

ETC1-1-13



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

Rev. V11

Features

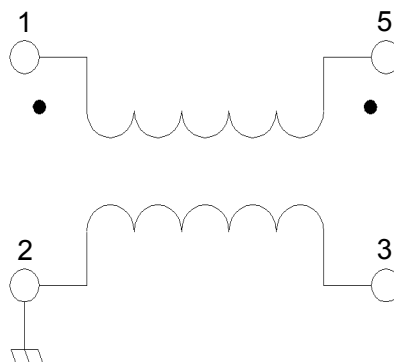
- Surface mount
- 1:1 Impedance ratio
- RoHS compliant
- 260°C reflow compatible
- Available on tape and reel

Description

MACOM's ETC1-1-13TR 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



Ordering Information

Part Number	Package
ETC1-1-13TR	Tape & Reel

Pin Configuration

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

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Electrical Specifications: $T_A = 25^\circ\text{C}$, $Z_0 = 50\ \Omega$, $P_{in} = 0\text{dBm}$

Parameter	Conditions	Units	Min	Typ	Max
Frequency Range		MHz	4.5		3000
Impedance		Ω		50	
Impedance Ratio				1:1	
Insertion Loss	4.5 - 1000 MHz	dB	-	0.32	1.0
	1000 - 2000 MHz	dB	-	-	2.0
	2000 - 3000 MHz	dB	-	-	3.5
Amplitude Balance	-	dB	-	-	± 1.0
Phase Balance	-	$^\circ$	-	-	± 20

Recommended Maximum Ratings

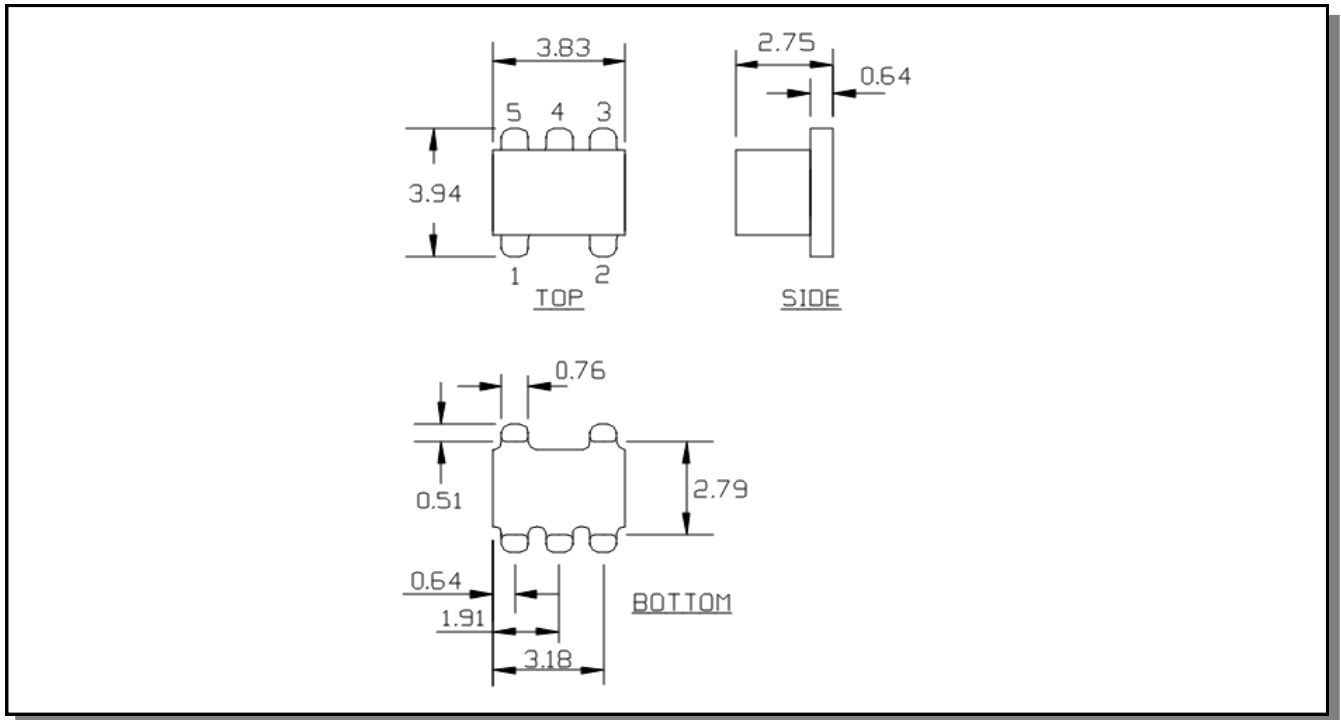
Parameter	Units	Min	Max
Input RF Power	mW		250
DC Current	mA		30
Operating Temperature Range	$^\circ\text{C}$	-55	+85

