

# ETC4-1-2TR



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

Rev. V4

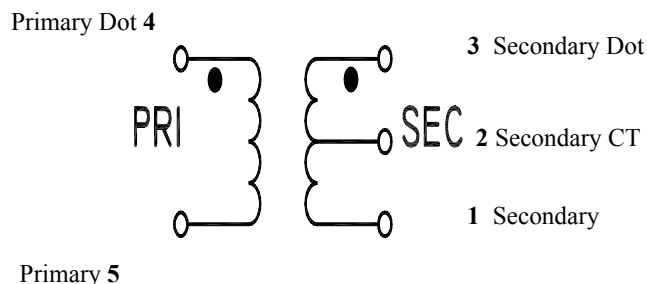
### Features

- 1:4 Impedance Ratio
- CT on Secondary
- Surface Mount
- Tape and reel packaging available

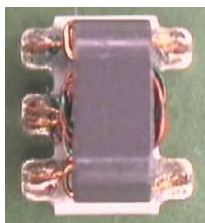
### Description

M/A-COM's ETC4-1-2 is a 1:4 RF flux coupled step-up transformer in a low cost, 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.

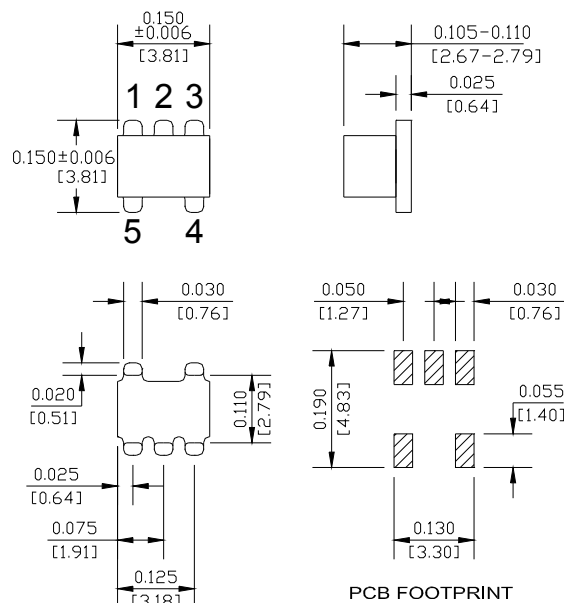
### Schematic



### Product Image



### SM-22 package



### Pin Configuration

Pin No.	Function
1	Secondary
2	Secondary CT
3	Secondary Dot
4	Primary Dot
5	Primary

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

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

Electrical Specifications:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 50\Omega$ <sup>1</sup>

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
RF Frequency	—	2 - 800	MHz	—	—	—
Insertion Loss	$F_L - f_U$	10 - 100	dB	—	—	1.0
		5 - 600	dB	—	1.21	2.0
		2 - 800	dB	—	—	3.0
Amplitude Unbalance	—	10 - 100	dB	—	—	0.25
		2 - 800	dB	—	—	1.0
Phase Unbalance	—	10 - 500	Degrees	—	—	2.0
		2 - 800	Degrees	—	—	10.0

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

### Absolute Maximum Ratings<sup>4,5</sup>

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

- Exceeding any one or combination of these limits may cause permanent damage to this device.
- 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.

