

## 1:1 Flux Coupled Transformer 3 - 200 MHz

Rev. V6

### Features

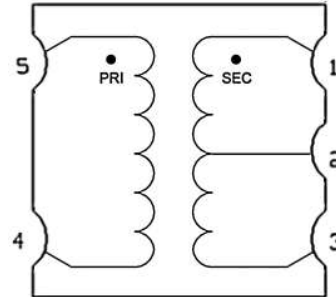
- 1:1 Flux Coupled Transformer
- Surface Mount Package
- Centre Tap on Secondary
- Tape and Reel Packaging Available
- 260° Reflow Compatible

### Description

The MABACT0071 is a RoHS compliant 1:1 RF flux coupled transformer in a surface mount package.

Ideally suited for all CATV, Broadband applications.

### Schematic



### Pin Configuration<sup>3</sup>

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

3. MACOM recommends connecting all No Connection (N/C) pins to ground.

### Electrical Specifications: Freq. = 3 - 200 MHz, T<sub>A</sub> = 25°C, Z<sub>0</sub> = 75 Ω, P<sub>IN</sub> = 0 dBm

Parameter	Freq. Test Conditions (MHz)	Units	Min.	Typ.	Max.
Insertion Loss (pin 5-1)	3 - 5	dB	—	1.0	2.6
	5 - 200			0.5	0.9
Insertion Loss (pin 5-3)	3 - 10	dB	—	1.0	2.6
	10 - 200			0.4	0.75
Amplitude Balance	3 - 200	dB	—	0.1	±0.3
Phase Balance	3 - 200	°	—	0.3	±3.0
Input Return Loss	3 - 5	dB	5	13	—
	5 - 120		19	27	
	120 - 200		15	21	

### Ordering Information<sup>1,2</sup>

Parameter	Package
MABACT0071	2000 piece reel
MABACT0071-TB	Sample Board

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

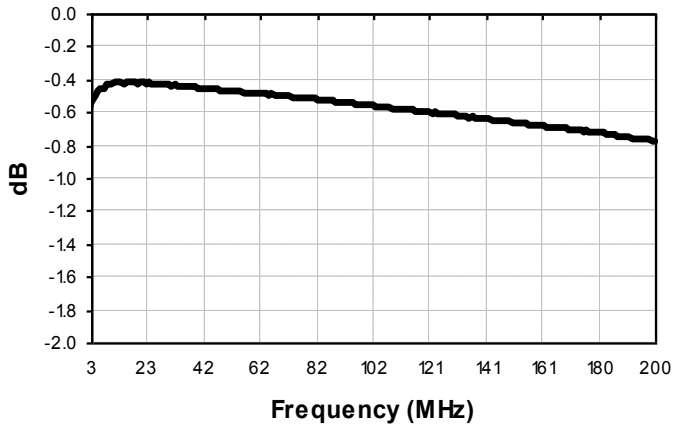
### Absolute Maximum Ratings<sup>4,5</sup>

Parameter	Absolute Maximum
RF Power <sup>6</sup>	250 mW
DC Current	240 mA
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C

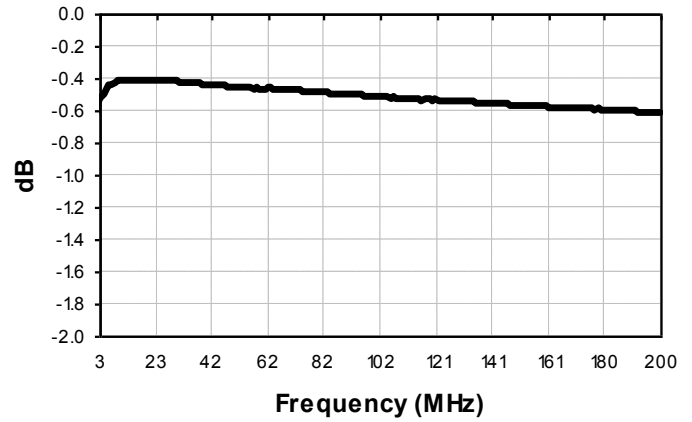
4. Exceeding any one or combination of these limits may cause permanent damage to this device.
5. MACOM does not recommend sustained operation near these survivability limits.
6. Specified at 25°C only.

