

Thin-Film RF/Microwave Directional Couplers

CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°

DB0805 3dB 90° Couplers



GENERAL DESCRIPTION

ITF TECHNOLOGY

The ITF SMD 3dB 90° Coupler is based on thin-film multilayer technology. The technology provides a miniature part with excellent high frequency performance and rugged construction for reliable automatic assembly.

The ITF 3dB 90° Coupler is offered in a variety of frequency bands compatible with various types of high frequency wireless systems.

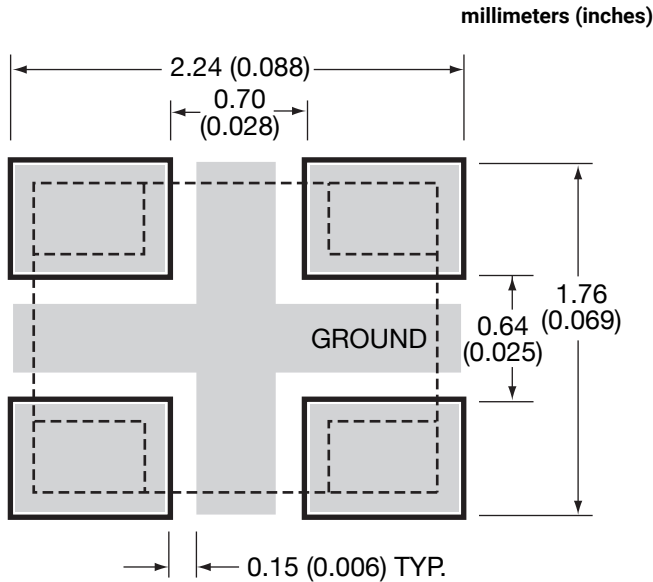
APPLICATIONS

- Balanced Amplifiers and Signal Distribution in Mobile Communications

FEATURES

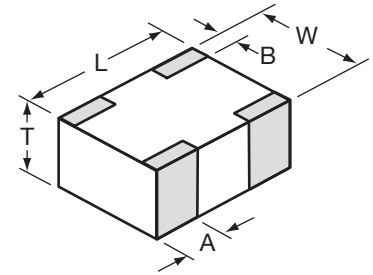
- Miniature 0805 size
- Low I. Loss
- High Isolation
- Power Handling: 10W RF CW
- Surface Mountable
- Supplied on Tape & Reel
- Operating Temperature -40°C to +85°C

RECOMMENDED PAD LAYOUT DIMENSIONS:

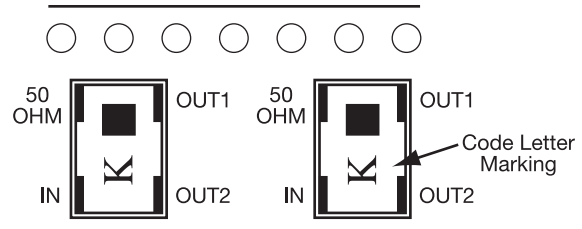


DIMENSIONS:

| | |
|---|----------------------------|
| L | 2.03±0.10 (0.080±0.004) |
| W | 1.55±0.10 (0.061±0.004) |
| T | 0.98±0.15 (0.037±0.006) |
| A | 0.56±0.25 (0.022±0.010) |
| B | 0.35±0.15 (0.014±0.006) |



TERMINALS (TOP VIEW) ORIENTATION IN TAPE



ELECTRICAL PARAMETERS*

| Part Number** | Frequency F ₀ [MHz] | I. Loss @ F ₀ [dB] | Phase Balance [deg] max. | Code Letter Marking |
|-----------------|--------------------------------|-------------------------------|--------------------------|---------------------|
| DB0805A0880ASTR | 880±30 | 0.35 | 3 | Y |
| DB0805A0915ASTR | 915±30 | 0.35 | 3 | V |
| DB0805A0967ASTR | 967±30 | 0.35 | 3 | V |
| DB0805A1350ASTR | 1350±50 | 0.35 | 3 | C |
| DB0805A1650ASTR | 1650±50 | 0.35 | 3 | F |
| DB0805A1800ASTR | 1800±50 | 0.30 | 3 | F |
| DB0805A1850ASTR | 1850±50 | 0.30 | 3 | K |
| DB0805A1900ASTR | 1900±50 | 0.30 | 3 | K |
| DB0805A1950ASTR | 1950±50 | 0.25 | 3 | K |
| DB0805A2140ASTR | 2140±50 | 0.25 | 3 | L |
| DB0805A2325ASTR | 2325±50 | 0.25 | 3 | T |

*With Recommended Pad Layout

NOTE: Additional Frequencies Available Upon Request

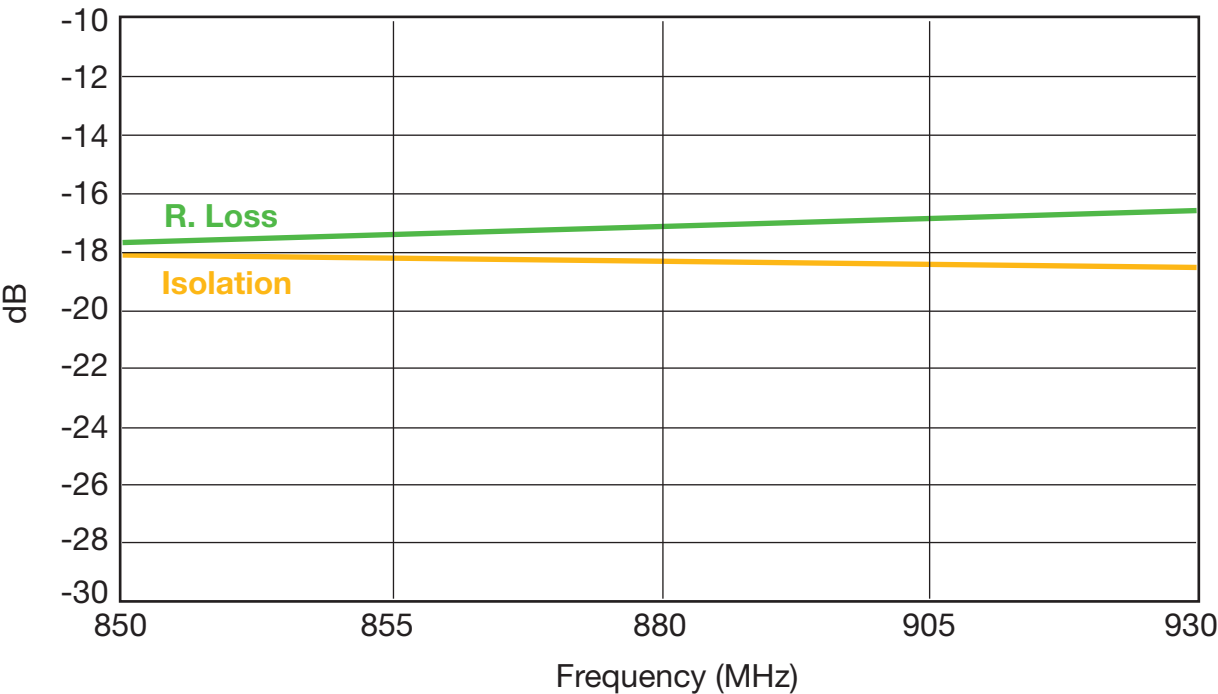
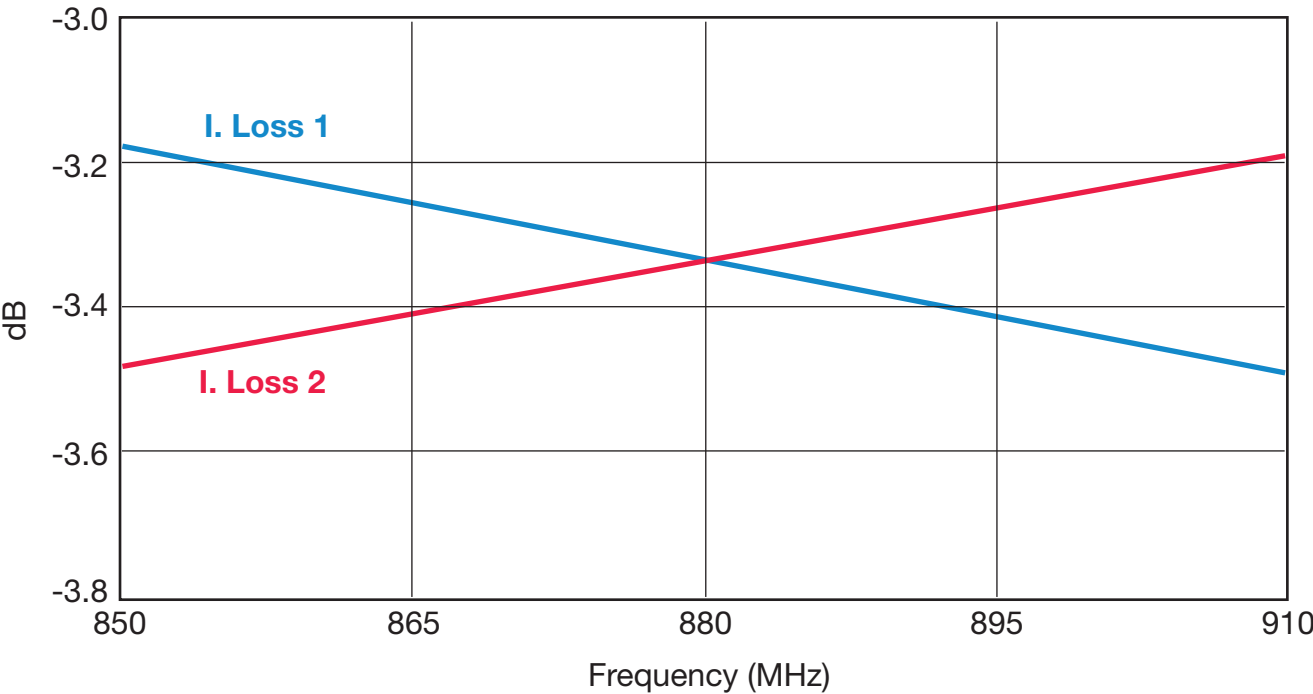
** LEAD FREE TERMINATION
PART NUMBERS:
DB0805AXXXASTR



