Thin-Film RF/Microwave Directional Couplers
CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°
DB0603N 3dB 90° Couplers

KYOCERA
AVX

GENERAL DESCRIPTION
RFAP TECHNOLOGY
The DB0603N 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 RFAP LGA 3dB 90° Coupler will be offered in a variety of frequency bands compatible with various types of high frequency wireless systems.

APPLICATIONS
- 4G LTE
- 5G LTE
- Base Stations.
- Automotive
- Industrial
- Balanced Amplifiers and Signal Distribution in Wireless Communications

FEATURES
- Miniature 0603 size
- Low I. Loss
- High Isolation
- Surface Mountable
- RoHS Compliant
- Supplied on T&R
- Power Rating: 10W RF Continuous

RoHS COMPLIANT

LAND GRID ARRAY ADVANTAGES:
- Inherent Low Profile
- Self Alignment during Reflow
- Excellent Solderability
- Low Parasitics
- Better Heat Dissipation

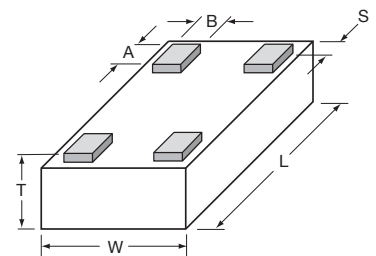## RECOMMENDED PAD LAYOUT DIMENSIONS:
millimeters (inches)

0.33 ±0.04
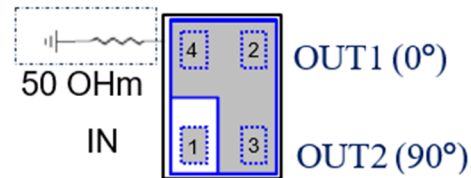
0.54 ±0.025

0.86 ±0.05

0.54 ±0.035
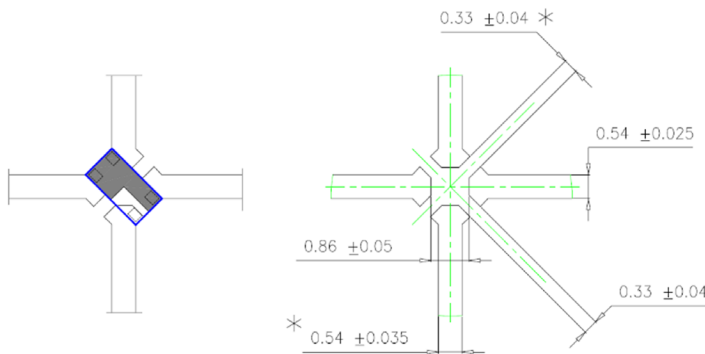
0.33 ±0.04

DIMENSIONS:
millimeters (inches)

L	1.60±0.10 (0.063±0.004)
W	0.84±0.10 (0.033±0.004)
T	0.60±0.10 (0.024±0.004)
A	0.25±0.05 (0.010±0.002)
B	0.20±0.05 (0.008±0.002)
S	0.05±0.05 (0.002±0.002)

BOTTOM VIEW

PINOUT INFORMATION

50 OHm
IN

4 2   OUT1 (0°)
1 3   OUT2 (90°)

* 50 Ohm external resistor must be placed between 50 Ohm terminal and GND plane

ELECTRICAL PARAMETERS

Part Number	Frequency MHz		Port Impedance Ω	Return Loss [dB]		Isolation [dB]		Insertion Loss [dB]		Ampltidue Balance [dB]		Phase Balance (Relative to 90°) Deg		Power Handing Watts
	Min.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Typ.	Max.	Typ.	Max.	Typ.	Max	Max.
DB0603N2140ANTR	2040	2240	50	15	26	15	23	0.30	0.40	0.50	0.80	2	3	10
DB0603N2400ANTR	2300	2500	50	12	17	15	23	0.25	0.35	0.30	0.80	2	3	10
DB0603N2600ANTR	2400	2800	50	12	17	15	23	0.25	0.35	0.30	0.80	2	3	10
DB0603N3000ANTR	2850	3150	50	12	15	15	26	0.20	0.30	0.30	0.80	2	3	10
DB0603N3500ANTR	3300	3700	50	12	15	15	26	0.20	0.30	0.30	0.80	2	3	10
DB0603N4600ANTR	4200	5000	50	12	16	12	15	0.50	0.70	0.40	1.00	1.5	3	10
DB0603N5500ANTR	5100	5900	50	12	16	10	14	0.60	0.80	0.80	1.50	1	3	10
DB0603N5800ANTR	5600	6000	50	12	16	12	17	0.40	0.90	0.30	0.90	2	3	10

