

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

Rev. V5

Features

- 1:1 Impedance ratio
- Surface mount
- Tape and reel packaging available

Description

M/A-COM's ETC1-1-13 is a 1:1 RF transmission line transformer in a low cost, surface mount package. Ideally suited for high volume cellular and wireless application. Parts are packaged in tape & reel

Product Image

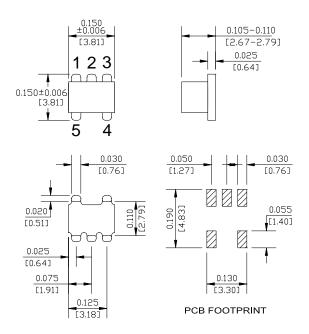


Ordering Information^{1,2}

Part Number	Package	
ETC1-1-13TR	2000 piece reel	

- 1. Reference Application Note M513 for reel size information.
- 2. All sample boards include 5 loose parts.

SM-22 package



Pin Configuration³

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

3. The exposed pad centered on the package bottom must be connected to RF and DC ground.

Absolute Maximum Ratings 4,5

Parameter	Absolute Maximum			
DC Power	250mW			
DC Current	30mA			
Operating Temperature	-40°C to +85°C			
Storage Temperature	-55°C to +125°C			

- 4. Exceeding any one or combination of these limits may cause permanent damage to this device.
- 5. M/A-COM does not recommend sustained operation near these survivability limits.
- * Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed. PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

- North America Tel: 800.366.2266 Europe Tel: +353.21.244.6400
- India Tel: +91.80.4155721 • China Tel: +86.21.2407.1588 Visit www.macomtech.com for additional data sheets and product information.

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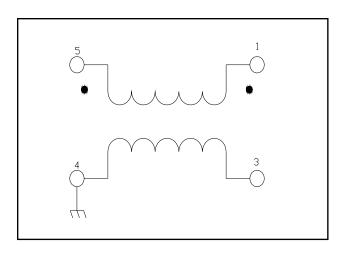
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Electrical Specifications: $T_A = 25$ °C, $V_{HIGH} = 3.0$ V, $V_{LOW} = 0$ V, $Z_0 = 50$ Ω

Parameter	Test Conditions	Test Conditions	Units	Min	Тур	Max
RF Frequency	-	4.5 - 3000	MHz	-	-	-
Insertion Loss	-	4.5 - 1000 1000 - 2000 2000 - 3000	dB dB dB	- - -	0.32 - -	1.0 2.0 3.5
Amplitude Unbalance	-	4.5 - 1000	dB	-	-	1.0
Phase Unbalance	-	4.5 - 1000	Degrees	-	-	20

6. External DC blocking capacitors are required on all RF ports (39 pF capacitors are recommended).

Schematic



[†] Reference Application Note M538 for lead-free solder reflow recommendations. Meets JEDEC moisture sensitivity level 1 requirements.

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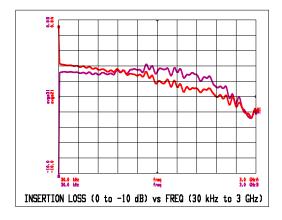


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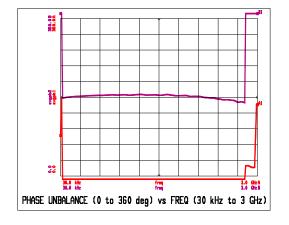
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Typical Performance Curves

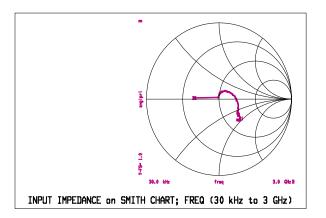
Insertion Loss



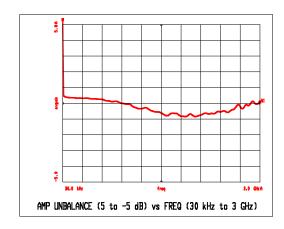
Phase Unbalance



Input Impedance



Amplitude Unbalance



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