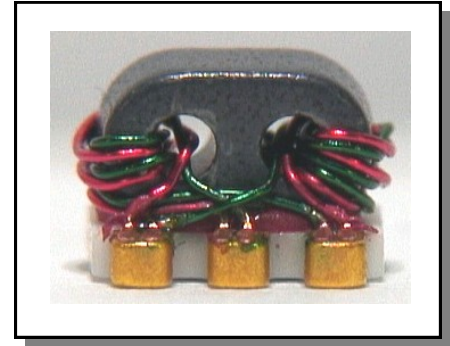


1:1 Transmission Line Transformer with center tap 5 - 1000 MHz

V2

Features

- 1:1 impedance
- Surface mount
- Centre tap on secondary
- 260° reflow compatible
- RoHS Compliant and Pb free
- Available on tape and reel



Description

MACOM's MABA-011016 is a 1:1 RF Transmission Line transformer in a low cost, surface mount package. Excellent return loss. Ideally suited for high volume wireless applications.

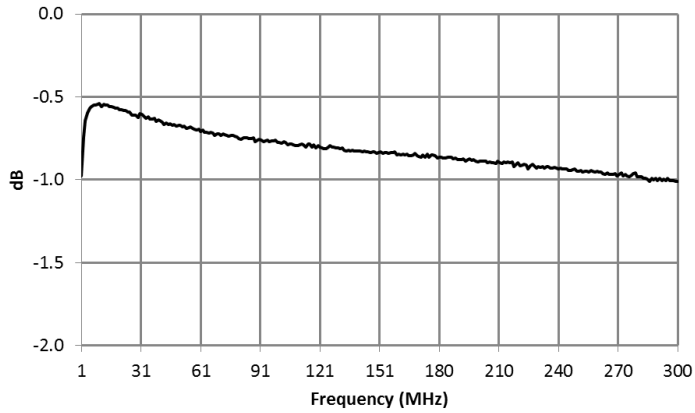
Electrical Specifications: $Z_0 = 50\Omega$, $T_A = 25^\circ\text{C}$, $P_{in} = 0\text{dBm}$

| Parameter | Conditions | Units | Min | Typ | Max |
|-----------------------------------|----------------|----------|-----|------|------|
| Frequency Range | | MHz | 5 | | 1000 |
| Impedance | | Ω | | 50 | |
| Impedance Ratio | | | | 1:1 | |
| Insertion Loss 1 (Pin5 - Pin1) | 5 - 870 MHz | dB | - | 0.8 | 1.6 |
| | 870 - 1000 MHz | dB | - | 1.2 | 1.8 |
| Insertion Loss 2 (Pin5 - Pin3) | 5 - 630 MHz | dB | - | 0.7 | 1.2 |
| | 630 - 1000 MHz | dB | - | 1.0 | 1.5 |
| Amplitude Balance | 5 - 500 MHz | dB | - | 0.02 | 0.5 |
| | 500 - 1000 MHz | dB | - | 0.01 | 0.7 |
| Phase Balance | 5 - 500 MHz | $^\circ$ | - | 1.5 | 6.0 |
| | 500 - 1000 MHz | $^\circ$ | - | 2.2 | 8.0 |
| Input Return Loss (Pin5) | 5 - 300 MHz | dB | 16 | 24 | - |
| | 300 - 750 MHz | dB | 10 | 16 | - |
| | 750 - 1000 MHz | dB | 8 | 13 | - |

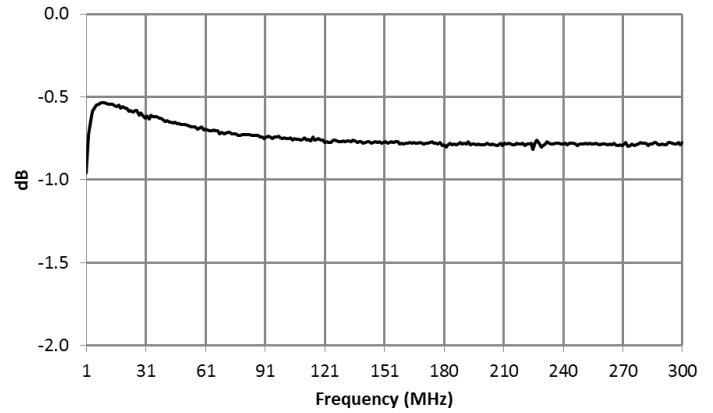
1:1 Transmission Line Transformer with center tap 5 - 1000 MHz

