

Features

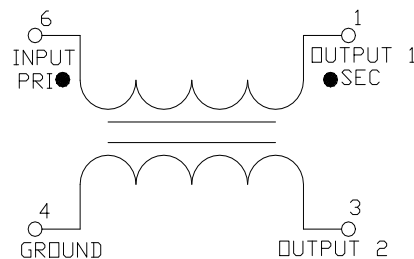
- Surface mount
- 1:1 Impedance ratio
- Can be used in both 50Ω and 75Ω systems
- 260°C reflow compatible
- RoHS* compliant, lead free
- Available on tape and reel.



Description

MABA-009231-CT1A4B is a 1:1 RF transmission line transformer in a low cost, surface mount package. Ideally suited for broadband CATV applications.

Schematic



Ordering information

| Part number | Description |
|--------------------|---------------------|
| MABA-009231-CT1A4B | 2000 piece reel |
| MABA-009231-CT1ATB | Customer Test Board |

Note: Reference Application Note **M513** for reel size information.

Pin configuration

| Pin no. | Function |
|---------|--------------------------|
| 1 | Secondary dot (Output 1) |
| 2 | Not used (Ground) |
| 3 | Secondary (Output 2) |
| 4 | Primary (Ground) |
| 6 | Primary dot (Input) |

* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

Transformer, 1:1 Transmission Line Balun 5 to 1200 MHz

Rev. V2

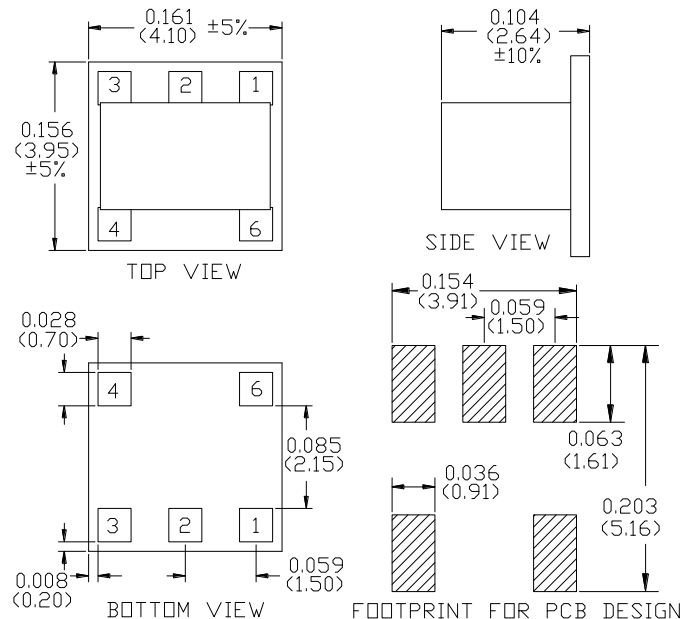
Electrical specifications: $T_A = 25^\circ\text{C}$, $Z_0 = 50 \Omega$

| Parameter | Test conditions | Units | Min | Typ | Max |
|--------------------------------------|-----------------|-------|-----|------|-----------|
| Insertion loss 1 (pin6 - pin1) | 5 - 50 MHz | dB | — | 0.23 | 0.0 |
| | 50 - 400 MHz | | | 0.01 | 0.5 |
| | 400 - 870 MHz | | | 0.74 | 1.5 |
| | 870 - 1200 MHz | | | 1.28 | 2.4 |
| Insertion loss 2 (pin6 - pin3) | 5 - 50 MHz | dB | — | 0.21 | 0.5 |
| | 50 - 450 MHz | | | 0.29 | 0.6 |
| | 450 - 1000 MHz | | | 0.51 | 1.0 |
| | 1000 - 1200 MHz | | | 0.67 | 1.8 |
| Input return loss | 5 - 50 MHz | dB | 20 | 30.6 | — |
| | 50 - 1000 MHz | | 8 | 12.4 | |
| | 1000 - 1200 MHz | | 7 | 12.9 | |
| Amplitude unbalance (nominal 0dB) | 5 - 50 MHz | dB | — | 0.44 | ± 0.9 |
| | 50 - 700 MHz | | | 0.14 | ± 0.8 |
| | 700 - 1200 MHz | | | 0.67 | ± 1.5 |
| Phase unbalance (nominal 180°) | 5 - 50 MHz | ° | — | 2.3 | ± 20 |
| | 50 - 1050 MHz | | | 1.9 | ± 8 |
| | 1050 - 1200 MHz | | | 3.4 | ± 20 |

Absolute maximum ratings

| Parameter | Absolute maximum |
|-----------------------|--|
| Max input power | 250 mW |
| DC current | 200 mA |
| Operating temperature | -40°C to $+85^\circ\text{C}$ |
| Storage temperature | -40°C to $+85^\circ\text{C}$ |

