

RF 1:1 Flux Coupled Transformer 0.3 - 200 MHz

Rev. V8

Features

- Surface Mount
- 1:1 impedance
- Available on Tape and Reel
- RoHS Compliant and Lead free
- 260°C Reflow Compatible

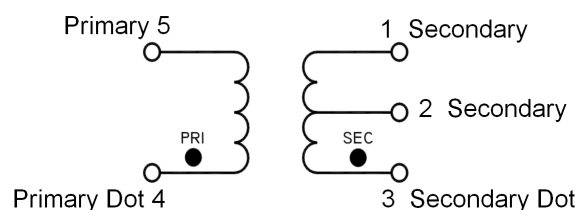
Description

MABAES0060 is a RoHS compliant device that is equivalent to the ETC1-1T transformer. This device is a 1:1 RF flux coupled transformer in a low cost, SM-22 surface mount package and is designed to be utilized in both standard reflow and high temperature soldering

Ideally suited for high volume cellular and wireless applications. Typical applications include single to balanced mode conversion and impedance matching.



Functional Schematic



Ordering Information

Part Number	Package
MABAES0060	Tape & Reel

Pin Configuration

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

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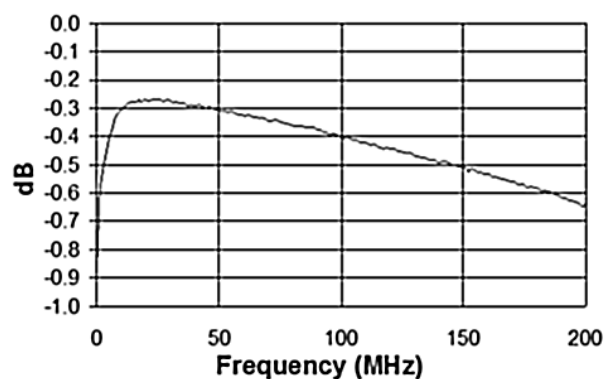
Rev. V8

Electrical Specifications: Freq. = 0.3 - 200 MHz, $T_A = 25^\circ\text{C}$, $Z_0 = 50\ \Omega$, $P_{in} = 0\ \text{dBm}$

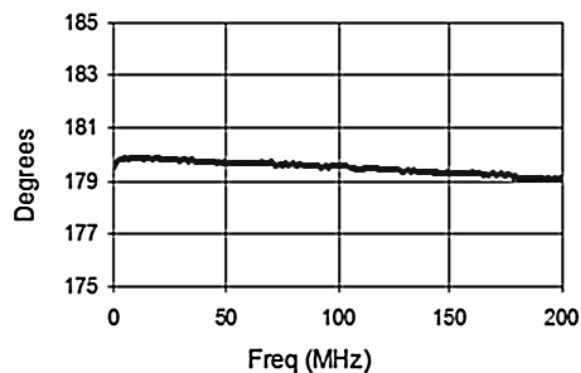
Parameter	Test Conditions	Units	Min.	Typ.	Max.
Insertion Loss	0.3 - 200 MHz	dB	—	—	1.5
Amplitude Balance	0.3 - 50 MHz 0.3 - 200 MHz	dB	—	—	0.1 0.5
Phase Balance	0.3 - 50 MHz 0.3 - 200 MHz	Degrees	—	—	1.0 5.0
Input Return Loss	0.3 - 200 MHz 5 - 120 MHz	dB	—	—	10.0 15.0