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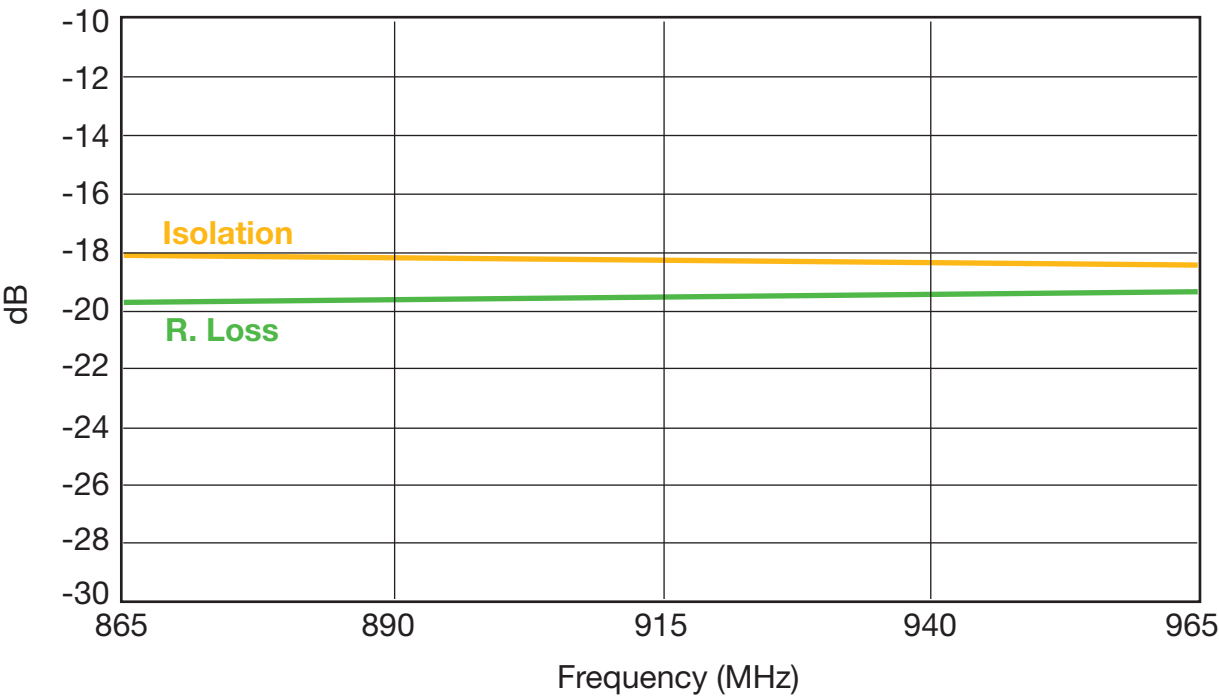
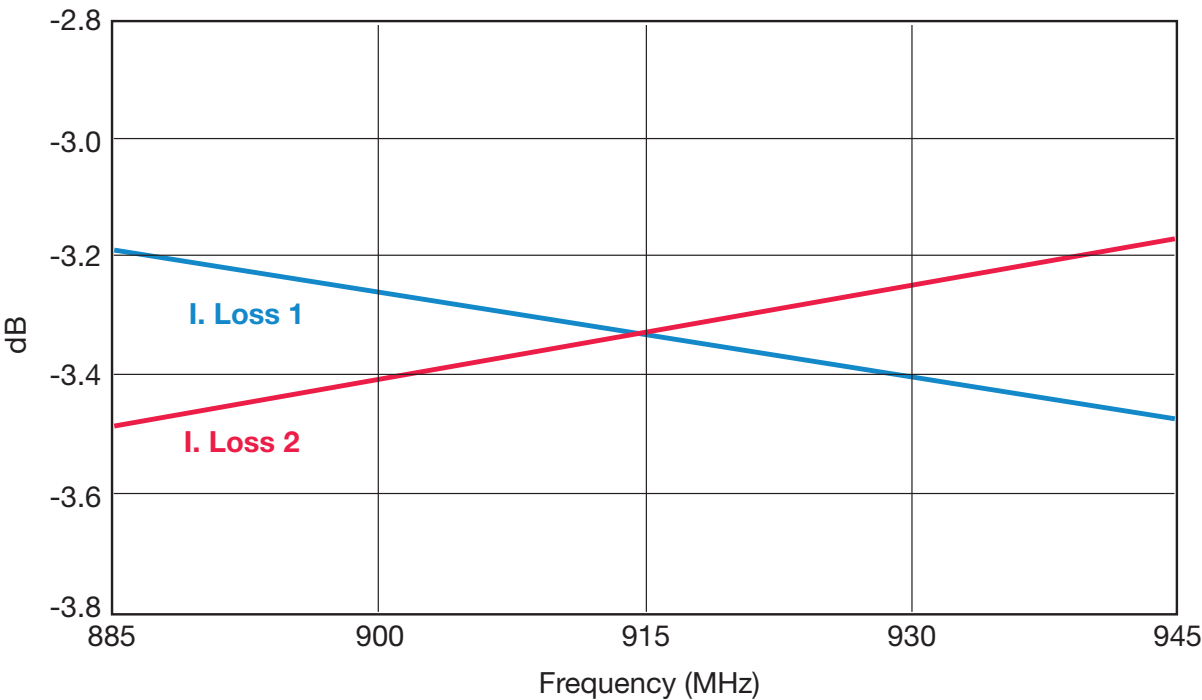
880 ± 30MHZ DB0805A0880ASTR



