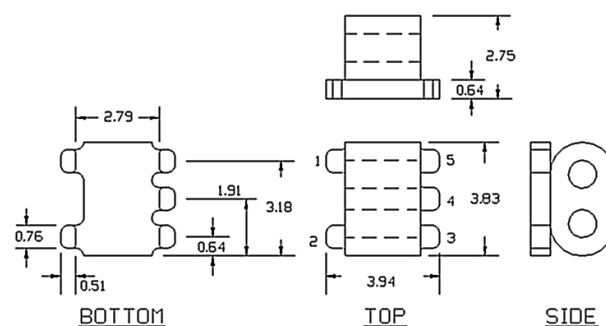
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Recommended Board Layout / Footprint²



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^{3,4,5,6}



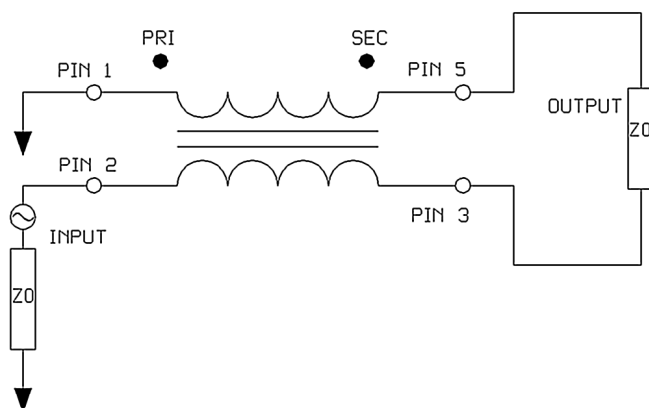
3. Dimensions in mm.

4. Tolerance: ± 0.2 mm unless otherwise noted.

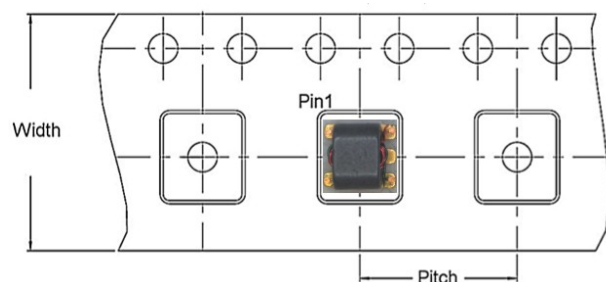
5. Model number and lot code are printed on the reel.

6. Lead finish: Sn.

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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