

4:1 Step Down Balun Transformer 5 - 200 MHz

Rev. V3

Features

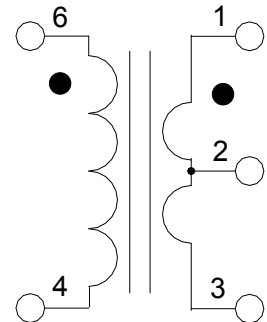
- Surface Mount Package
- 4:1 Step Down Transformer
- Excellent performance under DC bias current, also when current flows is imbalanced through outputs
- 260°C Reflow Compatible
- RoHS* Compliant, lead free
- Available on Tape and Reel.

Description

The MABA-011002 is a 4:1 step down balun transformer.

This transformer is ideally suited for CATV Broadband applications.

Functional Schematic



Pin Configuration

| Pin # | Function |
|-------|-------------------------|
| 1 | Secondary Dot (output1) |
| 2 | Ground (center tap) |
| 3 | Secondary (output2) |
| 4 | Primary (RF ground) |
| 5 | Ground (not used) |
| 6 | Primary dot (input) |

Electrical Specifications: Freq. = 5 - 200 MHz, T_A = +25°C, Z₀ = 75 Ω, P_{IN} = 0 dBm

| Parameter | Frequency Test Conditions (MHz) | Units | Min. | Typ. | Max. |
|-----------------------------------|---------------------------------|-------|------|------|------|
| Impedance Ratio | — | ratio | — | 4:1 | — |
| Insertion Loss (pin 6 - pin 1) | 5 - 50 | dB | — | 0.4 | 0.8 |
| | 50 - 150 | | | 1.0 | 2.2 |
| | 150 - 200 | | | 2.0 | 3.1 |
| Insertion Loss (pin 6 - pin 3) | 5 - 50 | dB | — | 0.4 | 0.8 |
| | 50 - 150 | | | 1.1 | 2.5 |
| | 150 - 200 | | | 2.4 | 3.6 |
| Amplitude Balance | 5 - 50 | dB | — | 0.0 | ±0.4 |
| | 50 - 150 | | | 0.0 | ±1.0 |
| | 150 - 200 | | | 0.3 | ±1.4 |
| Phase Balance | 5 - 50 | ° | — | 0.6 | ±4 |
| | 50 - 200 | | | 0.8 | ±9 |
| | | | | | |
| Input Return Loss (pin 6) | 5 - 25 | dB | 17 | 20 | — |
| | 25 - 50 | | 12 | 15 | |
| | 50 - 150 | | 5 | 9 | |
| | 150 - 200 | | 3 | 5 | |