NOTE: Additional Frequencies Available Upon Request

Thin-Film RF/Microwave Directional Couplers
CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°
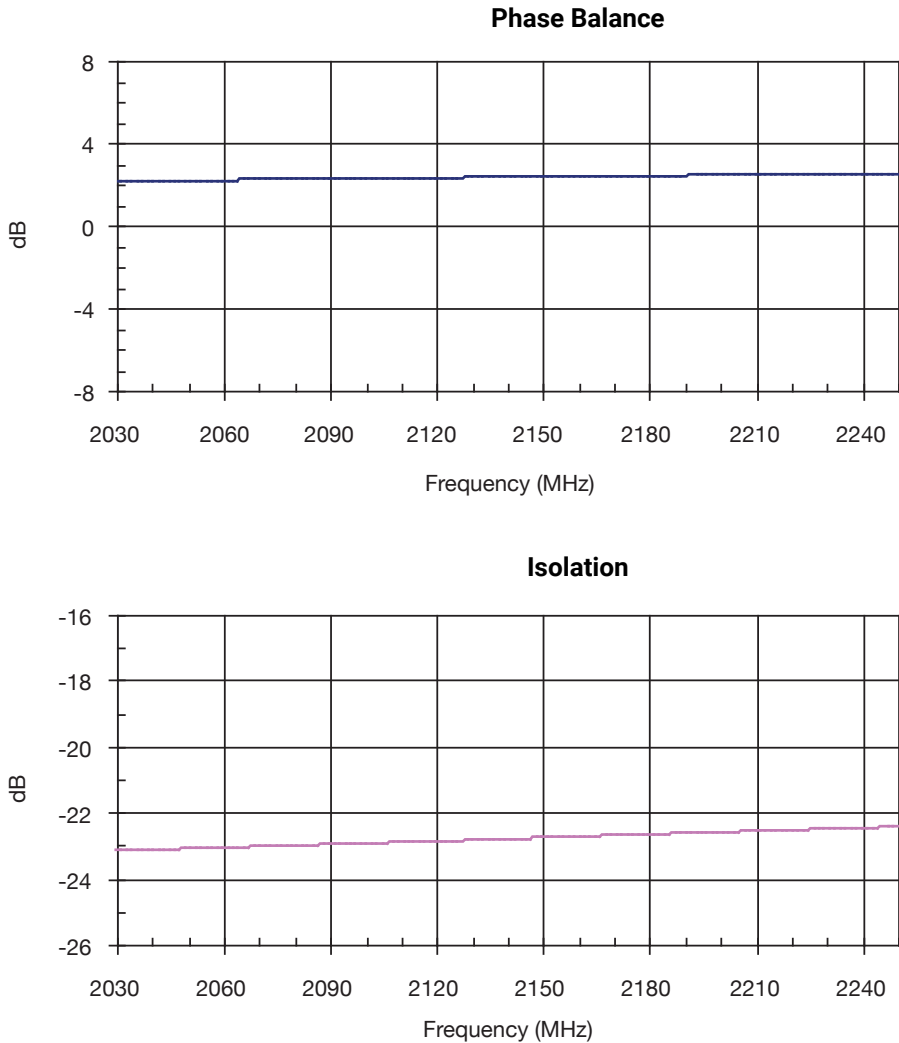## DB0603N 3dB 90° Couplers