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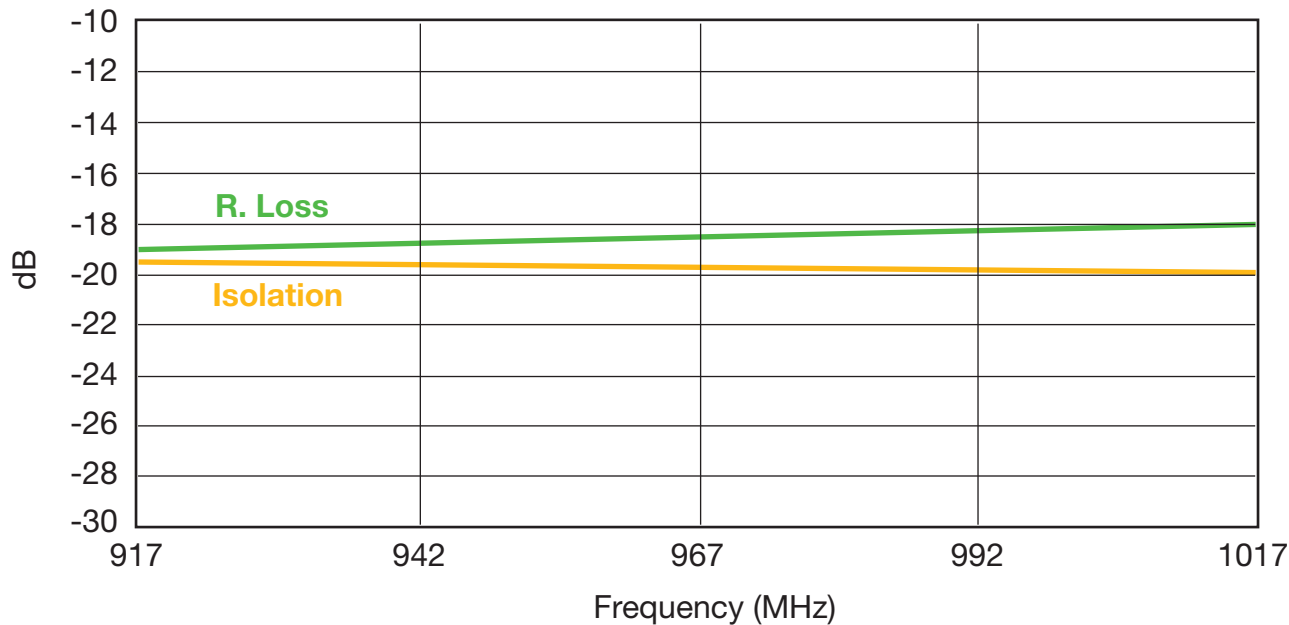
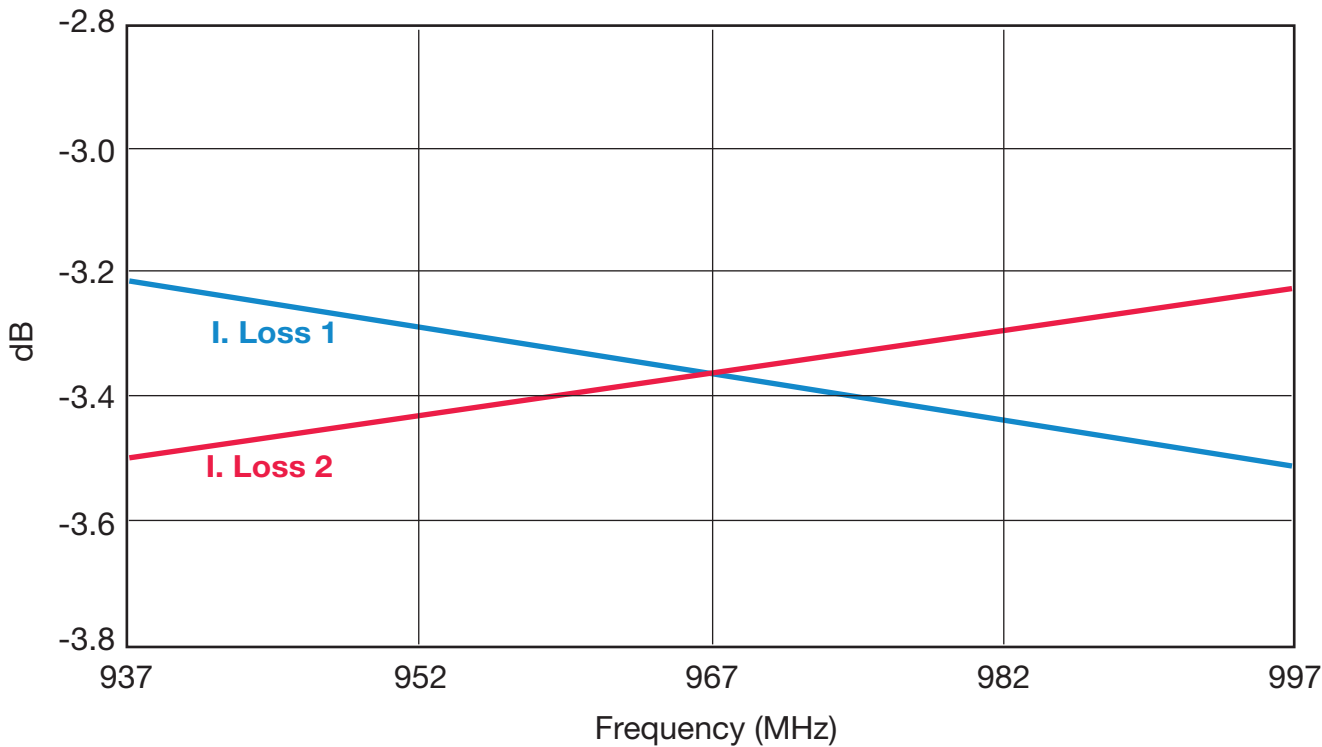
915 ± 30MHZ DB0805A0915ASTR



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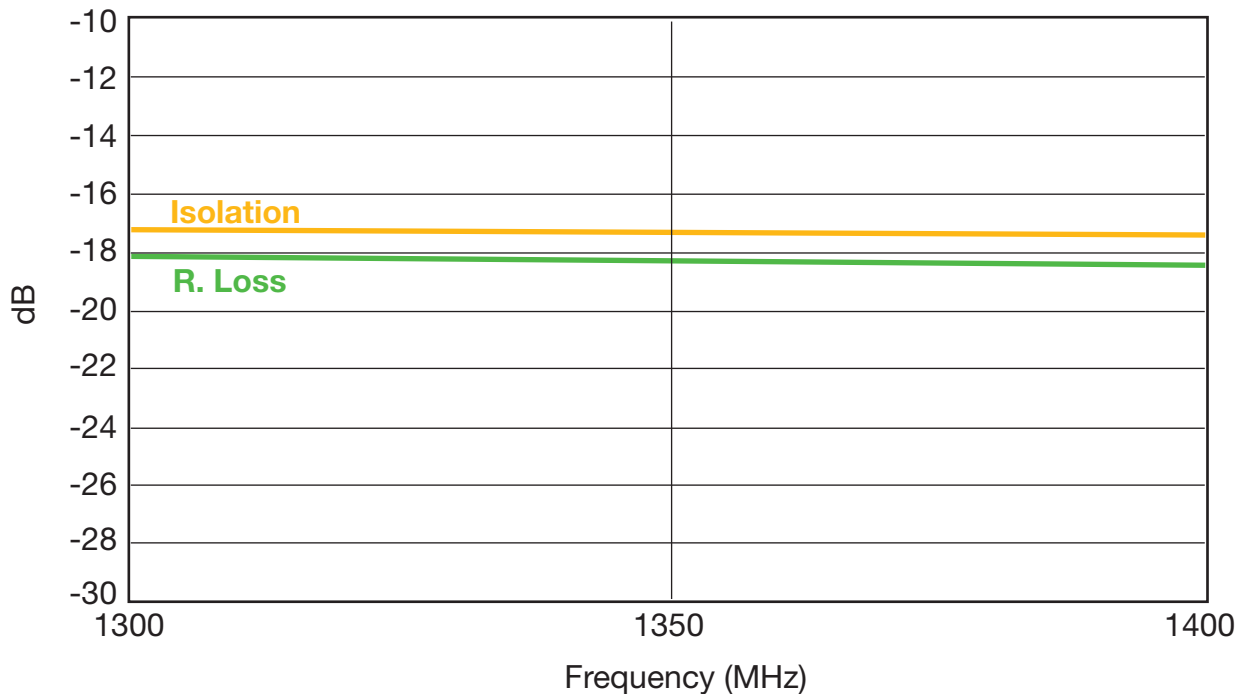
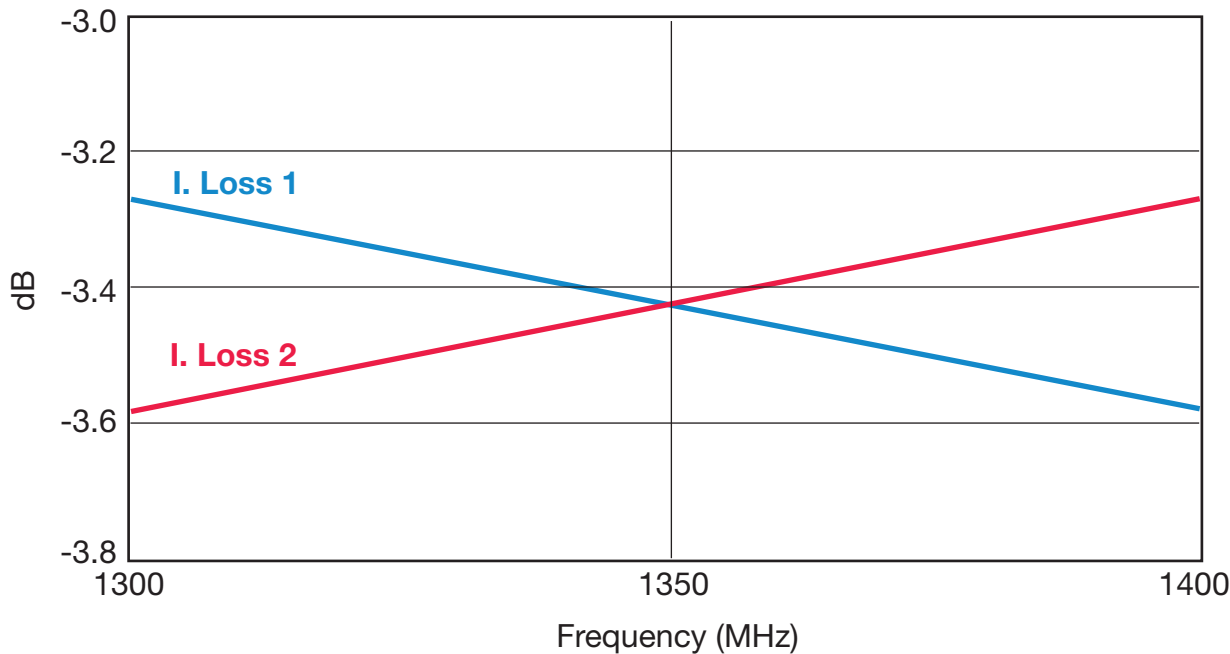
967± 30MHZ DB0805A0967ASTR