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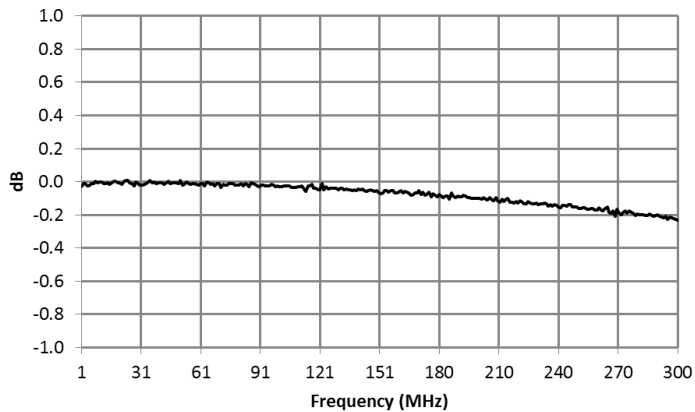
Insertion loss 1 (Pin2-5)



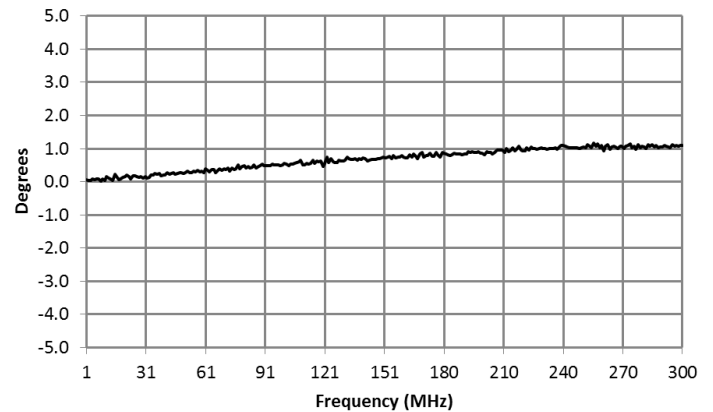
Insertion loss 2 (Pin2-3)



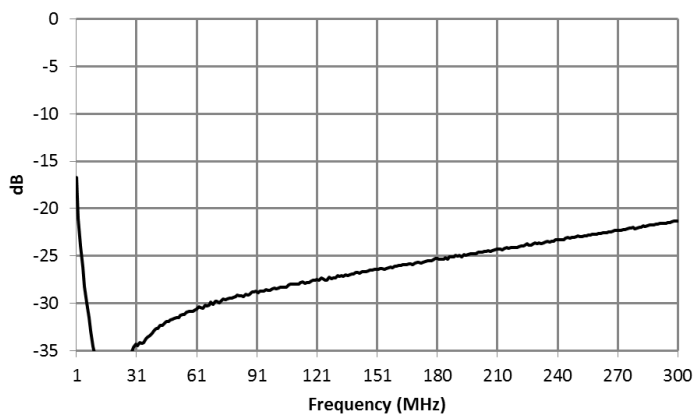
Amplitude balance



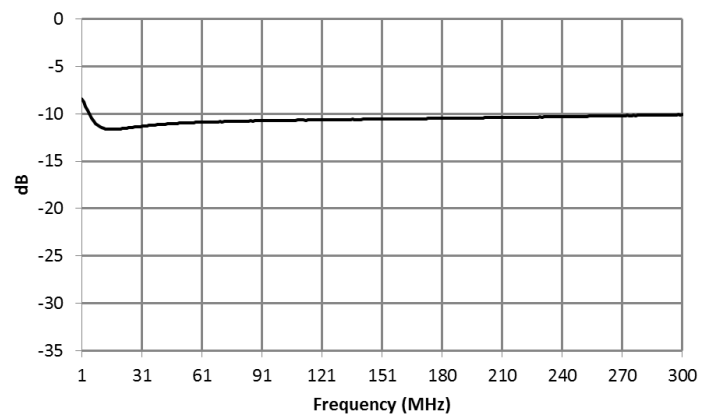
Phase balance



Input return loss (Pin2)