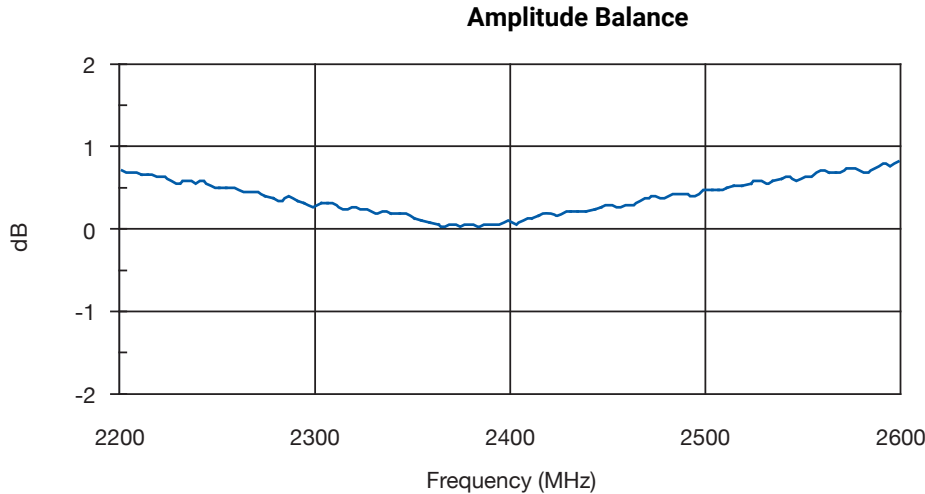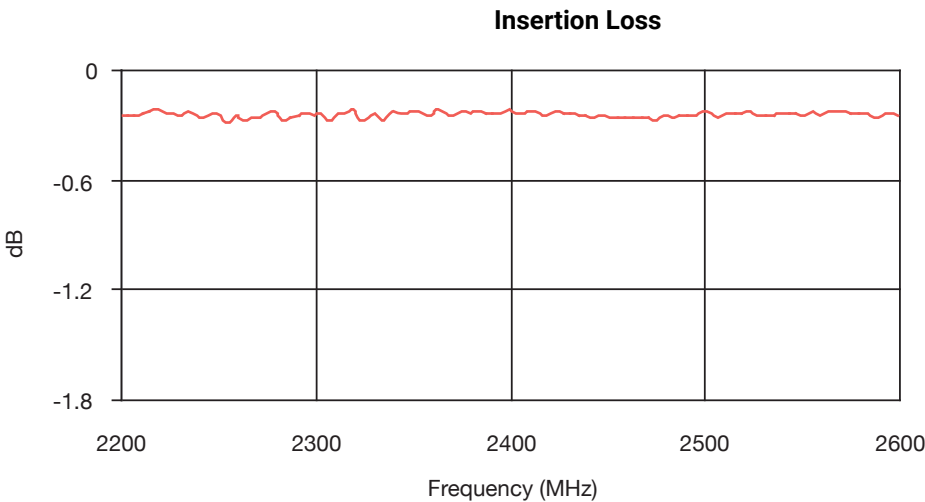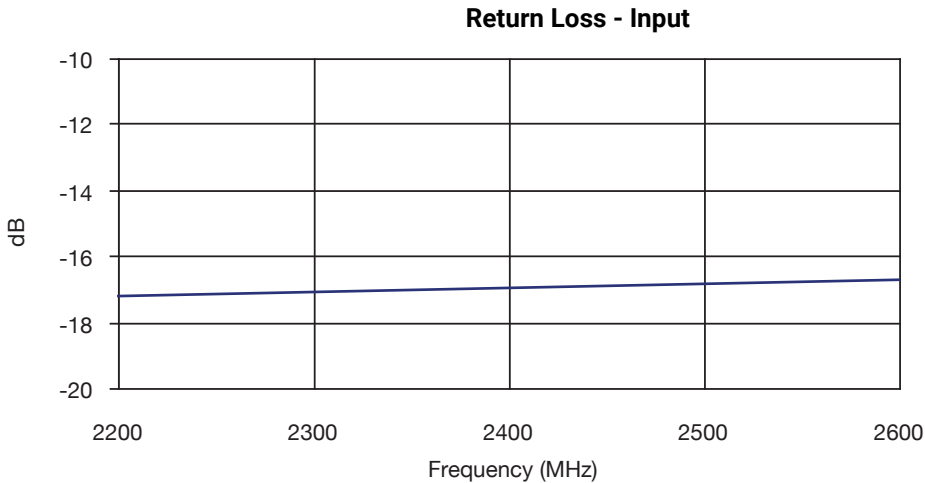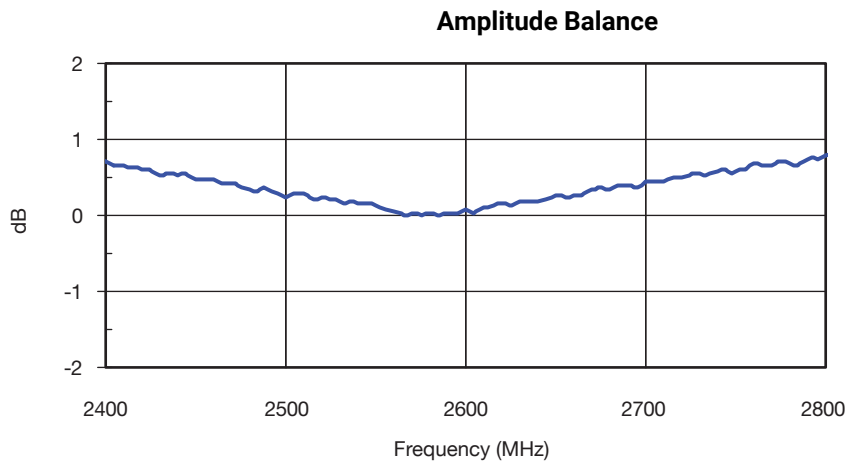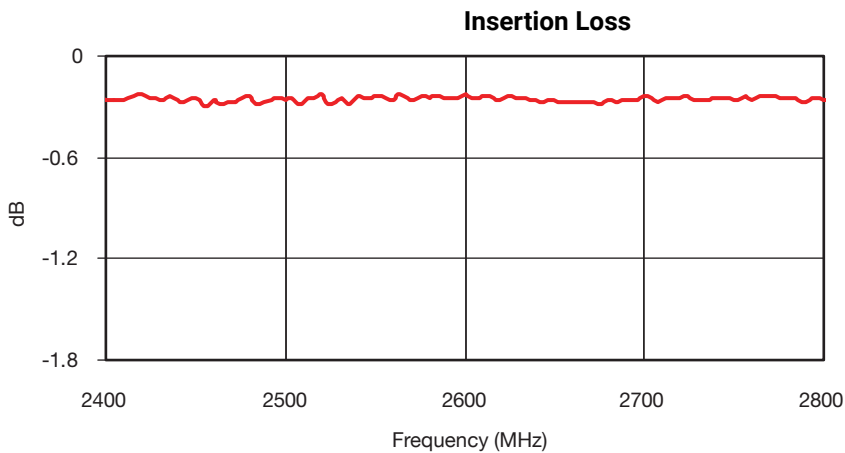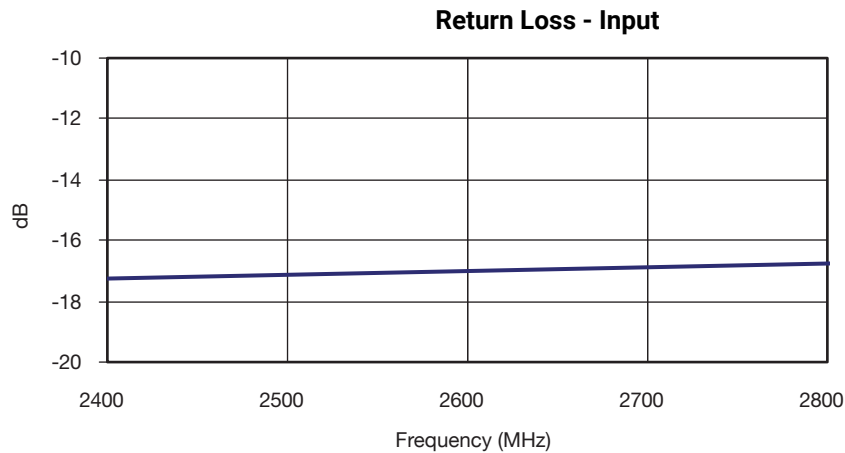**2040MHZ TO 2240MHZ DB0603N2140ANTR**

