ETC1-1-13 V5



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

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}

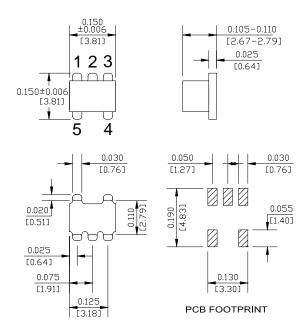
Part Number	Package	
ETC1-1-13TR	2000 piece reel	

1. Reference Application Note M513 for reel size information.

2. All sample boards include 5 loose parts.

1

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

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

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

Downloaded from Elcodis.com electronic components distributor

• India Tel: +91.80.4155721 • China Tel: +86.21.2407.1588

Rev. V5

ETC1-1-13 V5



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

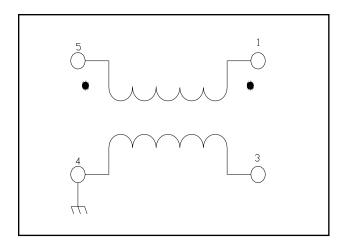
Rev. V5

Electrical Specifications: $T_A = 25^{\circ}C$, $V_{HIGH} = 3.0 V$, $V_{LOW} = 0 V$, $Z_0 = 50 \Omega^{6}$

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.

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.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

²

ETC1-1-13 V5

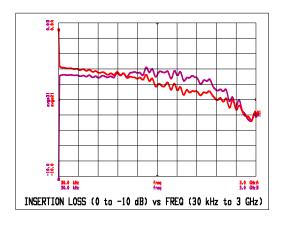


Rev. V5

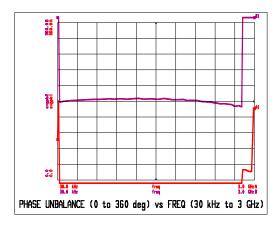
E-Series RF 1:1 Transmission Line Transformer 4.5 - 3000 MHz

Typical Performance Curves

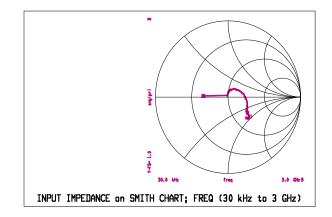
Insertion Loss



Phase Unbalance



Input Impedance



Amplitude Unbalance



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.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

3