Balanced output return loss (Pin3-5)

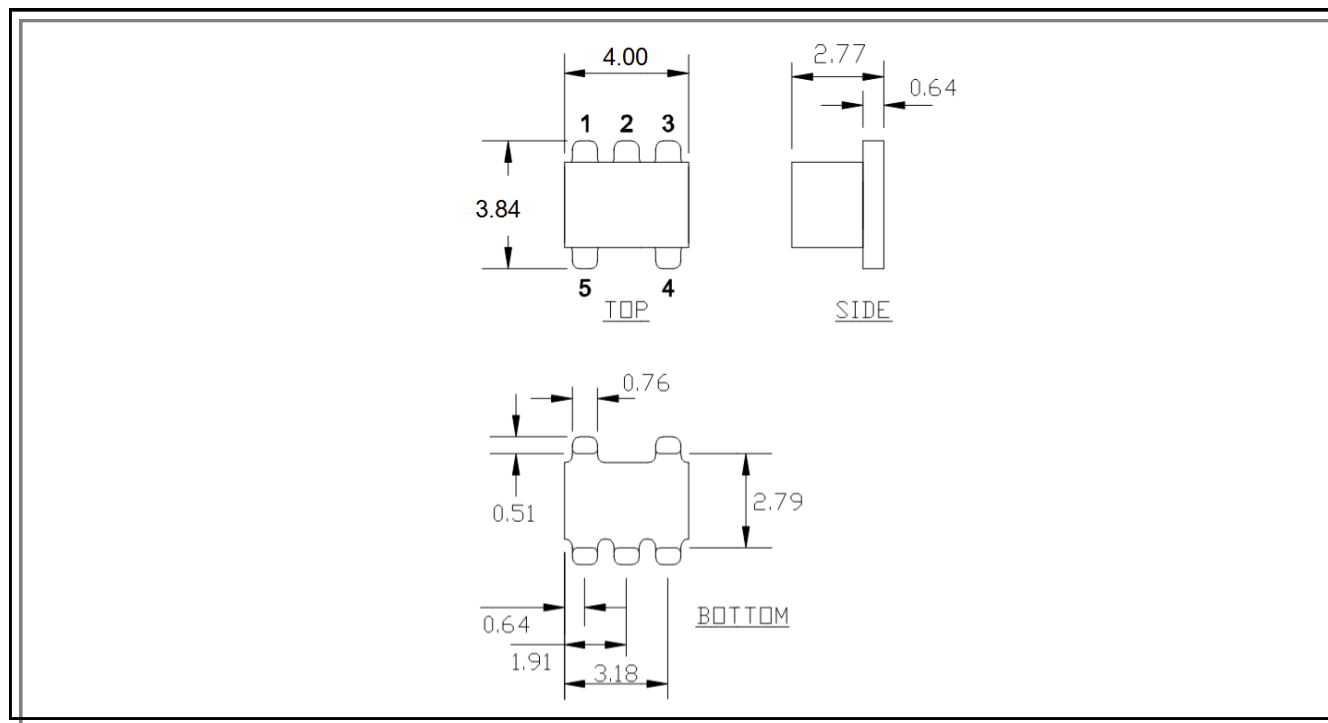


Electrical Specifications: $Z_0 = 50\Omega$, $T_A = 25^\circ\text{C}$, $P_{in} = 0\text{dBm}$