Return Loss - Input

Insertion Loss

Amplitude Balance

TDS-RFM-0062 | Rev 2

– RF MICROWAVE PRODUCTS –

Thin-Film RF/Microwave Directional Couplers
CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°
DB0603N 3dB 90° Couplers

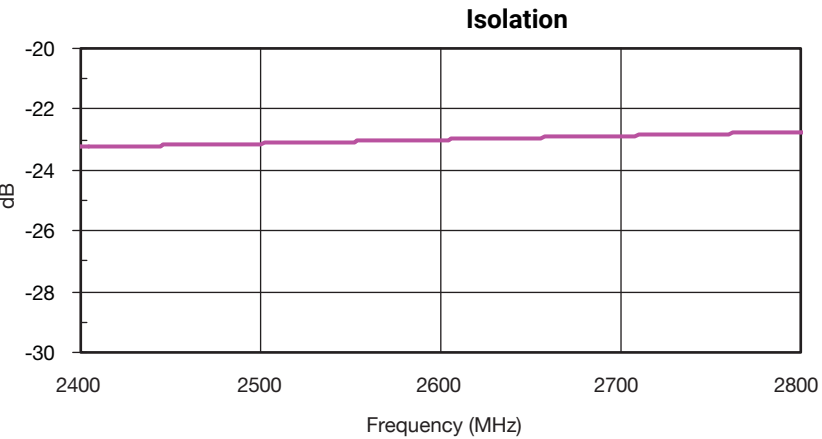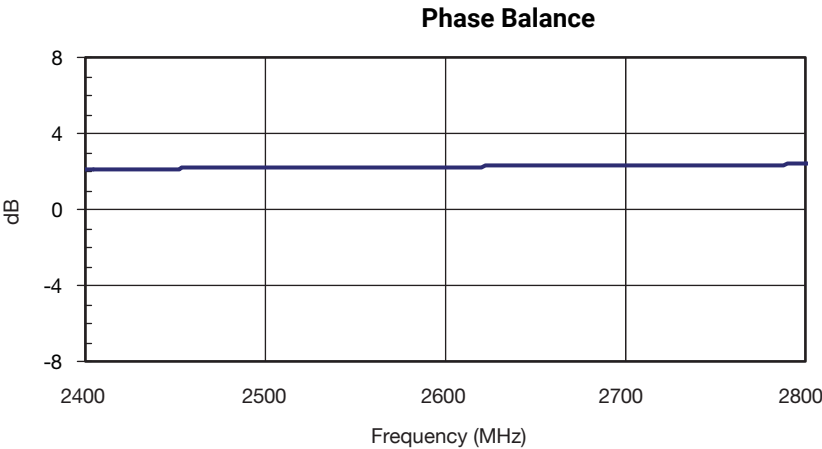**2040MHZ TO 2240MHZ DB0603N2140ANTR**

