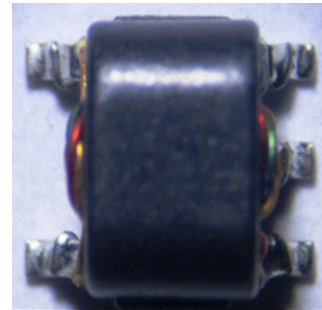


Balun transformer, 4:1 step down flux coupled 5 – 300 MHz

Rev. V1

Features

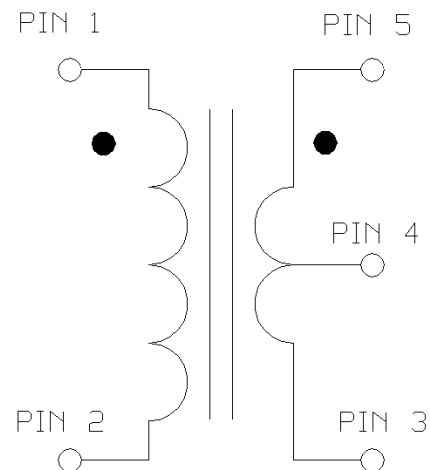
- 4:1 impedance
- Surface mount
- Available on tape and reel
- 260° reflow compatible
- RoHS compliant and Pb free
- Excellent temperature stability
- Suitable for all CATV, Broadband and FTTX applications



Description

MACOM's MABA-011064 is a 4:1 flux coupled transformer. This transformer is ideally suited for DOCSIS 3.x upstream applications due to its high power and temperature performance.

Functional Schematic



Ordering Information

| Part Number | Package |
|----------------|---------------------|
| MABA-011064 | Tape & Reel |
| MABA-011064-TB | Customer Test Board |

Pin Configuration

| Pin No. | Function |
|---------|-------------------------|
| 1 | Primary Dot (input) |
| 2 | Primary (ground) |
| 3 | Secondary (output2) |
| 4 | Center tap (ground) |
| 5 | Secondary Dot (output1) |

**Balun transformer, 4:1 step down flux coupled
5 – 300 MHz**

Rev. V1

Electrical Specifications: $T_A = 25^\circ\text{C}$, $Z_0 = 75 \Omega$, $P_{in} = 0\text{dBm}$

| Parameter | Test Conditions | Units | Min. | Typ. | Max. |
|---|-----------------|----------|------|------|------------|
| Frequency Range | | MHz | 5 | | 300 |
| Impedance | | Ω | | 75 | |
| Impedance Ratio | | | | 4:1 | |
| Insertion Loss 1 (Pin1 - Pin5) | 5 - 50 MHz | dB | - | 0.4 | 0.7 |
| | 50 - 150 MHz | dB | - | 0.9 | 2.0 |
| | 150 - 300 MHz | dB | - | 2.2 | 4.5 |
| Insertion Loss 2 (Pin1 - Pin3) | 5 - 50 MHz | dB | - | 0.5 | 0.9 |
| | 50 - 150 MHz | dB | - | 1.1 | 2.2 |
| | 150 - 300 MHz | dB | - | 2.8 | 4.9 |
| Amplitude Balance | 5 - 50 MHz | dB | - | 0.1 | ± 0.5 |
| | 50 - 150 MHz | dB | - | 0.2 | ± 0.8 |
| | 150 - 300 MHz | dB | - | 0.5 | ± 1.6 |
| Phase Balance (ref value 180°) | 5 - 50 MHz | $^\circ$ | - | 0.8 | ± 3.0 |
| | 50 - 150 MHz | $^\circ$ | - | 2.4 | ± 7.0 |
| | 150 - 300 MHz | $^\circ$ | - | 3.5 | ± 10.0 |
| Input Return Loss (Pin1) | 5 - 50 MHz | dB | 14 | 21 | - |
| | 50 - 150 MHz | dB | 7 | 12 | - |
| | 150 - 300 MHz | dB | 3 | 7 | - |

Recommended Maximum Ratings

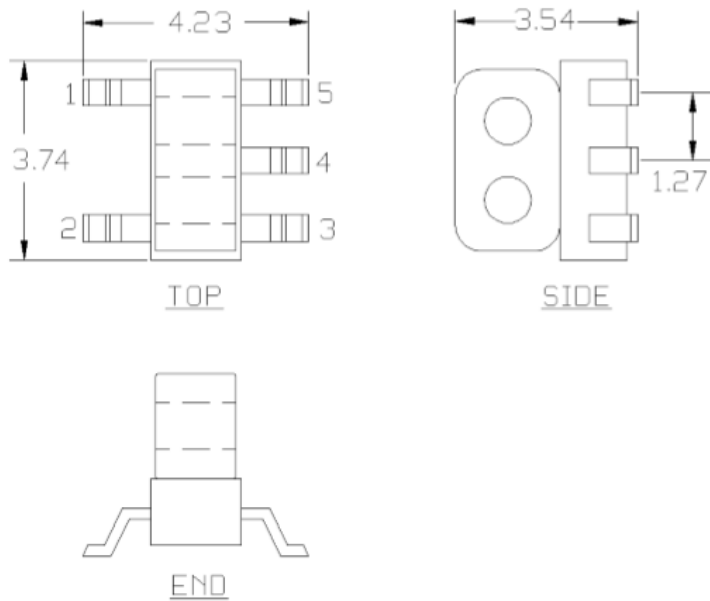
| Parameter | Units | Min | Max |
|-----------------------------|------------------|-----|------|
| Input Power | mW | | 2000 |
| DC Current | mA | | 1500 |
| Operating Temperature Range | $^\circ\text{C}$ | -40 | +125 |