Typical Performance Curves

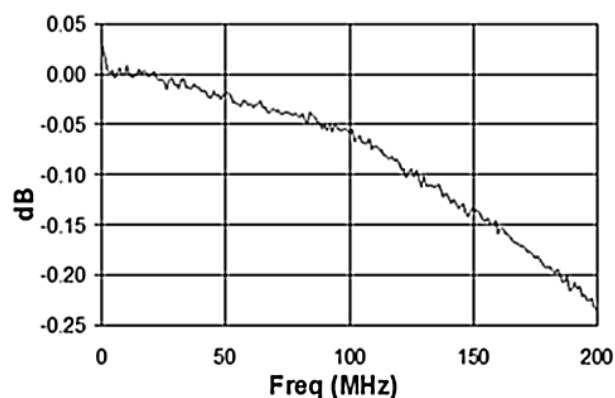
Insertion Loss



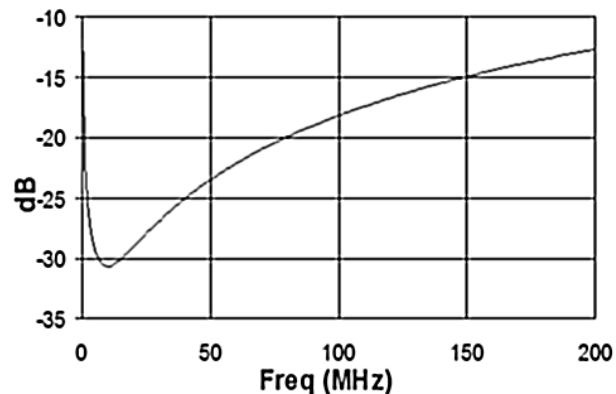
Phase Unbalance



Amplitude Unbalance



Input Return Loss



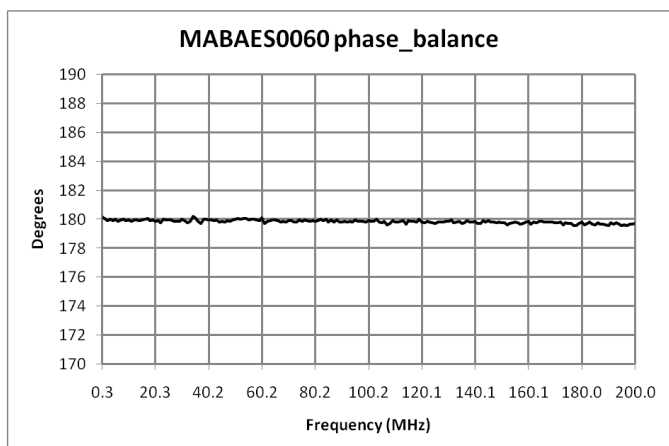
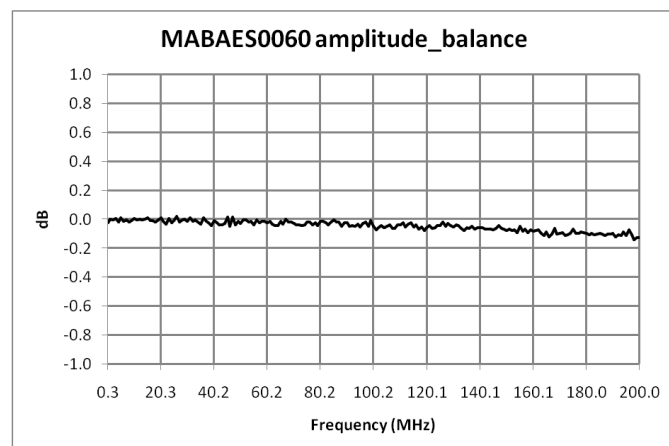
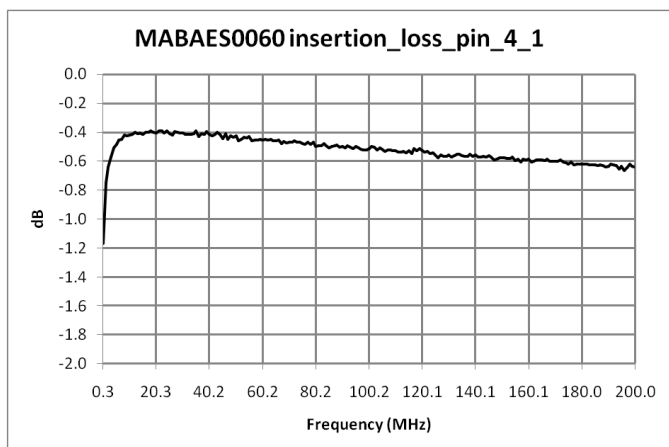
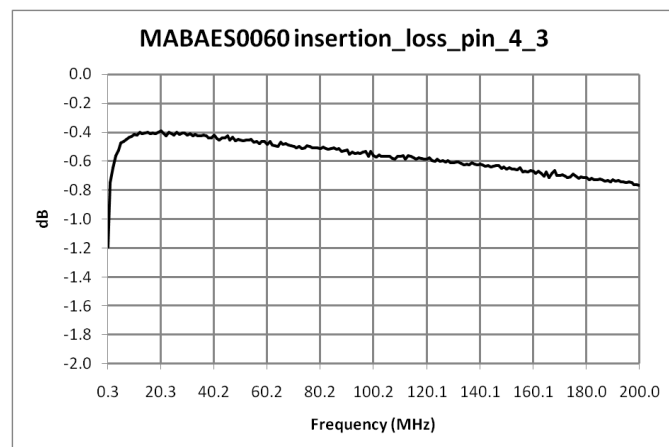
RF 1:1 Flux Coupled Transformer 0.3 - 200 MHz