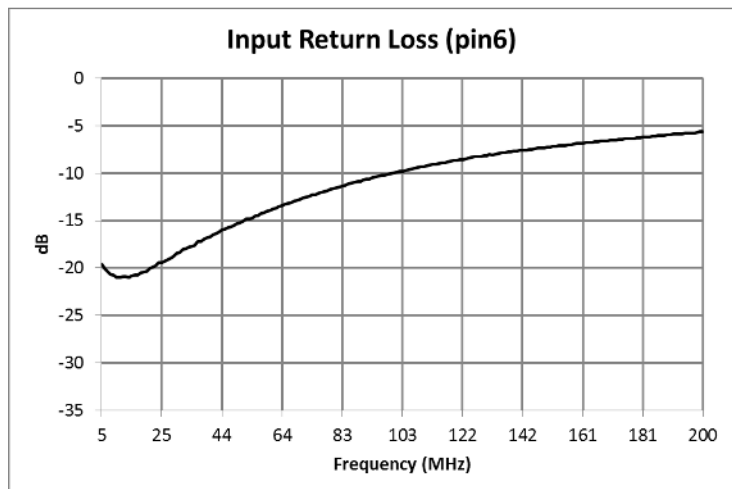
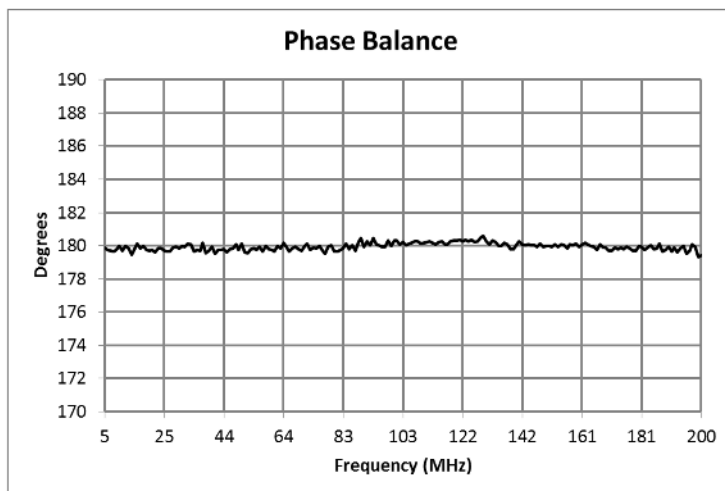
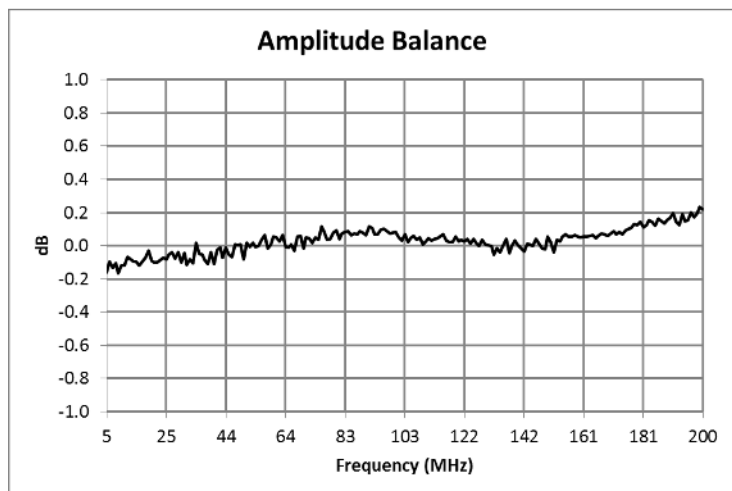
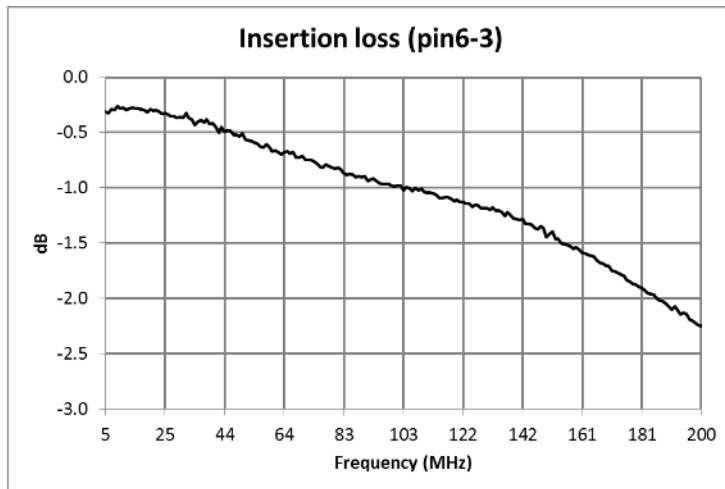
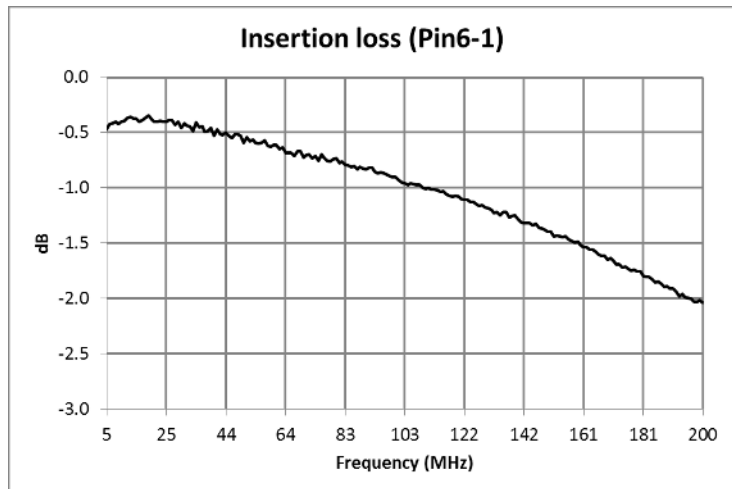
Ordering Information