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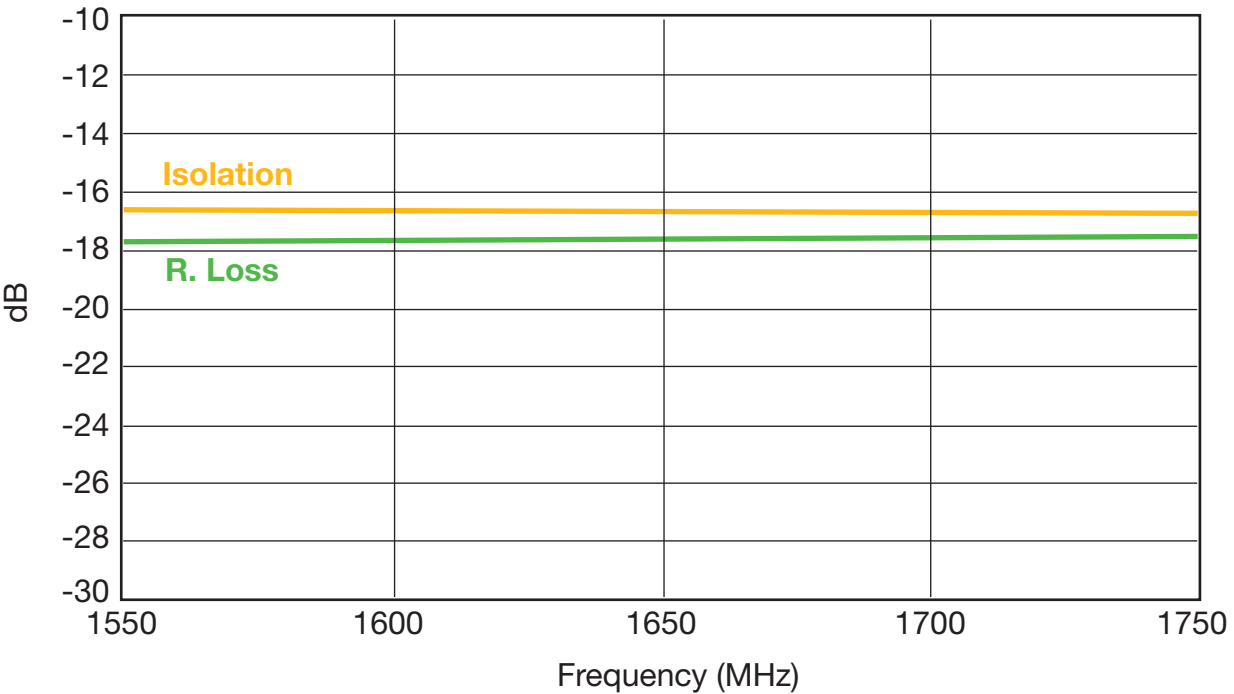
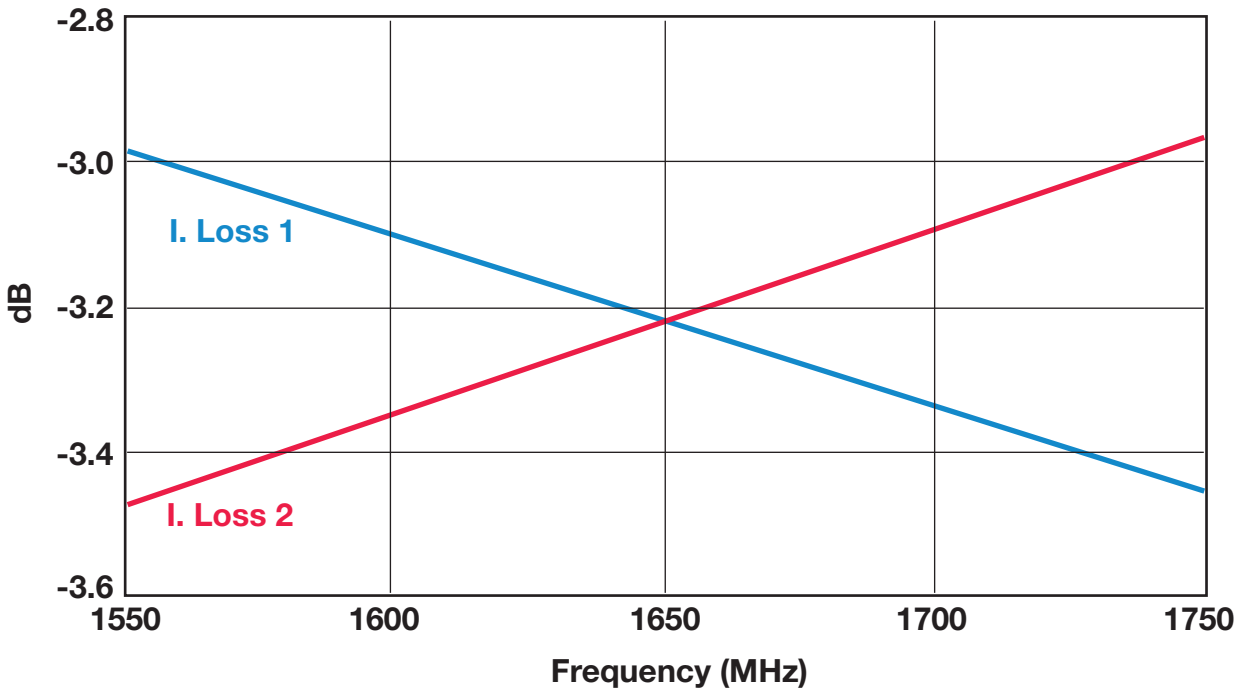
1350 ± 50MHZ DB0805A1350ASTR



