

1:1 Transmission Line Transformer 46 - 1002 MHz

Rev. V4

Features

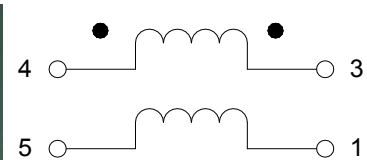
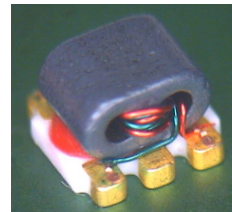
- 1:1 Impedance
- Wide Frequency Range
- Surface Mount Package
- 260°C reflow compatible
- RoHS Compliant, Lead Free
- Available on Tape & Reel

Description

The MABA-010245-CT1160 is a 1:1 transmission line transformer. The windings are welded to the package substrate for improved reliability and to eliminate lead content.

This transformer is ideally suited for CATV broadband, & Satellite STB/Subscriber applications.

Schematic



Pin Configuration

| Pin # | Function |
|-------|---------------|
| 1 | Secondary Dot |
| 2 | Not Connected |
| 3 | Secondary |
| 4 | Primary |
| 5 | Primary Dot |

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

| Parameter | Frequency | Units | Min. | Typ. | Max. |
|--------------------------------------|--------------------------------|-------|------------|------------|------------------------|
| Insertion Loss 1 (Pin 4 to Pin 3) | 46 - 1002 MHz | dB | — | 0.1 | 0.6 |
| Insertion Loss 2 (Pin 4 to Pin 1) | 46 - 1002 MHz | dB | — | 0.4 | 0.7 |
| Amplitude Balance (Nominal 0 dB) | 46 - 1002 MHz | dB | — | 0.3 | ± 0.8 |
| Phase Balance (Nominal 180°) | 46 - 100 MHz 100 - 100 2MHz | ° | — | 2.4 1.2 | ± 5.0 ± 2.5 |
| Input Return Loss (Pin4) | 46 - 300 MHz 300 - 1002 MHz | dB | 25 17.5 | 42 30 | — |

Ordering Information

| Part # | Package |
|--------------------|---------------------|
| MABA-010245-CT1160 | 2000 piece per reel |
| MABA-010245-CT11TB | Customer test board |

Absolute Maximum Ratings^{1,2}

| Parameter | Absolute Maximum |
|-----------------------|------------------|
| RF Power | 250 mW |
| DC Current | >600 mA @ 5 V |
| Operating Temperature | -40°C to +85°C |
| Storage Temperature | -40°C to +100°C |

1. Exceeding any one or combination of these limits may cause permanent damage to this device.
2. MACOM does not recommend sustained operation near these survivability limits.

