

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

Rev. V7

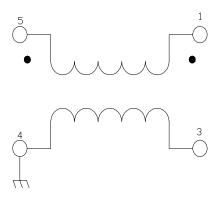
Features

- 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

Schematic



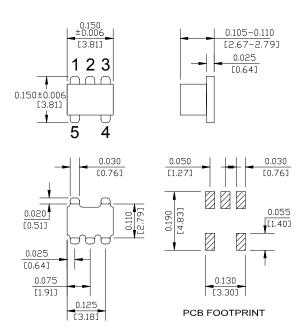
Product Image



Pin Configuration

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

SM-22 package



* Dimensions are inches (millimeters) ±0.015 (0.38) unless otherwise specified.

^{*} Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

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Visit www.macomtech.com for additional data sheets and product information.

ETC1-1-13TR



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Electrical Specifications: $T_A = 25^{\circ}C$, $V_{HIGH} = 3.0 \text{ V}$, $V_{LOW} = 0 \text{ V}$, $Z_0 = 50 \Omega^{-1}$

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

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

Absolute Maximum Ratings ^{2.3}

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

^{2.} Exceeding any one or combination of these limits may cause permanent damage to this device.

^{3.} M/A-COM does not recommend sustained operation near these survivability limits.

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



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Typical Performance Curves

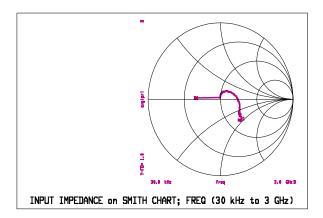
Insertion Loss



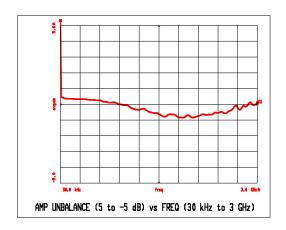
Phase Unbalance



Input Impedance



Amplitude Unbalance

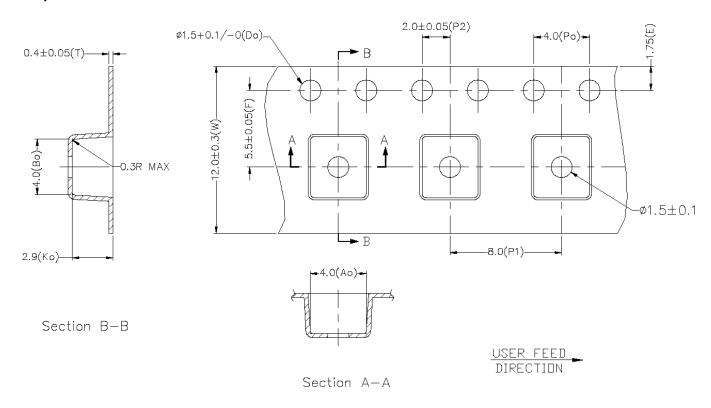




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Tape & Reel Information



Item	Dimension
Ao	4.00mm +/-0.1mm
Во	4.00mm +/-0.1mm
Ko	2.9mm +/-0.1mm
W	12.00mm +/-0.3mm
P1	8.00mm +/-0.1mm

Ordering Information

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

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

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.

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