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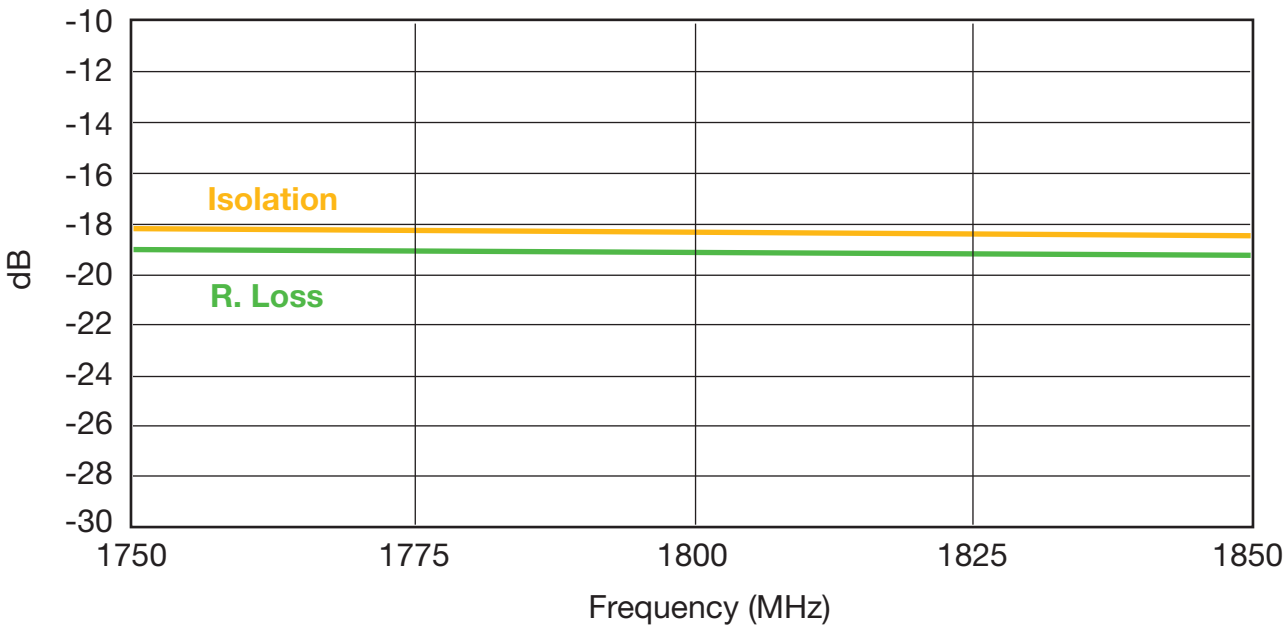
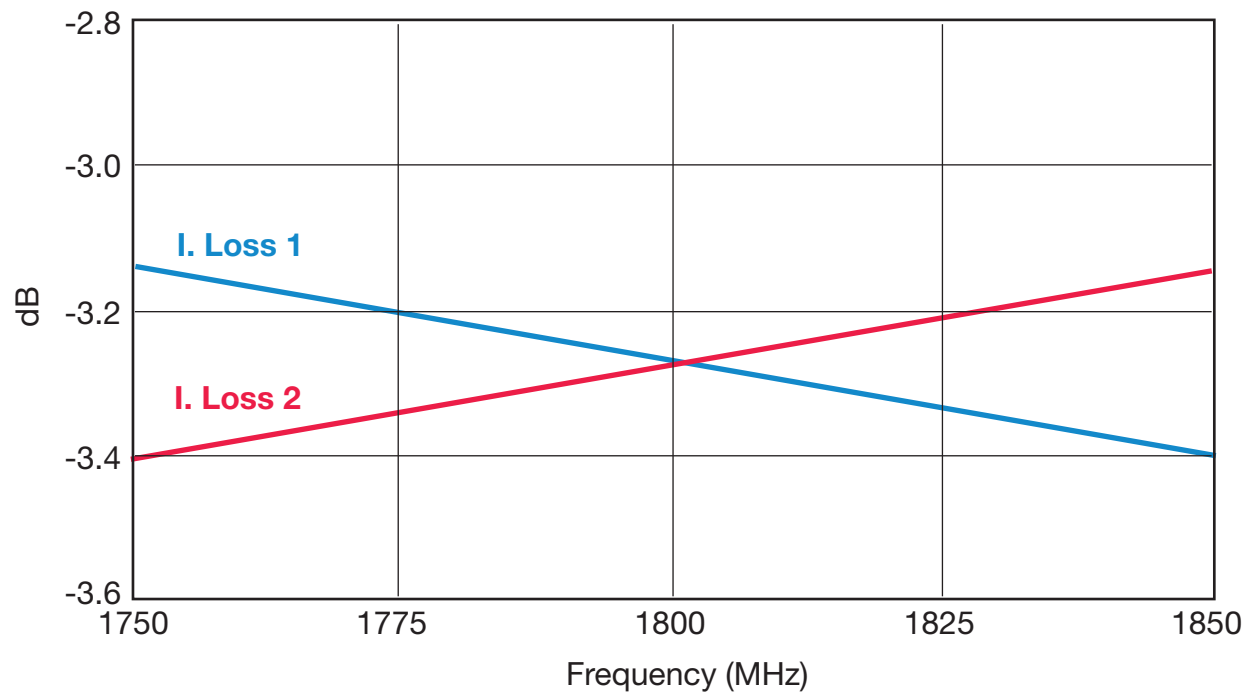
1650 ± 50MHZ DB0805A1650ASTR



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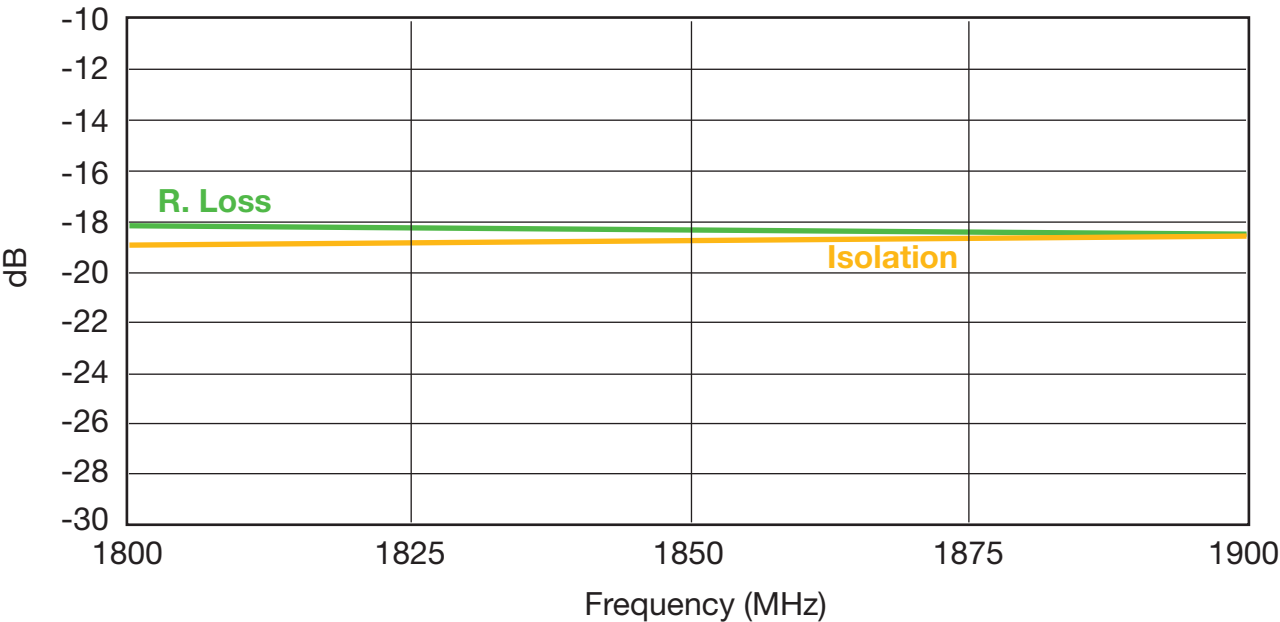
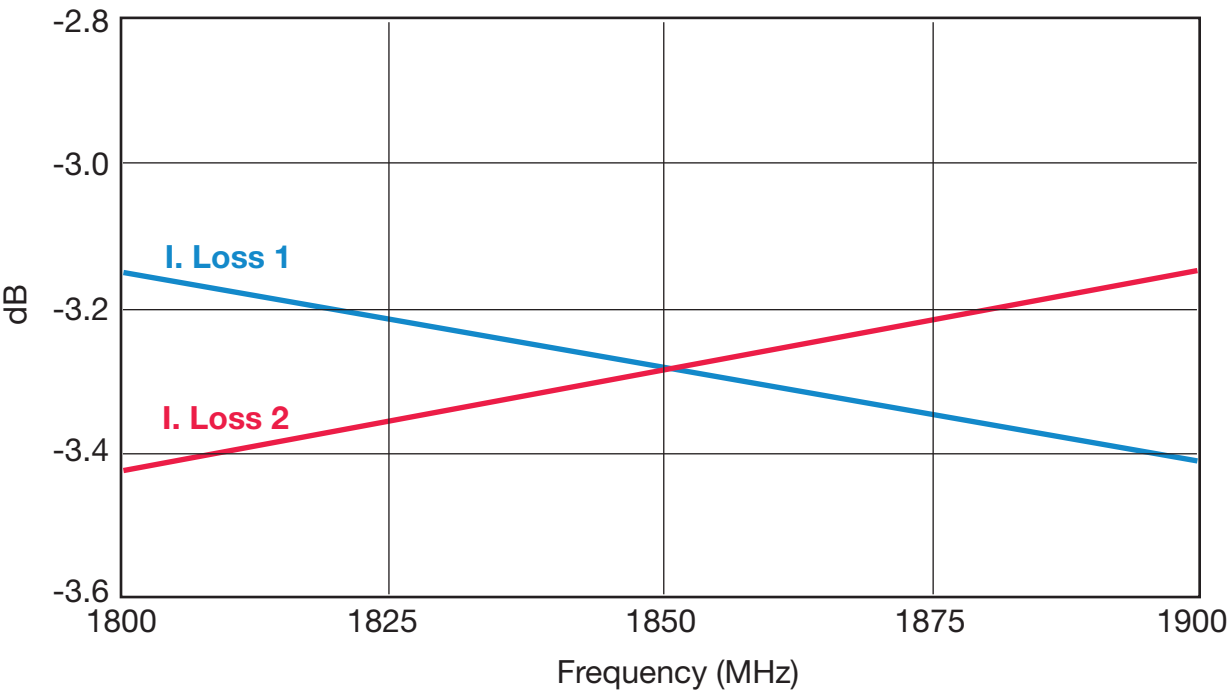
1800 ± 50MHZ DB0805A1800ASTR