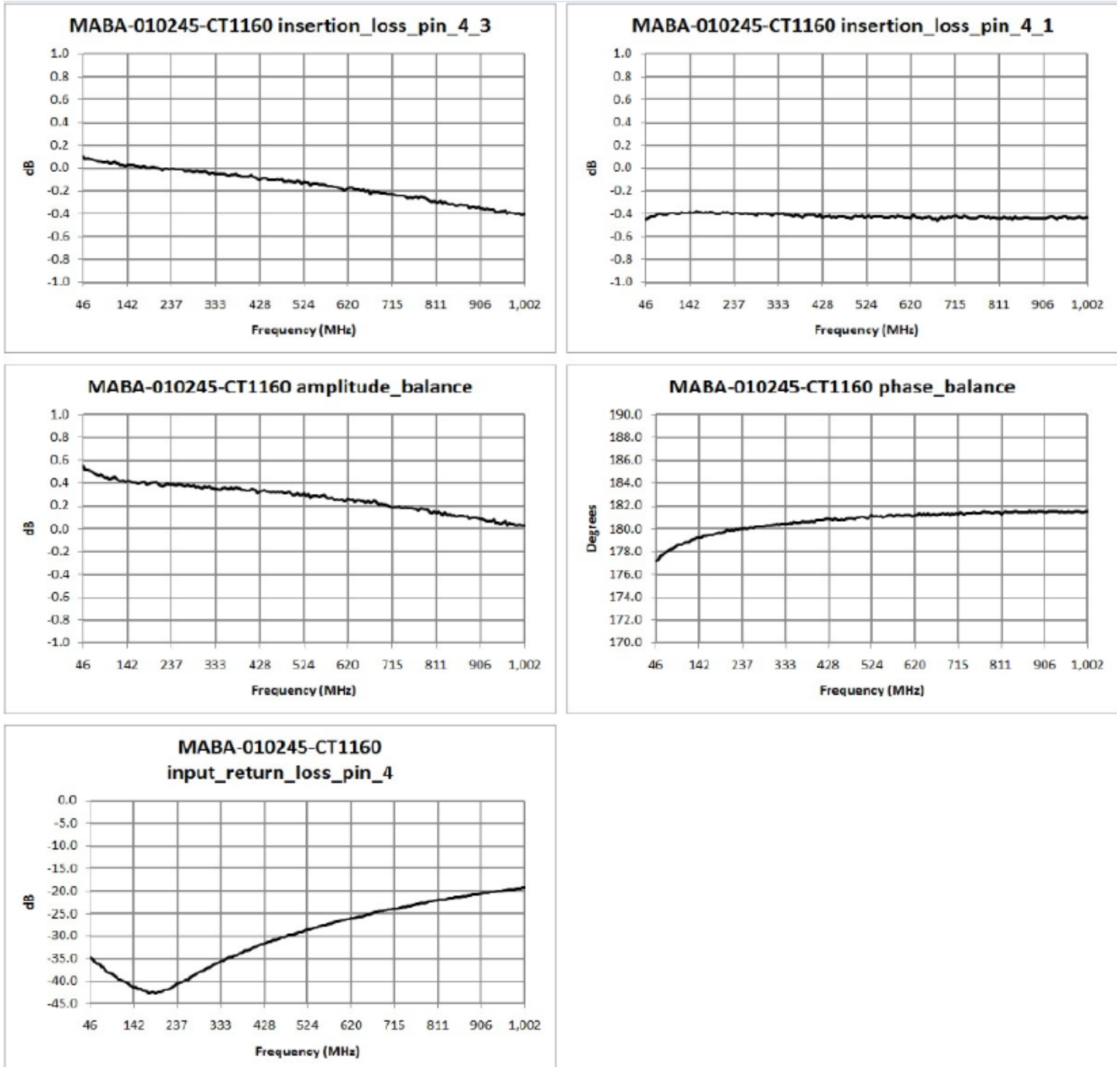
MABA-010245-CT1160



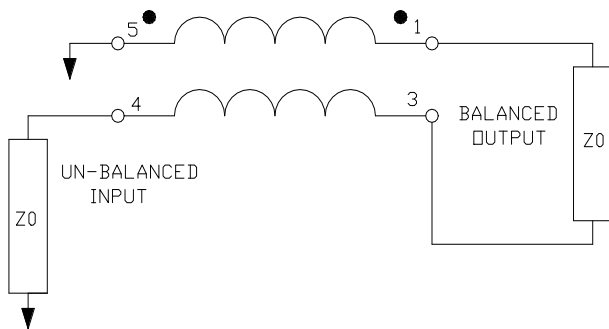
1:1 Transmission Line Transformer
46 - 1002 MHz

Rev. V4

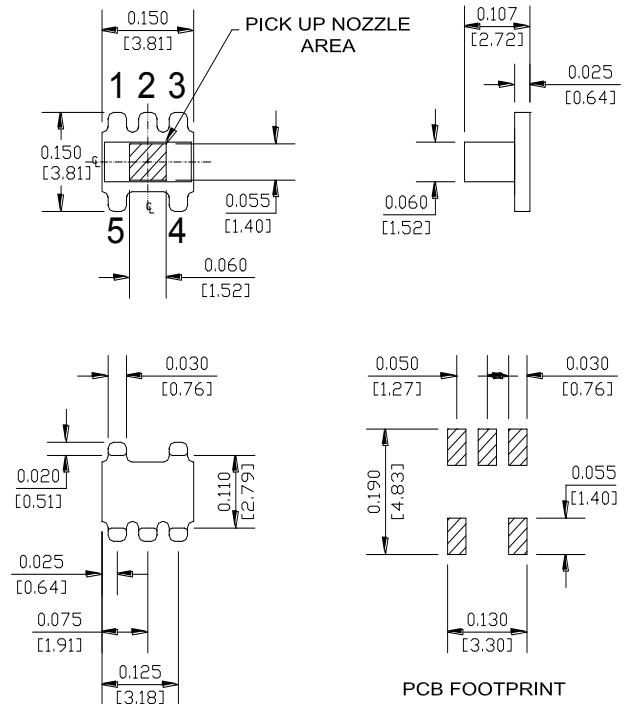
Typical Performance Curves: $T_A = 25^\circ\text{C}$, $Z_0 = 75 \Omega$, $P_{IN} = 0 \text{ dBm}$



Application Circuit

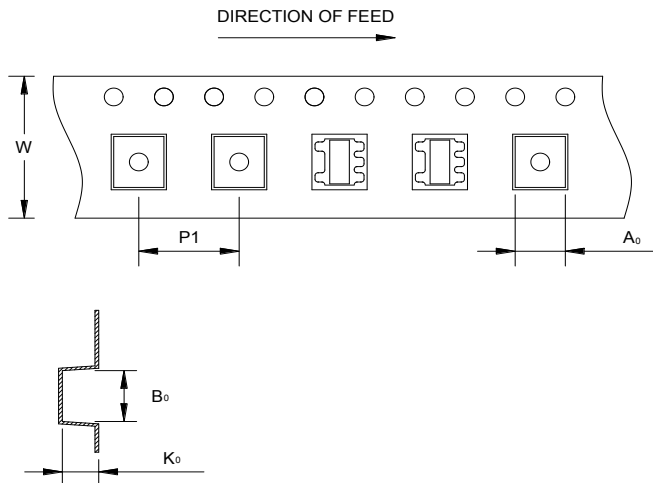


Outline Drawing



Dimensions in inches [mm] Tolerance: .xx ± .02, .xxx ± .010, unless otherwise stated

Reel Orientation



Tape & Reel Information

| Item | Dimension |
|-------|-------------------|
| A_0 | 4.0 mm +/-0.1 mm |
| B_0 | 4.0 mm +/-0.1 mm |
| K_0 | 2.90 mm +/-0.1 mm |
| W | 12.0 mm +/-0.3 mm |
| $P1$ | 8.00 mm +/-0.1 mm |

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