Phase Balance

Isolation

TDS-RFM-0062 | Rev 2
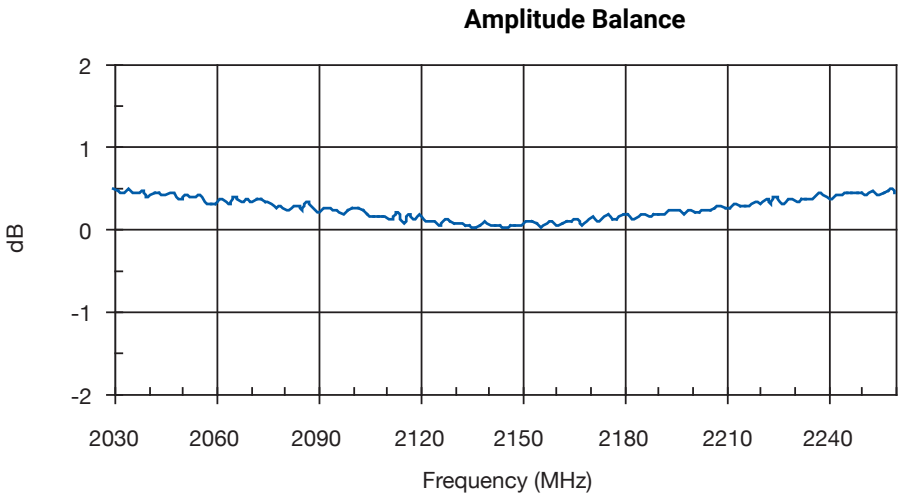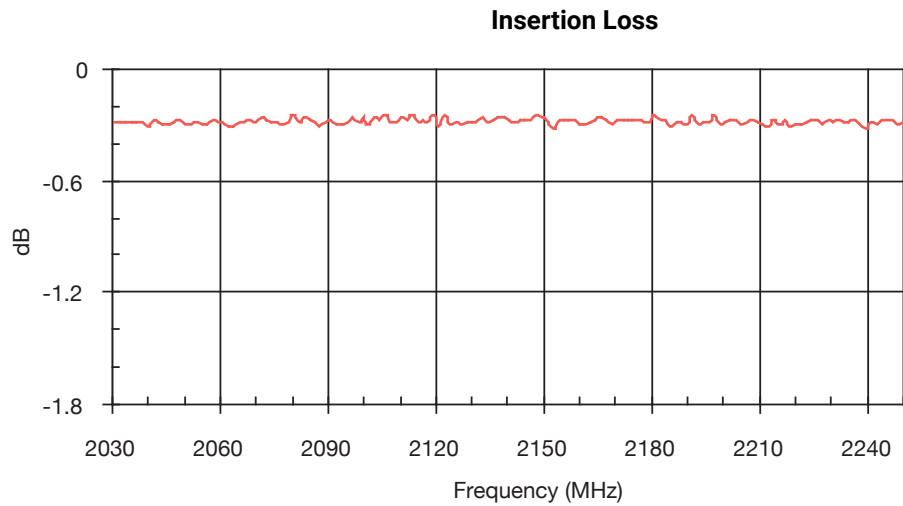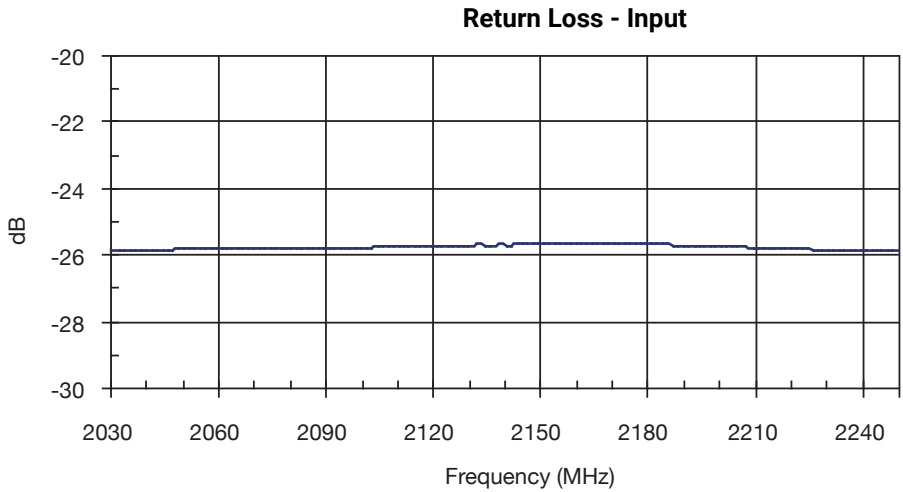
Thin-Film RF/Microwave Directional Couplers
CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°
DB0603N 3dB 90° Couplers

