

1:3 Flux Coupled Balun Transformer 0.3 - 500 MHz

Rev. V4

Features

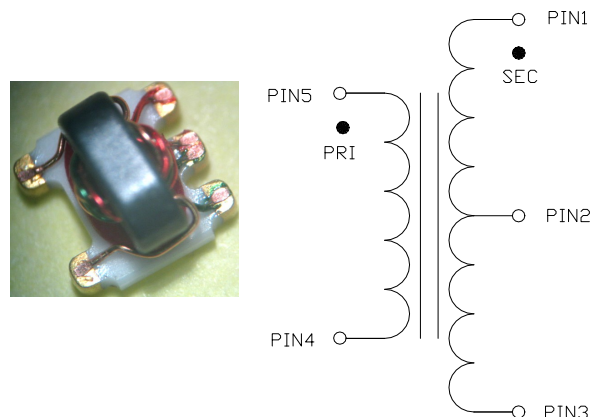
- 1:3 Impedance
- Surface Mount Package
- Centre Tap on Secondary
- 260°C Reflow Compatible
- RoHS* Compliant and Lead Free
- Available on Tape and Reel

Description

The MABA-009947-CF3160 is a 1:3 RF flux coupled transformer in a surface mount package.

Ideally suited for broadband CATV applications.

Schematic



Pin Configuration

| Pin # | Function |
|-------|----------------------|
| 1 | Secondary Dot |
| 2 | Secondary Centre Tap |
| 3 | Secondary |
| 4 | Primary |
| 5 | Primary Dot |

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

| Parameter | Test Conditions | Units | Min. | Typ. | Max. |
|---------------------------------------|-----------------|-------|------|------|-----------|
| Insertion Loss | 0.3 - 5 MHz | dB | — | 1.2 | 2.5 |
| | 5 - 250 MHz | | | 0.7 | 0.9 |
| | 250 - 500 MHz | | | 1.3 | 1.9 |
| Amplitude Unbalance (Nominal 0 dB) | 0.3 - 100 MHz | dB | — | 0.0 | ± 0.2 |
| | 100 - 250 MHz | | | 0.2 | ± 0.4 |
| | 250 - 500 MHz | | | 0.6 | ± 1.5 |
| Phase Unbalance (Nominal 180°) | 0.3 - 100 MHz | ° | — | 0.0 | ± 3 |
| | 100 - 250 MHz | | | 0.8 | ± 6 |
| | 250 - 500 MHz | | | 3.5 | ± 20 |
| Input Return Loss | 0.3 - 5 MHz | dB | 7 | 11 | — |
| | 5 - 250 MHz | | 18 | 22 | |
| | 250 - 500 MHz | | 10 | 15 | |

Ordering Information

| Part # | Package |
|--------------------|---------------------|
| MABA-009947-CF3160 | 2000 piece reel |
| MABA-009776-CF31TB | Customer Test Board |

Recommended Maximum Ratings

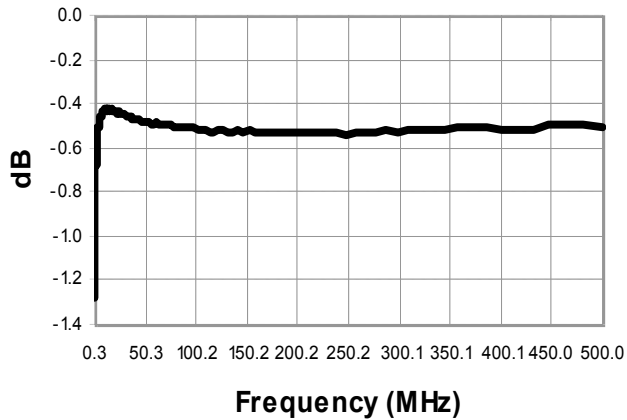
| Parameter | Value |
|-----------------------|-----------------|
| RF Power | >250 mW |
| DC Current | >30 mA |
| Operating Temperature | -20°C to +85°C |
| Storage Temperature | -55°C to +100°C |

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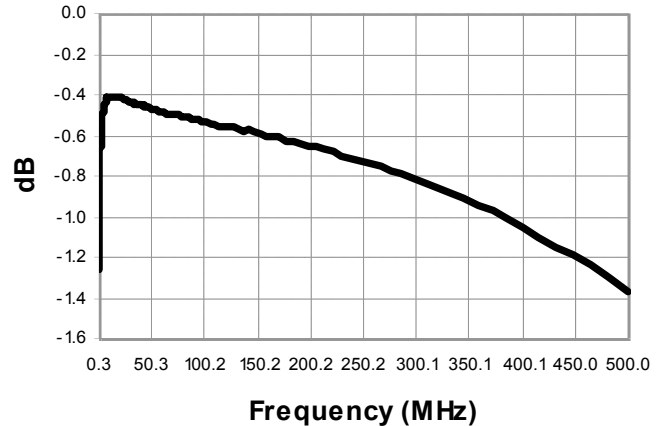
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Typical Performance: $T_A = 25^\circ\text{C}$, $Z_0 = 50\ \Omega$, $P_{IN} = 0\ \text{dBm}$

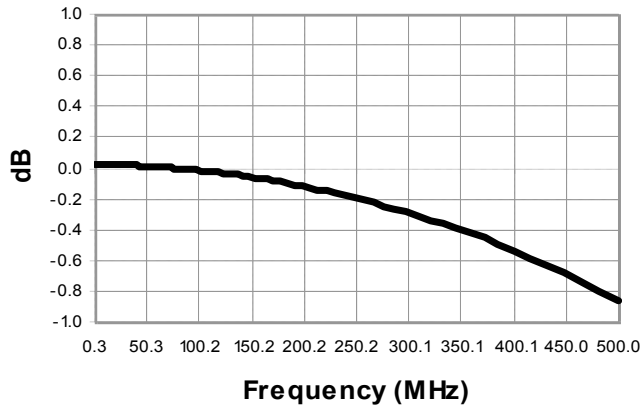
Insertion Loss 1: (Pin 4 to 1)