## Typical Performance Curves<sup>7</sup>

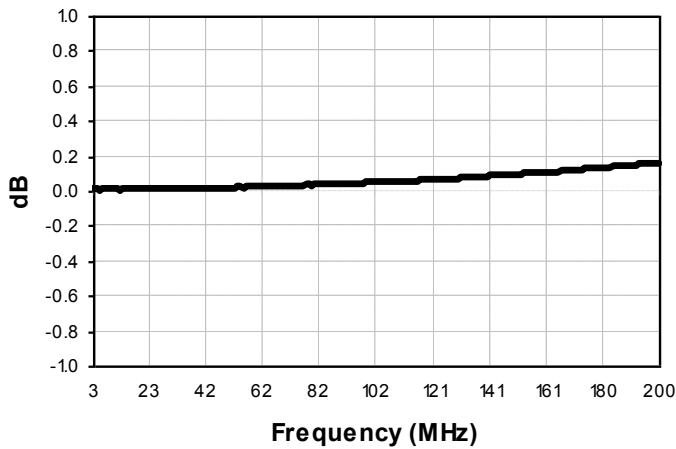
**Insertion Loss: (pin5 - pin1)**



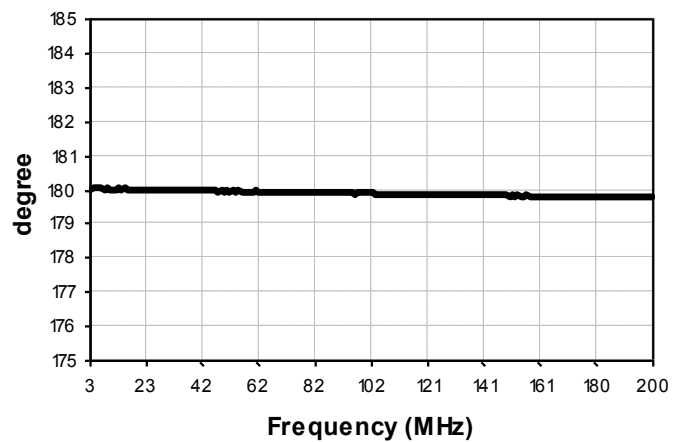
**Insertion Loss: (pin5 - pin3)**



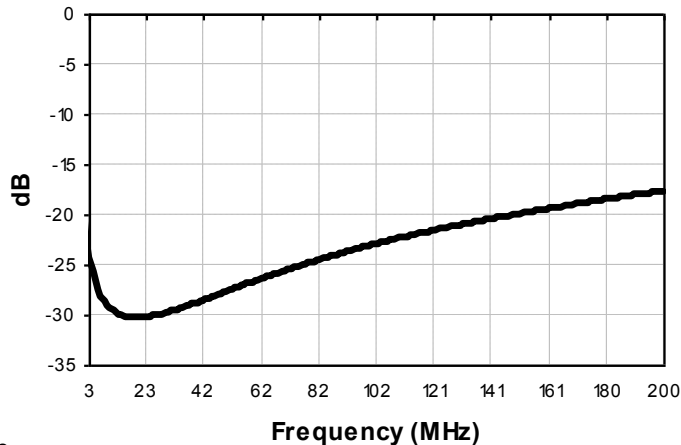
**Amplitude Balance**



**Phase Balance**

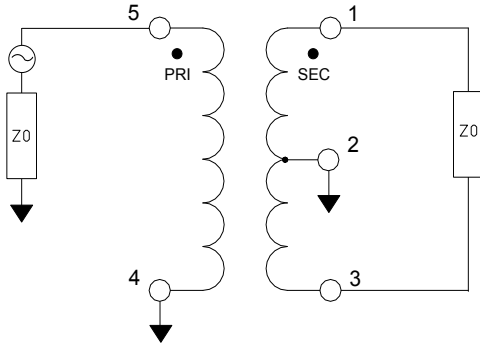


**Return Loss: Input (pin5)**

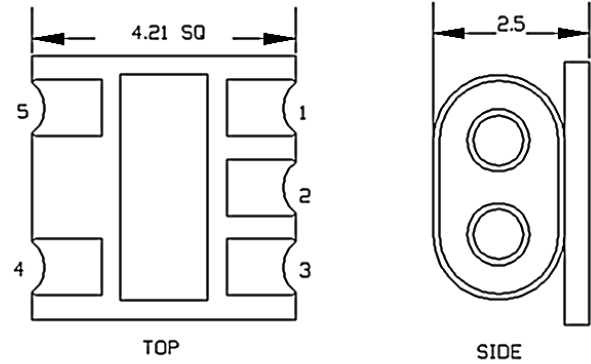


7. Temperature plots available on request.

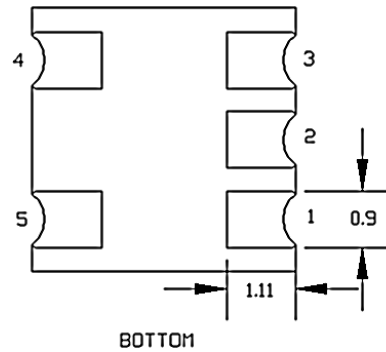
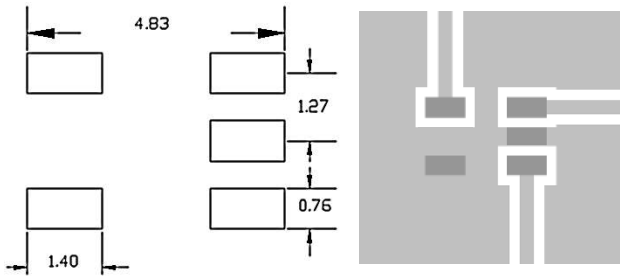
## Application Circuit



## Outline Drawing<sup>10,11,12,13</sup>



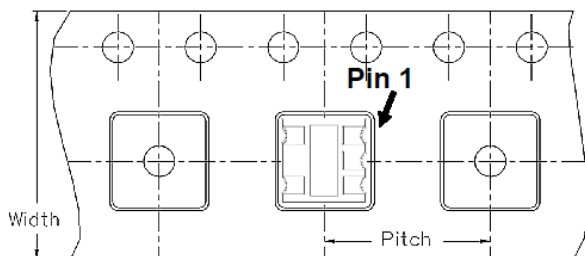
## PCB Layout<sup>8,9</sup>



- 8. Recommended PCB layout shown above uses 1.6 mm FR4.
- 9. Grounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.

- 10. Dimensions in mm.
- 11. Tolerance:  $\pm 0.2$  mm unless otherwise noted.
- 12. Model number and lot code printed on reel.
- 13. Plating finish: ENIG

## Carrier Tape Orientation



## Tape and Reel Information

Item	Dimension (mm)
Qty Per Reel	2000
Tape Width	12
Pitch	8
Orientation	F5
Reference Application note ANI-019 for orientation	

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