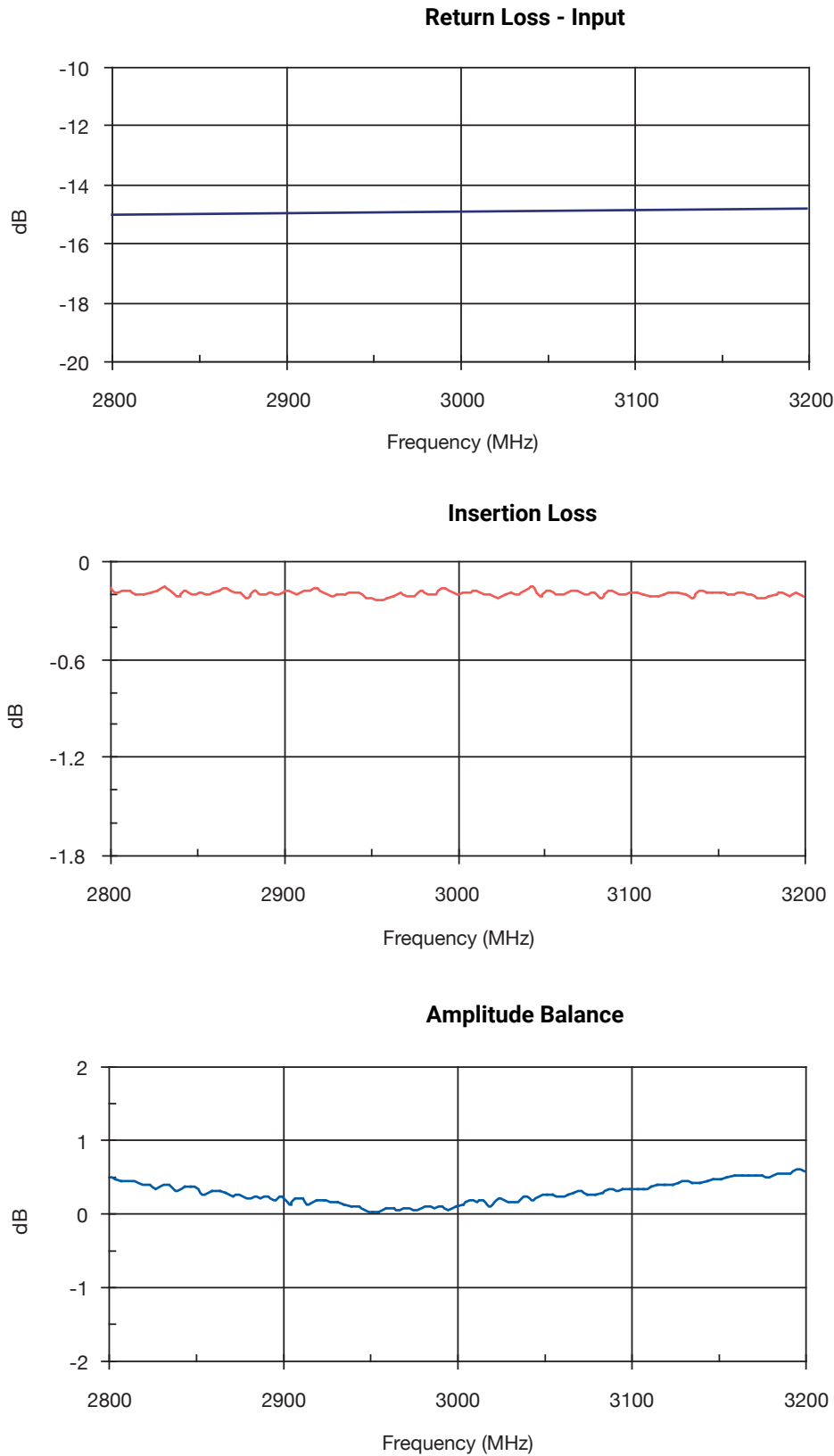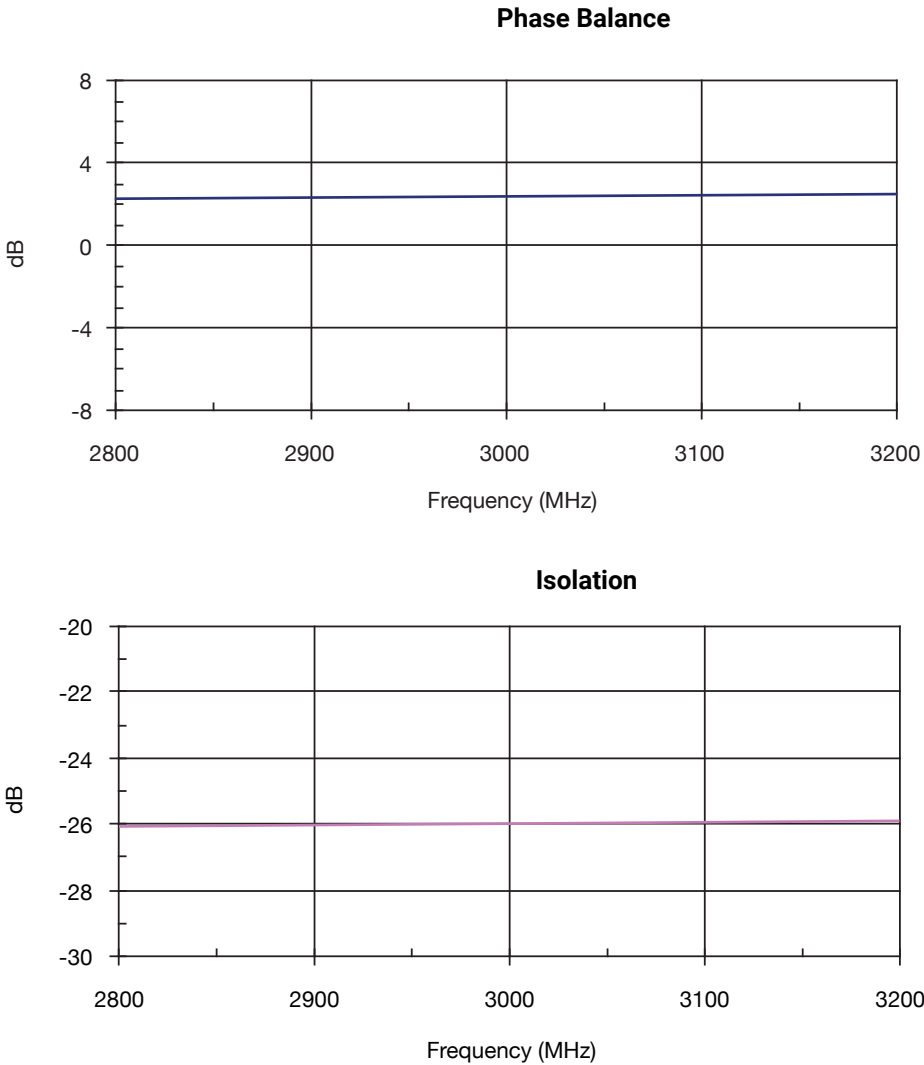**2200MHZ TO 2600MHZ DB0603N2400ANTR**
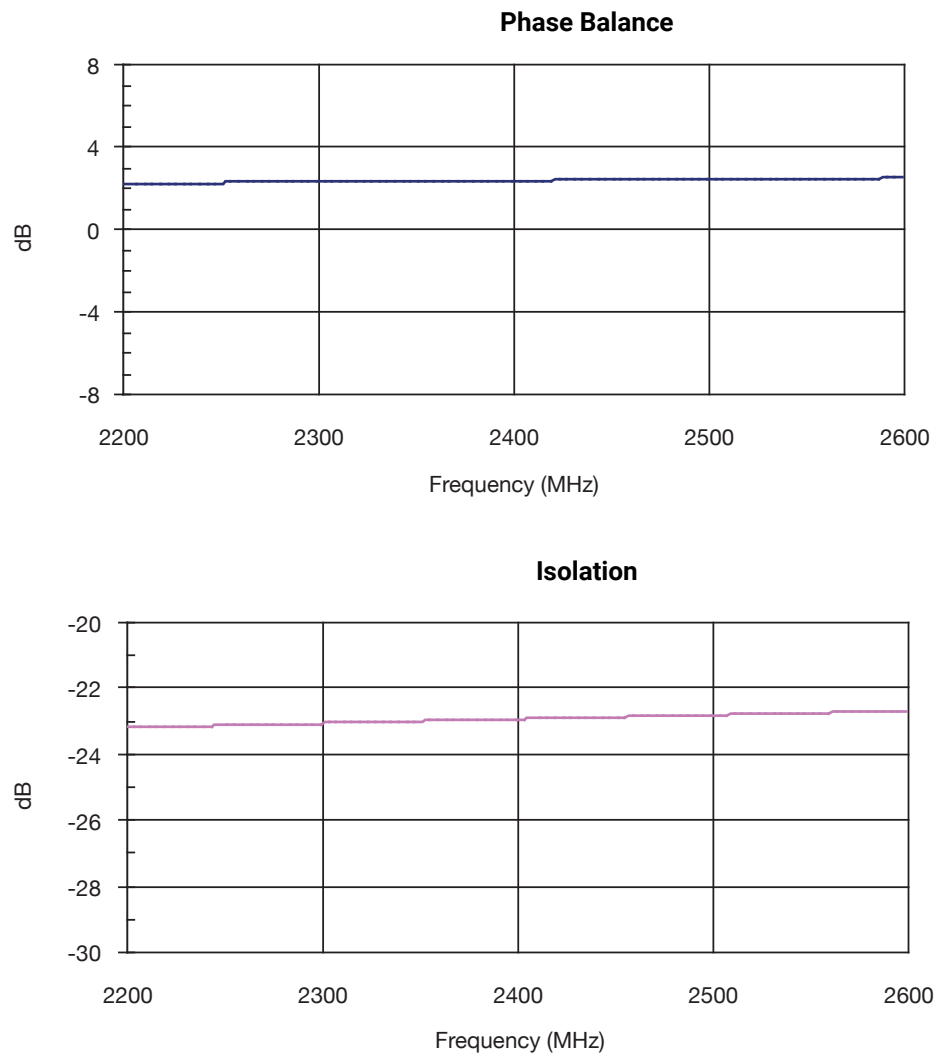
Return Loss - Input