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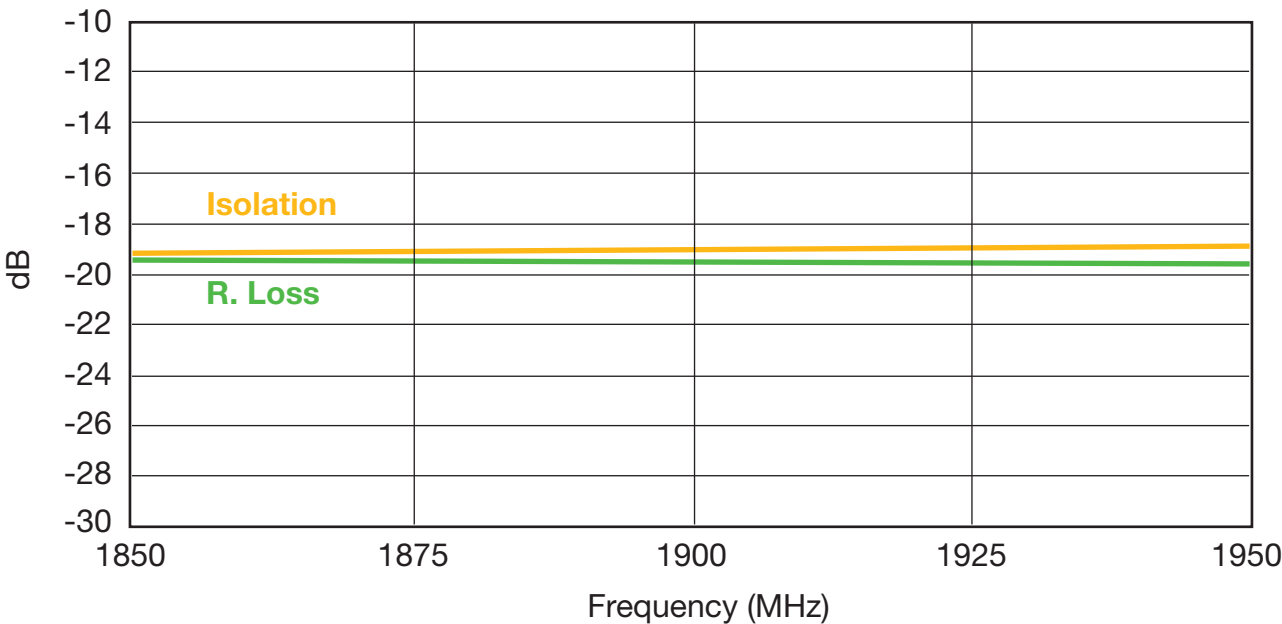
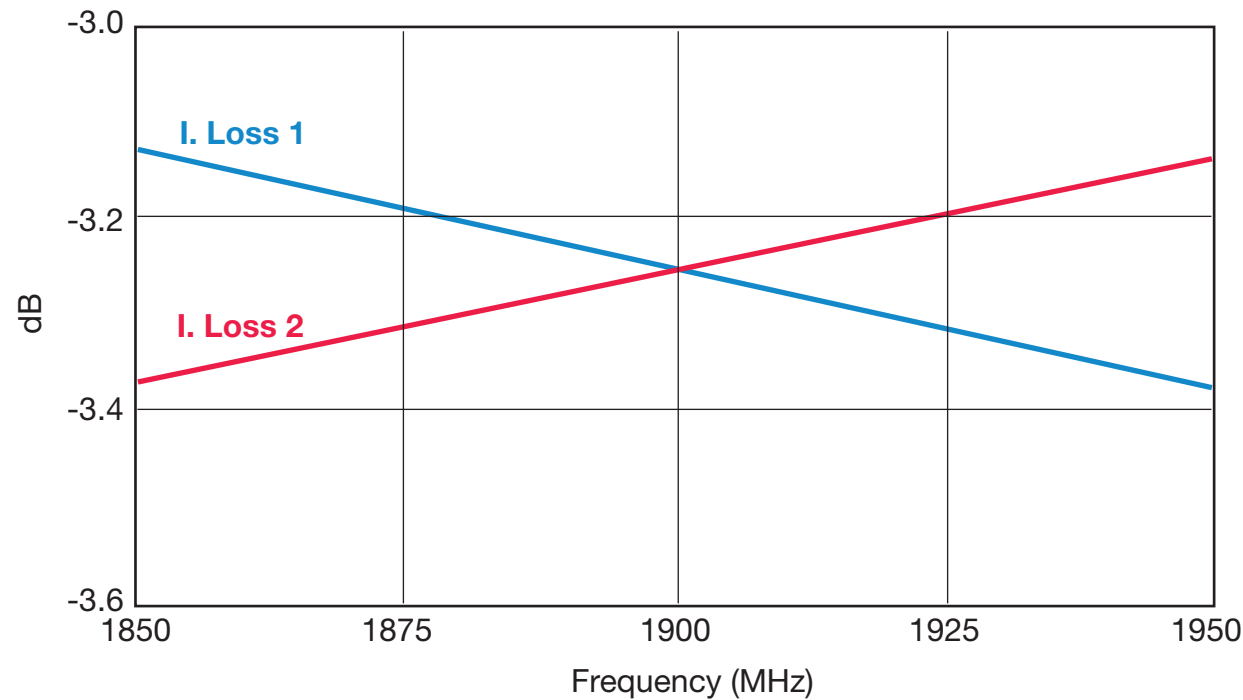
1850 ± 50MHZ DB0805A1850ASTR



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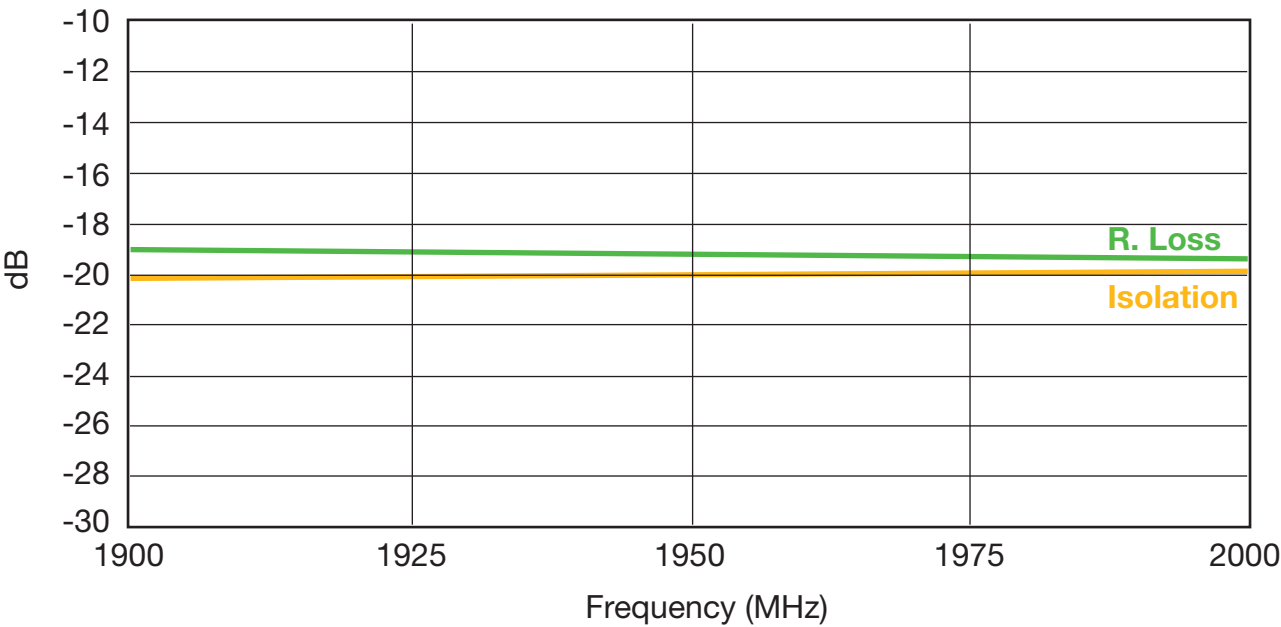
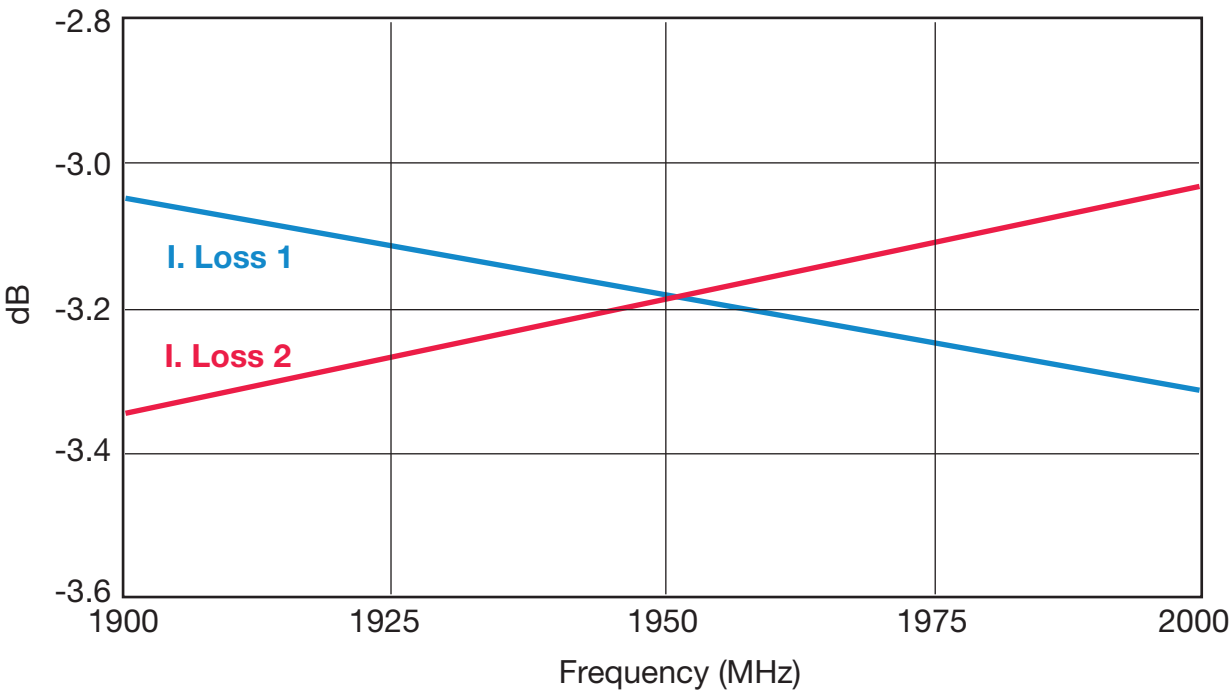
1900 ± 50MHZ DB0805A1900ASTR



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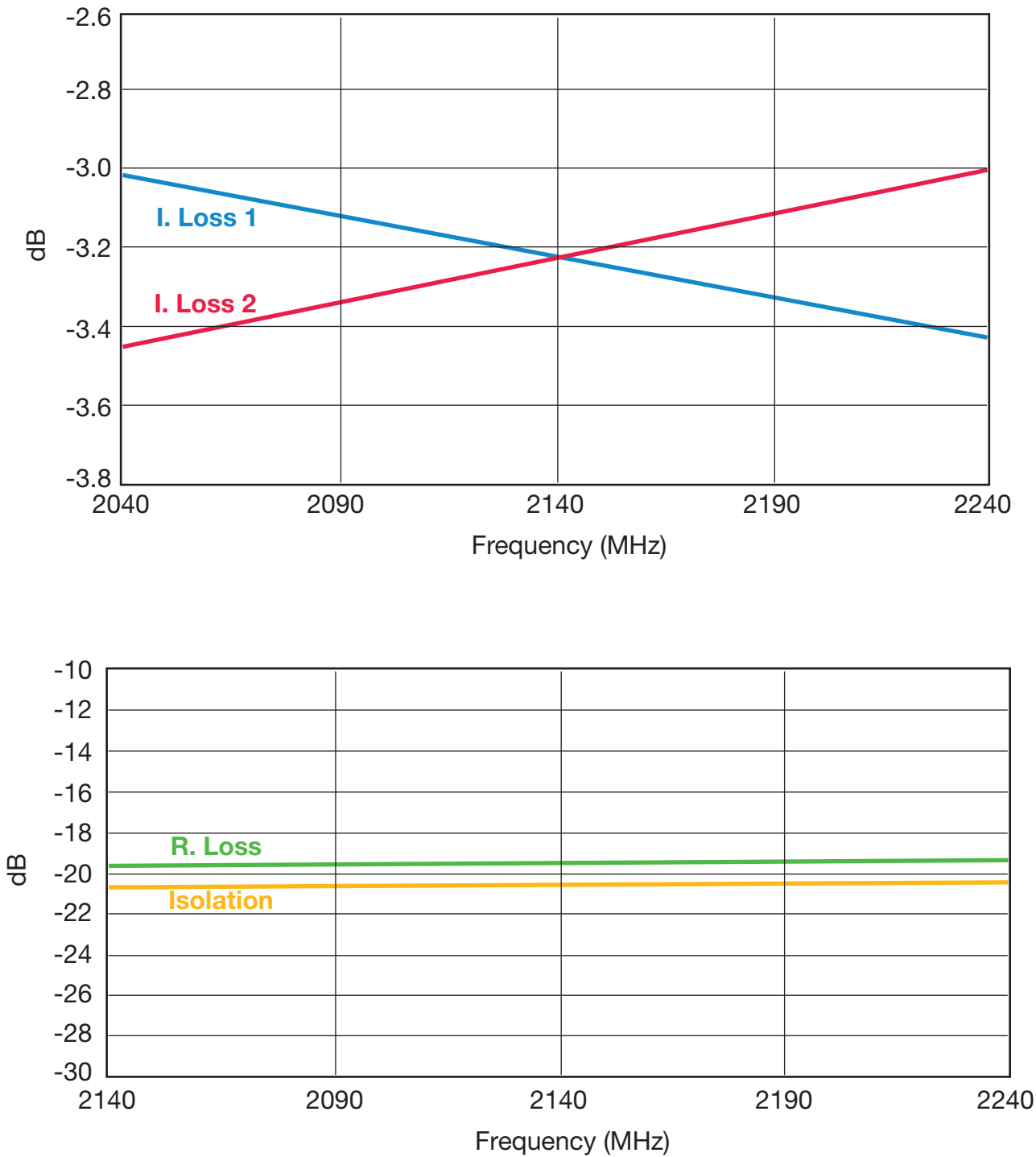
1950 ± 50MHZ DB0805A1950ASTR



