

E-Series RF 1:4 Flux Coupled Step-up Transformer 2 - 800 MHz

Rev. V8

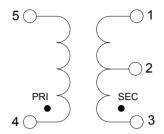
Features

- 1:4 Impedance Ratio
- · CT on Secondary
- Surface Mount
- Tape and Reel Packaging Available
- · RoHS Compliant, Pb Free
- Termination Finish Sn

Description

The ETC4-1-2 is a 1:4 RF flux coupled step-up transformer in a surface mount package. Ideally suited for high volume cellular and wireless applications. Typical applications include single to balanced mode conversion and impedance matching. Parts are packaged in tape & reel.

Functional Schematic



Pin Configuration²

Pin#	Function	Pin#	Function
1	Secondary	4	Primary dot
2	Secondary CT	5	Primary
3	Secondary Dot		

2. MACOM recommends connecting unused package pins to ground.

Electrical Specifications: Freq = 2 - 800 MHz, $T_A = 25^{\circ}$ C, $Z_0 = 50 \Omega$, $P_{IN} = 0 \text{ dBm}$

Parameter	Test Conditions & Frequency (MHz)	Units	Min.	Тур.	Max.
Insertion Loss	F _L —F _U 10 - 100 5 - 600 2 - 800	dB	_	 1.21 	1.0 2.0 3.0
Amplitude Balance	10 - 100 2 - 800	dB	_	_	0.25 1.0
Phase Balance	10 - 500 2 - 800	Degrees	_	_	2.0 10.0

Ordering Information¹

Part Number	Package	
ETC4-1-2TR	2000 piece reel	

1. Reference Application Note M513 for reel size information.

Recommended Maximum Ratings^{3,4}

Parameter	Absolute Maximum	
DC Power ⁵	250 mW	
DC Current	30 mA	
Operating Temperature	-55°C to +85°C	

- Exceeding anyone or combination of these limits may cause permanent damage to this device.
- MACOM does not recommend sustained operation near these survivability limits.
- 5. Specified at +25°C only.

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ETC4-1-2TR

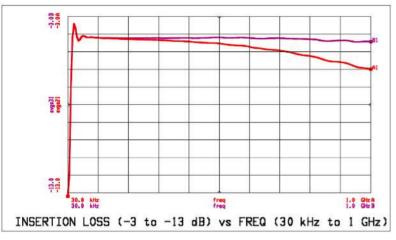


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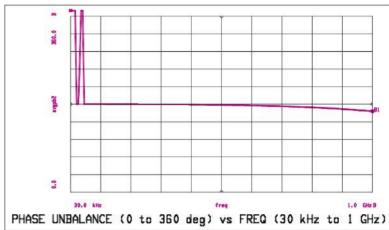
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Typical Performance Curves⁶: $T_A = 25^{\circ}C$, $Z_0 = 50 \Omega$, $P_{IN} = 0 dBm$

Insertion Loss



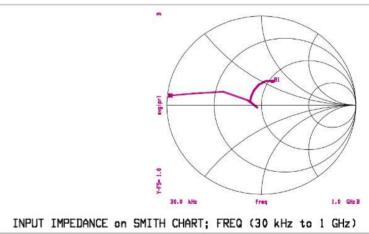
Phase Balance



Amplitude Balance



Input Impedance



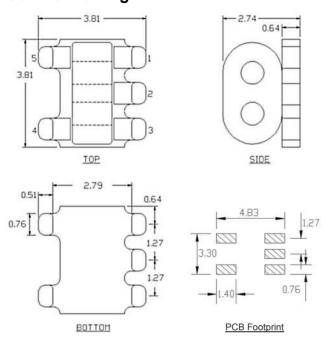
6. Full temperature plots available on request.



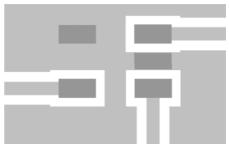
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Outline Drawing^{7,8,9,10}



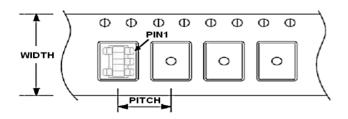
PCB Layout¹¹



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

- 7. Dimensions in mm.
- 8. Tolerance: ±0.2 mm unless otherwise noted.
- 9. Model number and lot code are printed on the reel.
- 10. Finish: Tin (Sn).

Carrier Tape Orientation



Tape & Reel Information

Parameter	Units	Value		
Qty per reel	-	2000		
Reel Size	mm	330		
Tape Width	mm	12.00		
Pitch	mm	8.00		
Orientation	-	F5		
Reference Application Note ANI-019 for orientation				

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