| Part Number | Description |
|----------------|---------------------------|
| MABA-011002 | 900 piece reel |
| MABA-011002-TB | Customer Evaluation Board |

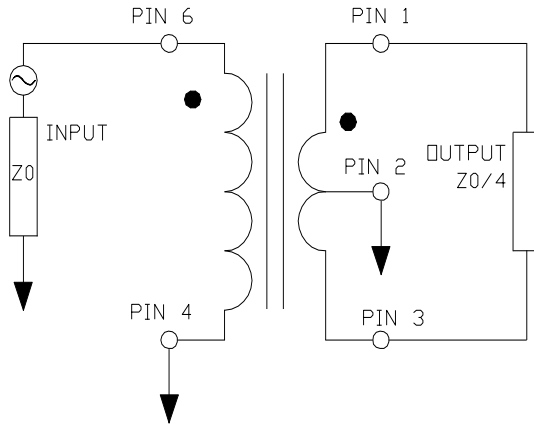
Recommended Maximum Ratings

| Parameter | Units |
|---------------------------|---------------|
| Input RF Power | 1 W |
| Internal Load Dissipation | 0.125 W |
| DC Bias Current | >900 mA |
| Operating Temperature | -40°C - +85°C |

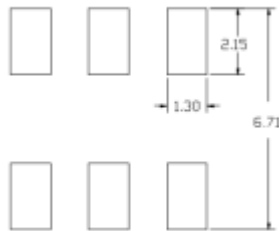
Typical Performance Curves



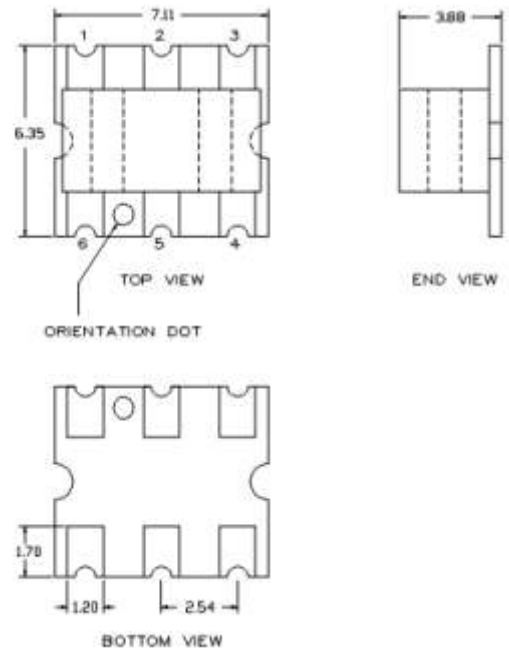
Application Circuit



PCB Layout



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. Lead plating: ENIG.

Tape & Reel Information

| Parameter | Units | Value |
|--|-------|-------|
| Qty per reel | - | 900 |
| Reel Size | mm | 330 |
| Tape Width | mm | 16.00 |
| Pitch | mm | 12.00 |
| Ao | mm | 6.60 |
| Bo | mm | 7.40 |
| Ko | mm | 4.10 |
| Orientation | - | F38 |
| Reference Application Note ANI-019 for orientation | | |

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