

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

Rev. V12

#### **Features**

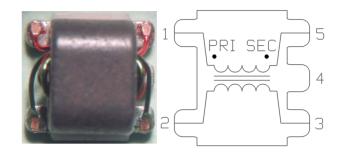
- Surface Mount
- 1:1 impedance ratio
- Available on Tape and Reel
- RoHS Compliant and Pb Free
- 260°C Reflow Compatible
- Available on Tape and Reel

### **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

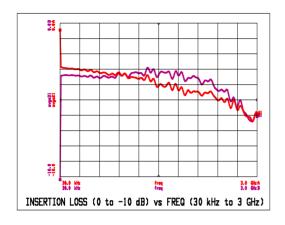


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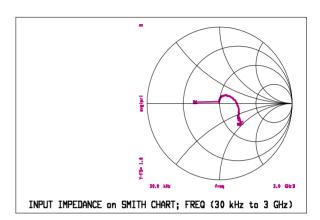
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## Typical Performance Curves: $T_A = 25^{\circ}C$ , $Z_0 = 50 \Omega$ , $P_{IN} = 0 \text{ dBm}$

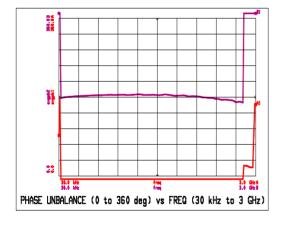
#### Insertion Loss



#### Input Impedance



#### Phase Unbalance



#### Amplitude Unbalance



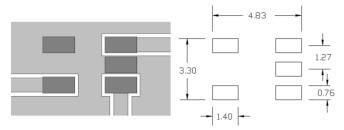
Full temperature plots available on request



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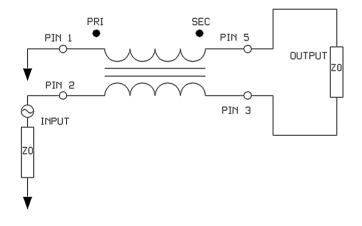
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## Recommended Board Layout / Footprint<sup>2</sup>

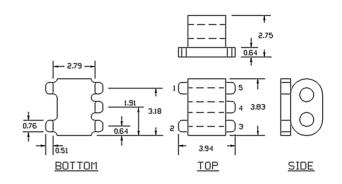


 Recommended PCB layout shown uses 0.8 mm FR4, grounded coplanar wave guide, transmission line width 0.90 mm and gap 0.25 mm.

## **Application Circuit**

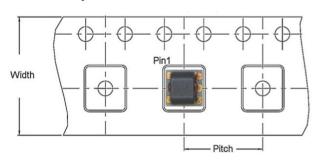


## Outline Drawing 3,4,5,6



- 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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