Full temperature plots available on request

Tape & Reel Information

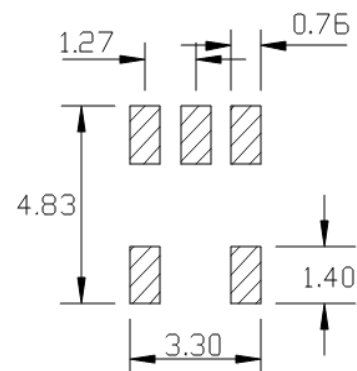
Parameter	Units	Value
Qty per reel	-	2000
Reel size	mm	330
Tape width (W)	mm	12.00
Pitch (P_1)	mm	8.00
A_0	mm	4.0
B_0	mm	4.0
K_0	mm	2.9
Orientation	-	F5
Reference Application note ANI-019 for orientation		

Outline Drawing



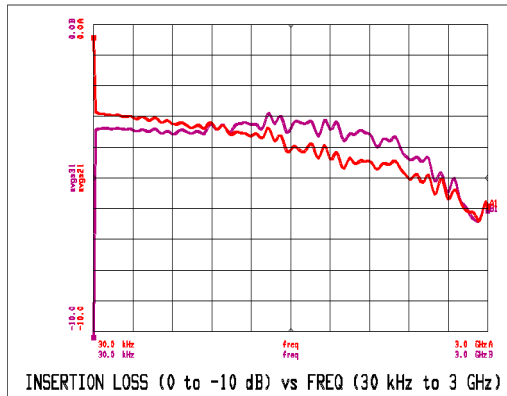
1. Dimensions in mm.
2. Tolerance: ± 0.2 mm unless otherwise noted.
3. Model number and lot code are printed on the reel.
4. Lead finish: Sn

PCB Layout

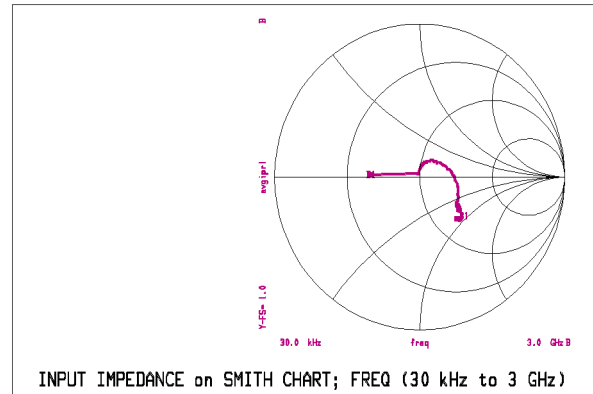


Typical Performance Curves

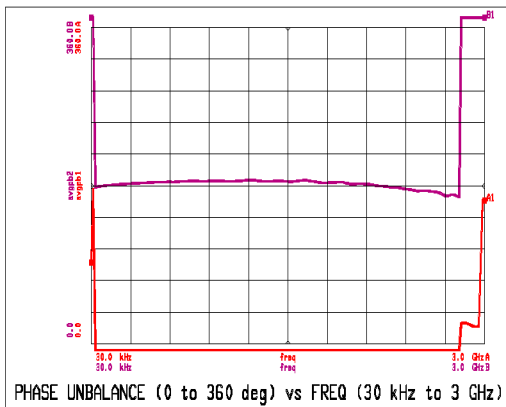
Insertion Loss



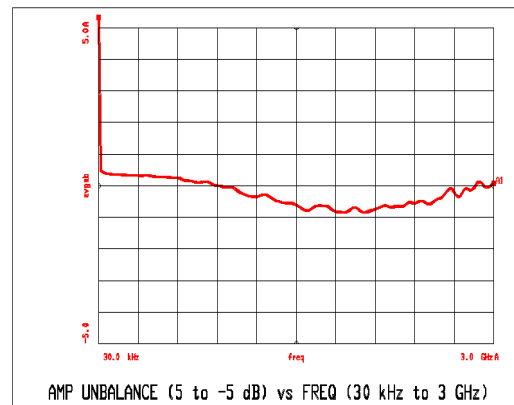
Input Impedance



Phase Unbalance



Amplitude Unbalance



Electrical Specifications: $Z_0 = 50\Omega$, $T_A = 25^\circ\text{C}$, $P_{in} = 0\text{dBm}$

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