Full temperature plots available on request

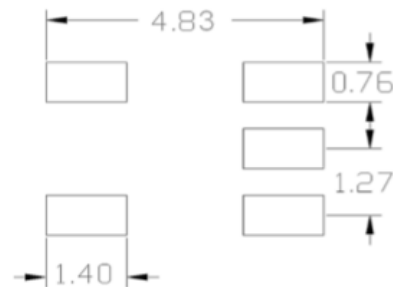
Balun transformer, 4:1 step down flux coupled
5 – 300 MHz

Rev. V1

Outline Drawing

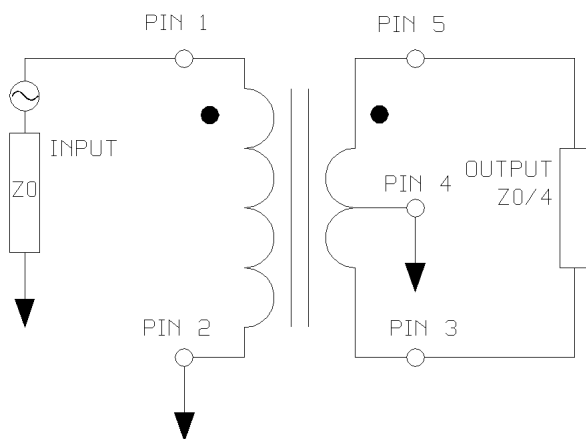


PCB Layout



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 (CuSn6) Lead finish SAC-305.