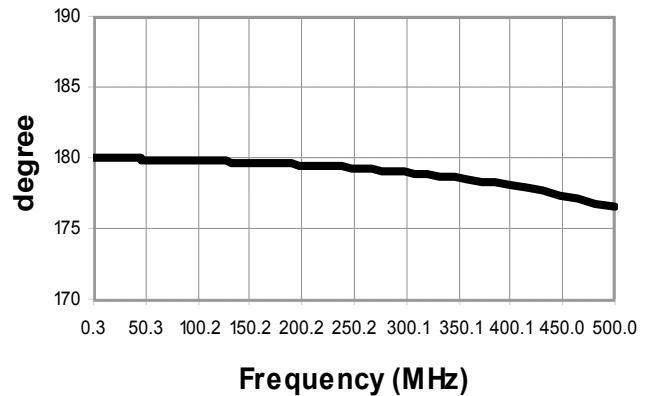
Insertion Loss 2: (Pin 4 to 3)



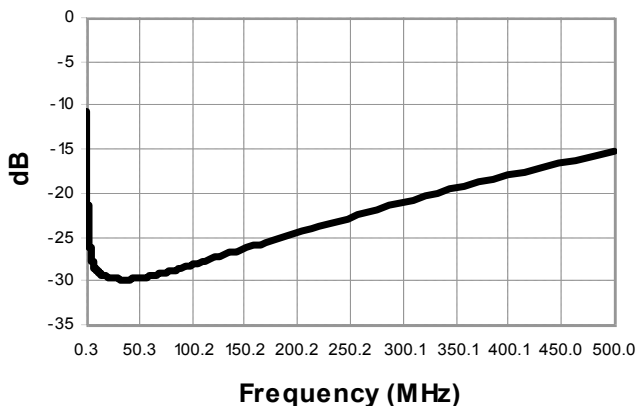
Amplitude Unbalance



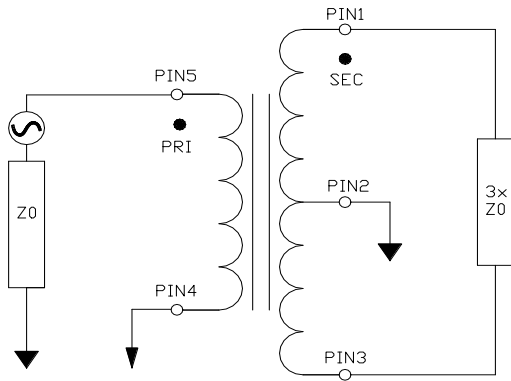
Phase Unbalance



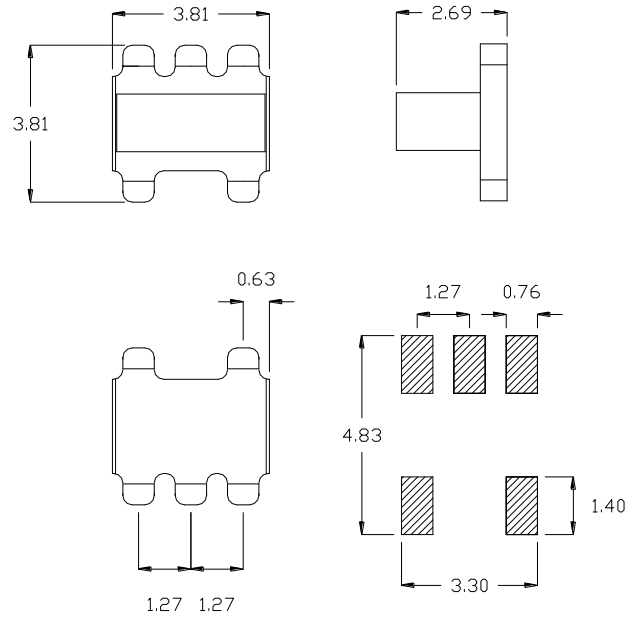
Return Loss: Input (Pin 4)



Application Circuit

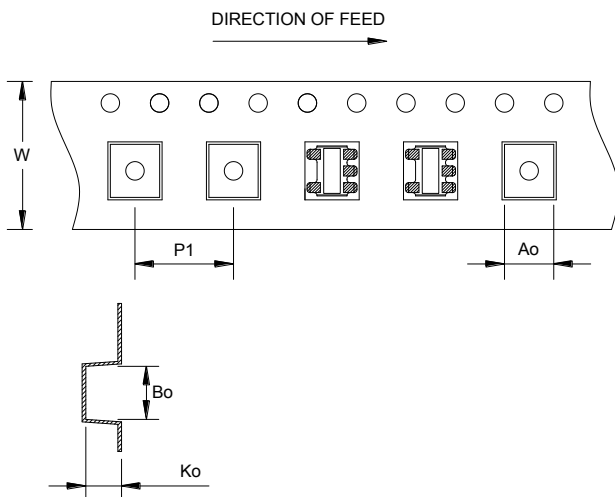


Outline Drawing



All Dimensions in mm.
 Tolerance ± 0.20 mm
 Drawing not to scale

Reel Orientation



Tape & Reel Information

| Item | Dimension |
|------|---------------------|
| Ao | 4.00 mm, +/-0.1 mm |
| Bo | 4.00 mm, +/-0.1 mm |
| Ko | 2.90 mm, +/-0.1 mm |
| W | 12.00 mm, +/-0.3 mm |
| P1 | 8.00 mm, +/-0.1 mm |

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