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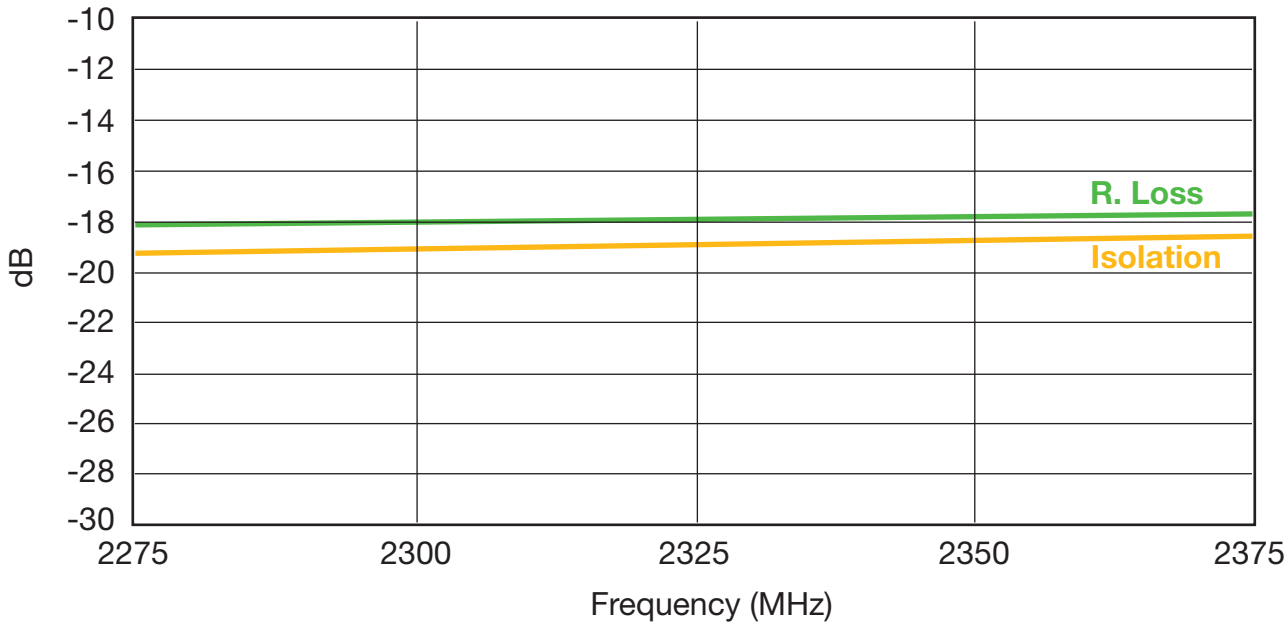
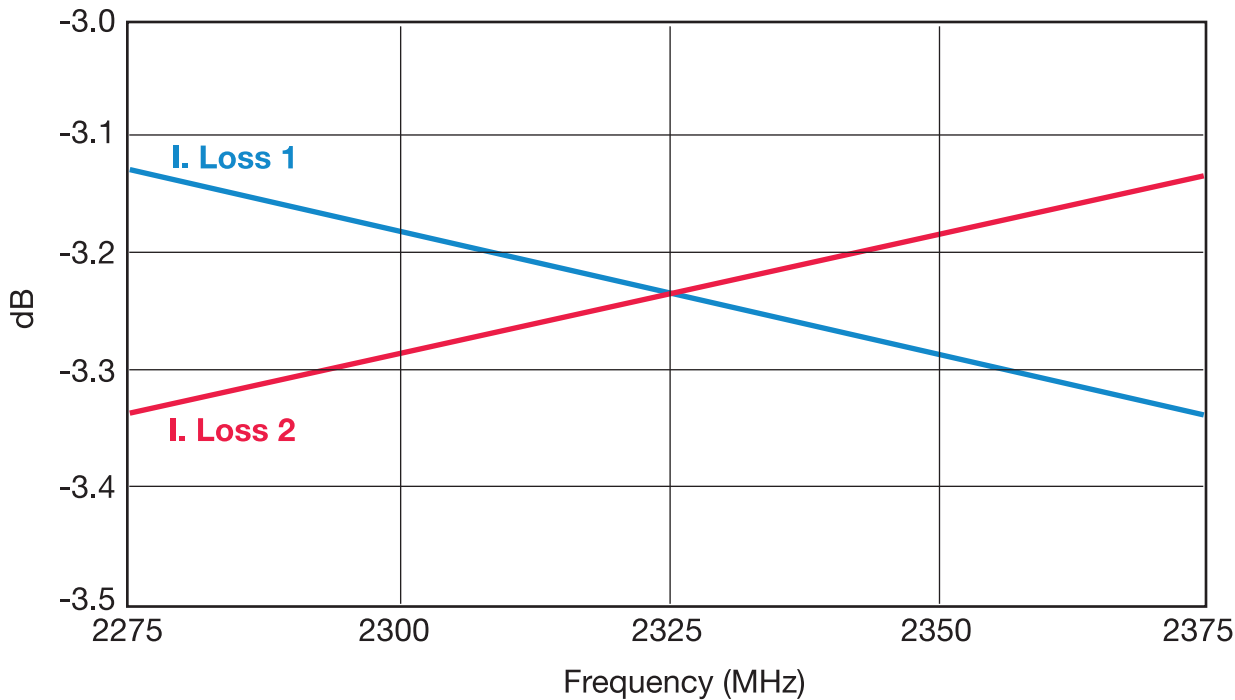
2140 ± 50MHZ DB0805A2140ASTR



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2325 ± 50MHZ DB0805A2325ASTR



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GENERAL DESCRIPTION

These jigs are designed for testing the DB0805 3dB 90° Couplers using a Vector Network Analyzer.

They consist of a dielectric substrate, having 50Ω microstrips as conducting lines and a bottom ground plane located at a distance of 0.254mm from the microstrips.

The substrate used is Neltec's NH9338ST0254C1BC.

The connectors are SMA type (female), 'Johnson Components Inc.' Product

P/N: 142-0701-841.

Both a measurement jig and a calibration jig are provided.

The calibration jig is designed for a full 2-port calibration, and consists of an open line, short line and through line. LOAD calibration can be done by a 50Ω SMA termination.

MEASUREMENT PROCEDURE

When measuring a component, it can be either soldered or pressed using a

non-metallic stick until all four ports touch the appropriate pads.

Set the VNA to the relevant frequency band. Connect the VNA using a 10dB attenuator on the jig terminal connected to port 2. Follow the VNA's instruction manual and use the [calibration jwwig](#) to perform a full 2-port calibration in the required bandwidths.

Place the coupler on the **measurement jig** as follows:

| | |
|-------------------------------------|--|
| Input (Coupler) ➔ Connector 1 (Jig) | Output 1 (Coupler) ➔ Connector 3 (Jig) |
| 50Ω (Coupler) ➔ Connector 2 (Jig) | Output 2 (Coupler) ➔ Connector 4 (Jig) |

To measure **R. Loss** and **I. Loss 1** connect:

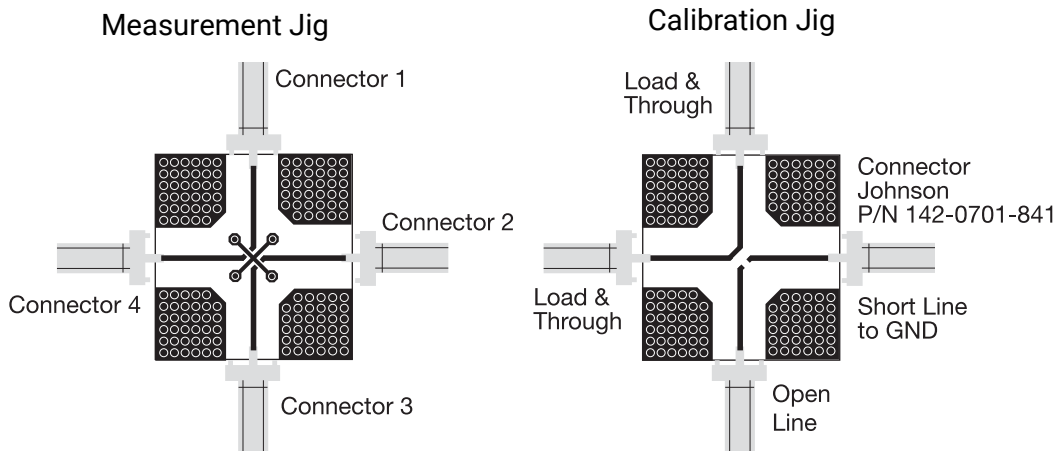
| | |
|----------------------------------|----------------------------------|
| Connector 1 (Jig) ➔ Port 1 (VNA) | Connector 3 (Jig) ➔ Port 2 (VNA) |
| Connector 2 (Jig) ➔ 50Ω | Connector 4 (Jig) ➔ 50Ω |

To measure **R. Loss** and **I. Loss 2** connect:

| | |
|----------------------------------|----------------------------------|
| Connector 1 (Jig) ➔ Port 1 (VNA) | Connector 3 (Jig) ➔ 50Ω |
| Connector 2 (Jig) ➔ 50Ω | Connector 4 (Jig) ➔ Port 2 (VNA) |

To measure **Isolation** connect:

| | |
|-------------------------|----------------------------------|
| Connector 1 (Jig) ➔ 50Ω | Connector 3 (Jig) ➔ Port 1 (VNA) |
| Connector 2 (Jig) ➔ 50Ω | Connector 4 (Jig) ➔ Port 2 (VNA) |



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[DB0805A0967AWTR\500](#) [DB0805A1350AWTR](#) [DB0805A1452AWTR](#) [DB0805A1542AWTR](#) [DB0805A1575AWTR](#)
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[DB0805A1950AWTR](#) [DB0805A1960AWTR](#) [DB0805A2140AWTR](#) [DB0805A2250AWTR](#) [DB0805A2325AWTR](#)
[DB0805A2650AWTR](#) [DB0805A2017ASTR](#) [DB0805A2017ASTR\500](#) [DB0805A2325ASTR](#) [DB0805A1850ASTR\500](#)
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