Rev. V8

Electrical Specifications: Freq. = 0.3 - 200 MHz, $T_A = 25^\circ\text{C}$, $Z_0 = 75\ \Omega$, $P_{in} = 0\ \text{dBm}$

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Insertion Loss	0.3 - 5 MHz 5 - 200 MHz	dB	—	—	1.7 0.9
Amplitude Balance	0.3 - 50 MHz 0.3 - 200 MHz	dB	—	—	0.1 0.5
Phase Balance	0.3 - 50 MHz 0.3 - 200 MHz	Degrees	—	—	2.0 5.0
Input Return Loss	0.3 - 5 MHz 5 - 120 MHz 120 - 200 MHz	dB	7 19 15	—	—

Typical Performance Curves



RF 1:1 Flux Coupled Transformer
0.3 - 200 MHz

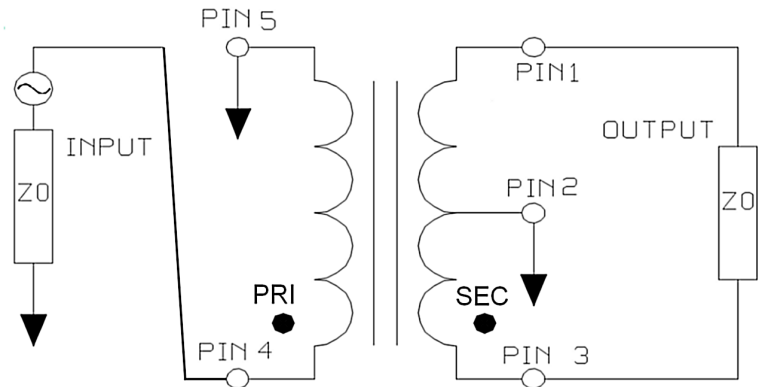
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Absolute Maximum Ratings^{1,2}

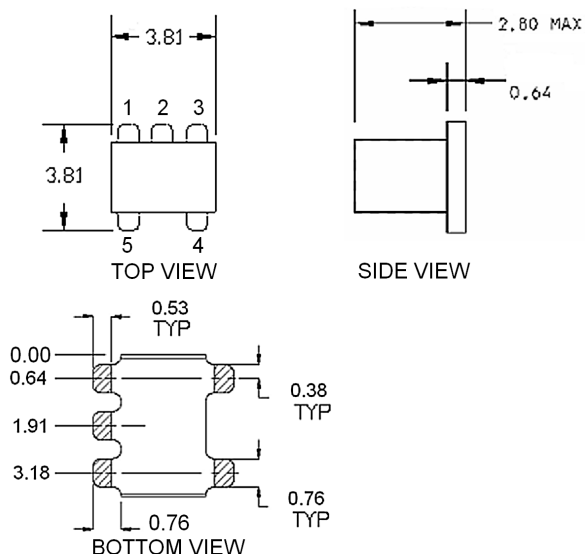
Parameter	Units
Input RF Power	500 mW
DC Current	500 mA
Operating Temperature	-40°C to +85°C

1. Exceeding any one or combination of these limits may cause permanent damage to this device.
2. The maximum DC current applies to the secondary center tap in applications where the secondary is balanced.

Application Schematic



Outline Drawing



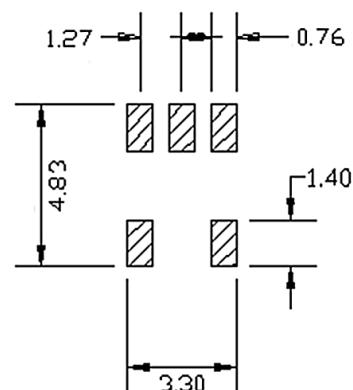
Dimensions in mm.

Tolerance: ± 0.38 mm unless otherwise noted.

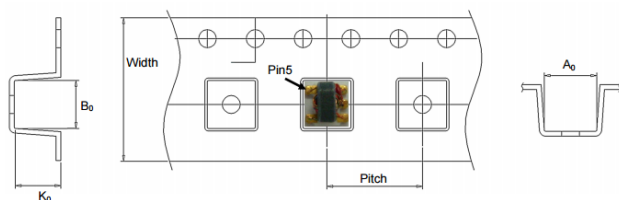
Model number and lot code are printed on the reel.

Lead plating: ENIG on both sides, 0.05 to 0.1 μ m gold over 3 to 6 μ m nickel.

PCB Layout



Carrier Tape Orientation



Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	2000
Reel Size	mm	330
Tape Width	mm	12
Pitch	mm	8
Orientation	-	F5
Reference Application Note ANI-019 for orientation		

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