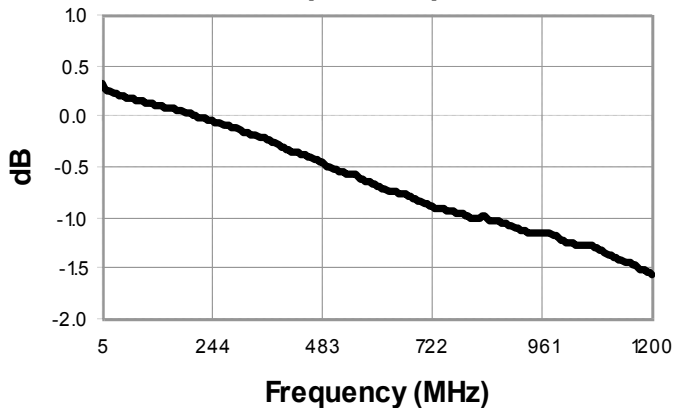
Case style: SM-187



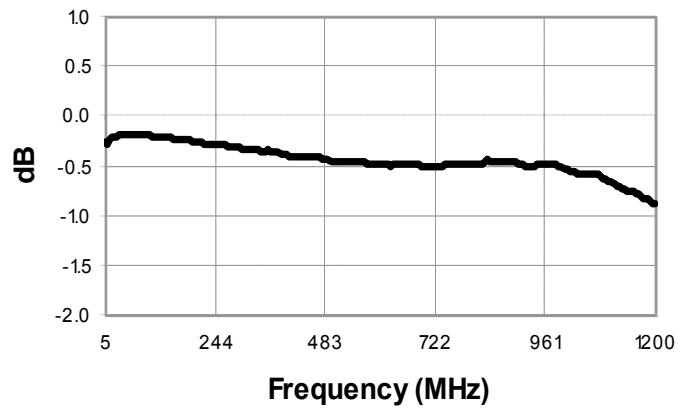
Dimensions in inches [mm] Tolerance: .xx ± .02, .xxx ± .010, Unless otherwise stated

Typical performance curves: $T_A = 25^\circ\text{C}$, $Z_0 = 50 \Omega$

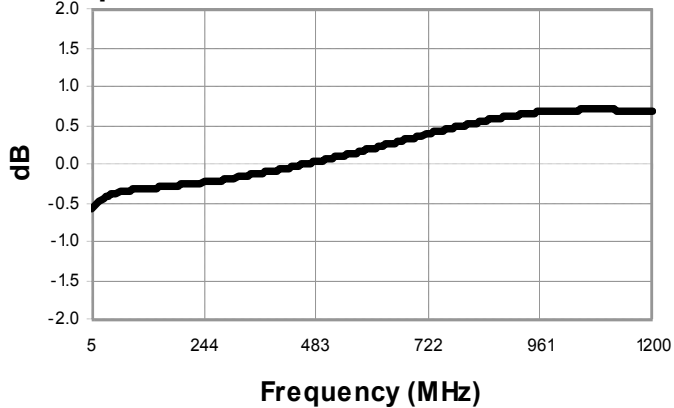
Insertion loss 1: pin 6 to pin 1



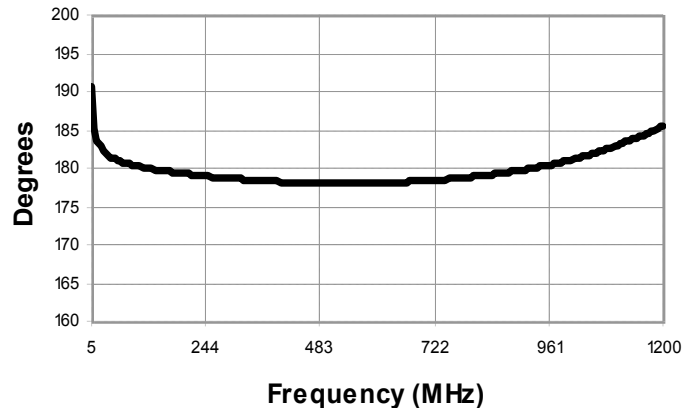
Insertion loss 2: pin 6 to pin 3



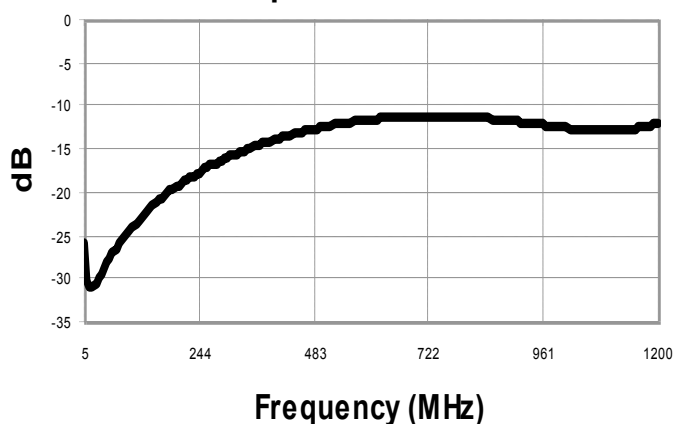
Amplitude balance



Phase balance



Return loss: Input



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