# ETC4-1-2TR

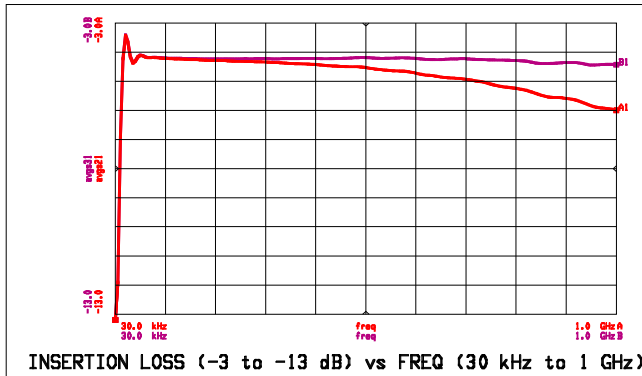


E-Series RF 1:4 Flux Coupled Step-up Transformer  
2 – 800 MHz

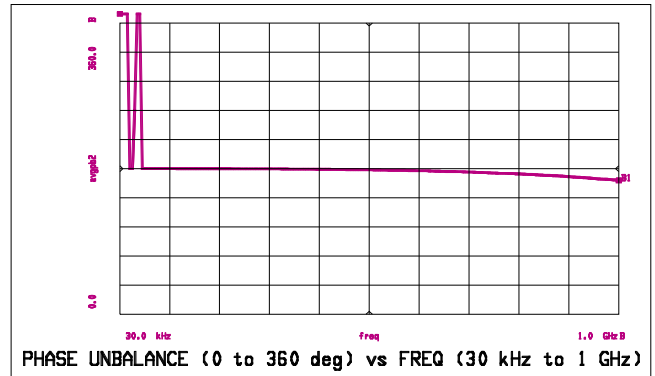
Rev. V4

## Typical Performance Curves

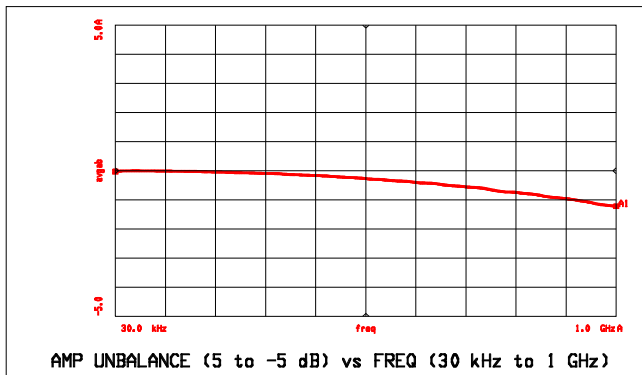
### Insertion Loss



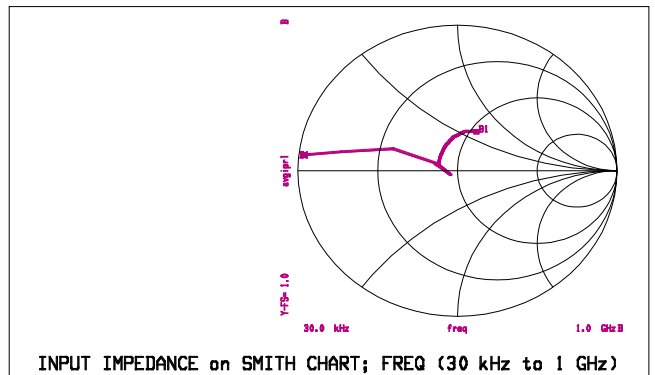
### Phase Unbalance



### Amplitude Unbalance



### Input Impedance



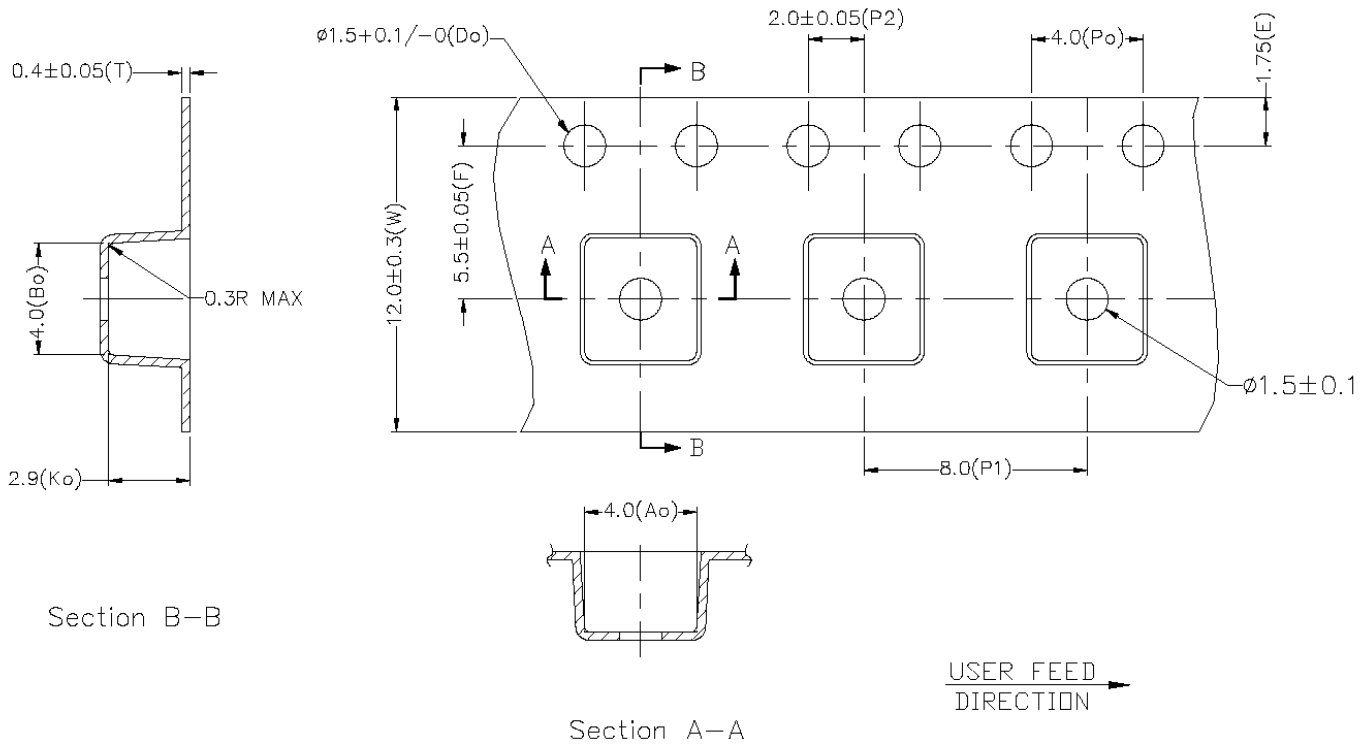
**ADVANCED:** Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

**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.

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### Tape & Reel Information



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

### Ordering Information

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

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