Application Schematic



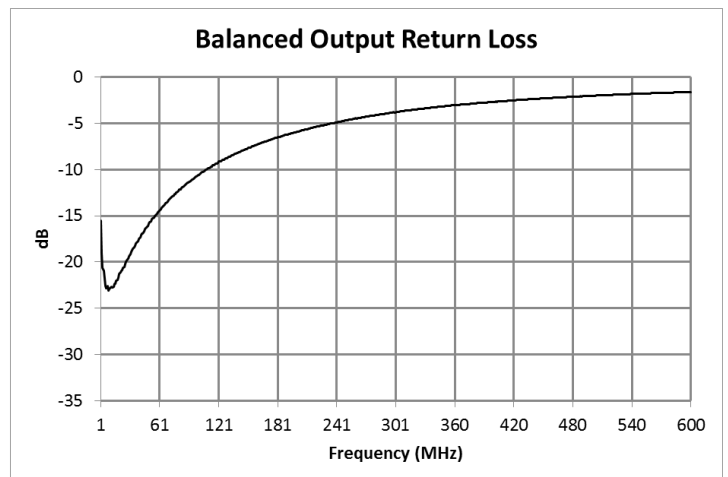
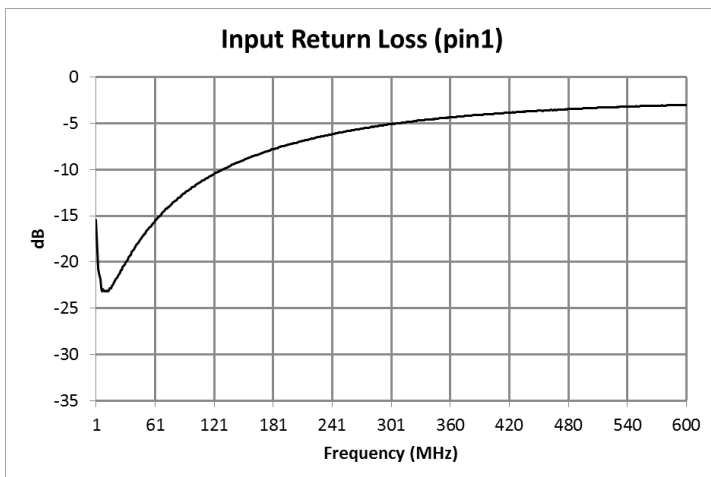
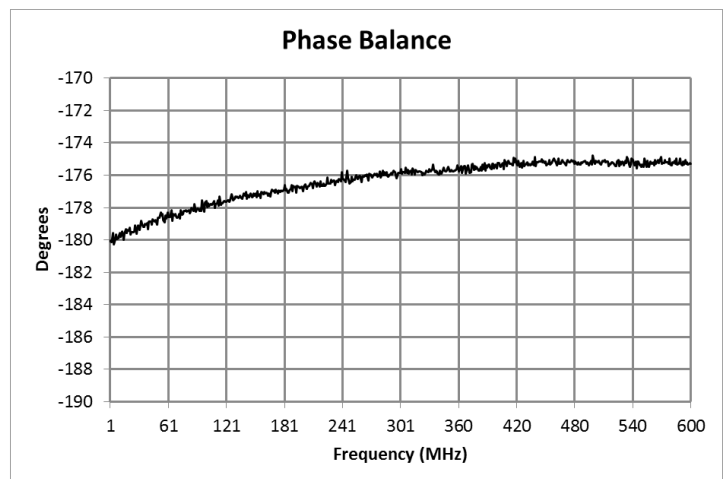
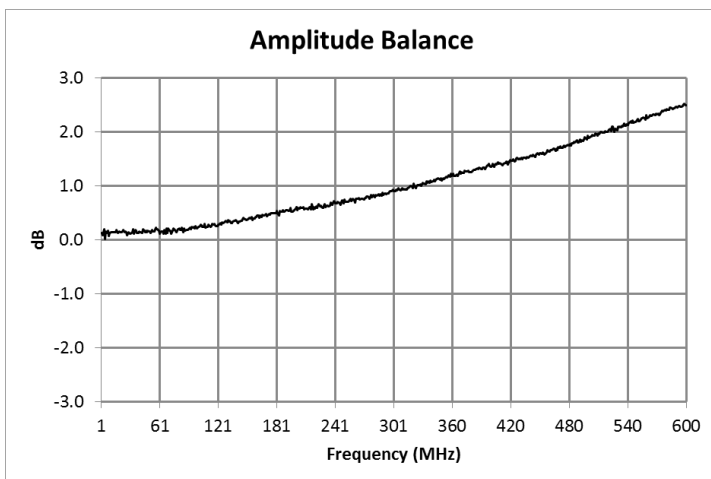
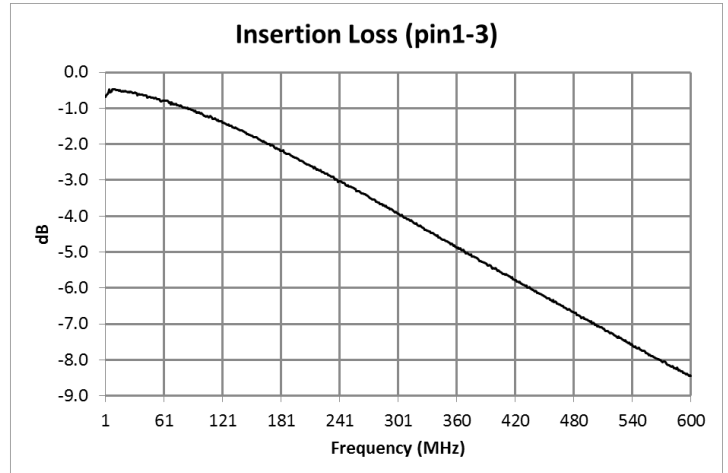
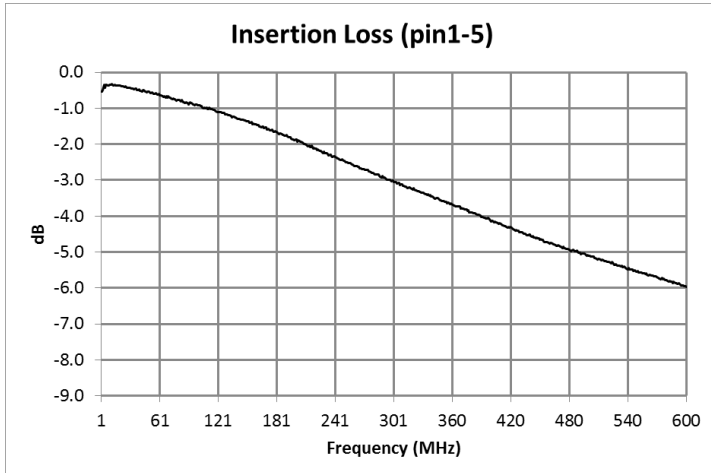
Tape & Reel Information

| Parameter | Units | Value |
|--|-------|-------|
| Qty per reel | - | 2000 |
| Reel Size | mm | 330 |
| Tape Width | mm | 12.00 |
| Pitch | mm | 8.00 |
| Ao | mm | 4.40 |
| Bo | mm | 4.00 |
| Ko | mm | 3.90 |
| Orientation | - | F26 |
| Reference Application Note ANI-019 for orientation | | |

Balun transformer, 4:1 step down flux coupled 5 – 300 MHz

Rev. V1

Typical Performance Curves



Electrical Specifications: $T_A = 25^\circ\text{C}$, $Z_0 = 75 \Omega$, $P_{in} = 0\text{dBm}$

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