1:1 Transmission Line Transformer with center tap 5 - 1000 MHz

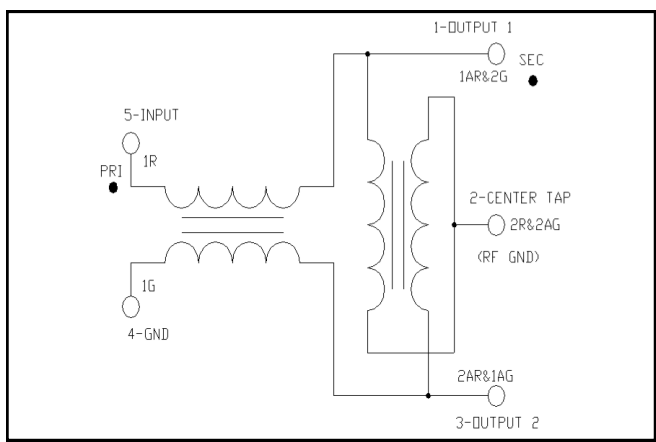
V2

Outline Drawing

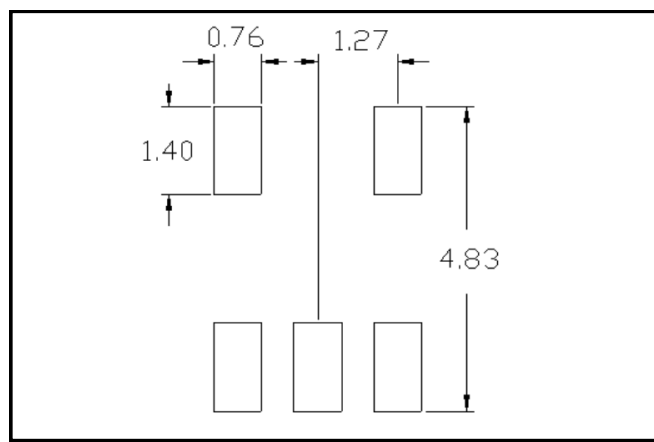


1. Dimensions in mm.
2. Tolerance: ± 0.2 mm unless otherwise noted.
3. Model number and lot code are printed on the reel.
4. Finish: Electroless nickel immersion gold (ENIG)

Schematic



Recommended Footprint



1:1 Transmission Line Transformer with center tap 5 - 1000 MHz

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Tape & Reel Information

| Parameter | Units | Value |
|--|-------|-------|
| Qty per reel | - | 2000 |
| Reel Size | mm | 330 |
| Tape Width | mm | 12.00 |
| Pitch | mm | 8.00 |
| Ao | mm | 4.20 |
| Bo | mm | 4.50 |
| Ko | mm | 3.20 |
| Orientation | - | F5 |
| Reference Application Note ANI-019 for orientation | | |

Ordering Information

| Part Number | Description |
|----------------|---------------------|
| MABA-011016 | Tape & Reel |
| MABA-011016-TB | Customer test board |

Recommended Maximum Ratings

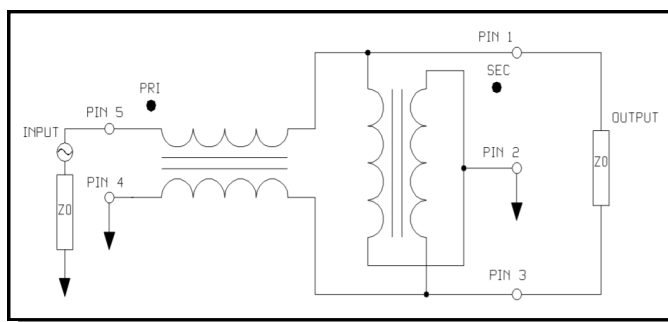
| Parameter | Units | Min | Max |
|-----------------------------|-------|-----|-----|
| Input Power | mW | | 250 |
| DC Current | mA | | 240 |
| Operating Temperature Range | °C | -40 | +85 |

Full temperature plots available on request

Pin Configuration

| Pin No. | Function |
|---------|-------------------------------|
| 1 | Secondary Dot (output 1) |
| 2 | Secondary Centre Tap (ground) |
| 3 | Secondary (output 2) |
| 4 | Primary (ground) |
| 5 | Primary Dot (input) |

Application circuit



1:1 Transmission Line Transformer with center tap 5 - 1000 MHz

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