Insertion Loss

Amplitude Balance

TDS-RFM-0062 | Rev 2

Thin-Film RF/Microwave Directional Couplers
CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°
DB0603N 3dB 90° Couplers

KYOCERA AVX

Phase Balance

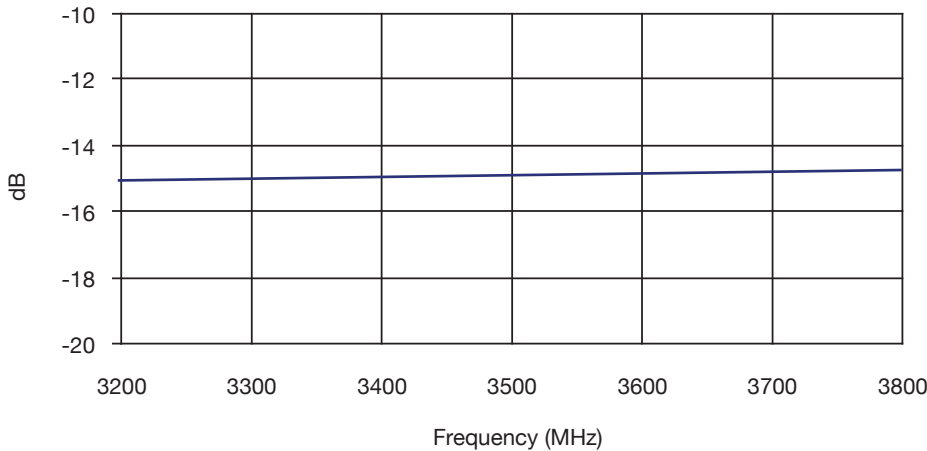**Isolation**

TDS-RFM-0062 | Rev 2

Thin-Film RF/Microwave Directional Couplers
CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°
DB0603N 3dB 90° Couplers

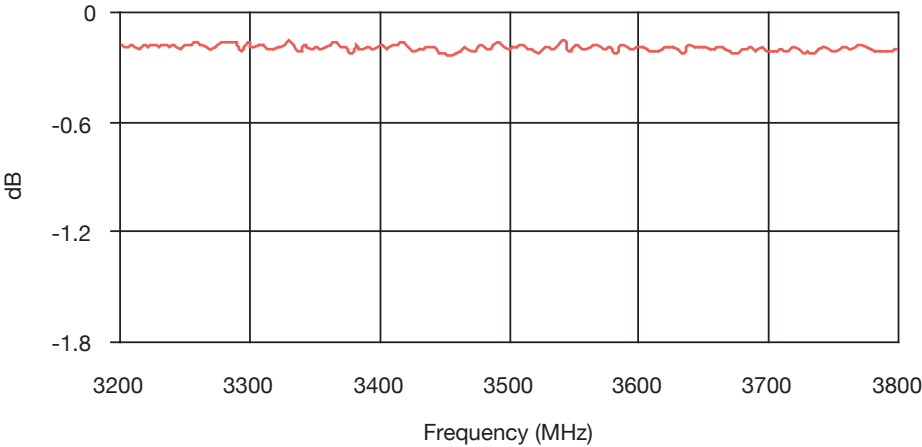**2400MHZ TO 2800MHZ DB0603N2600ANTR**

Return Loss - Input

Insertion Loss

Amplitude Balance

TDS-RFM-0062 | Rev 2

2400MHZ TO 2800MHZ DB0603N2600ANTR

Phase Balance

Isolation

Thin-Film RF/Microwave Directional Couplers
CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°
DB0603N 3dB 90° Couplers
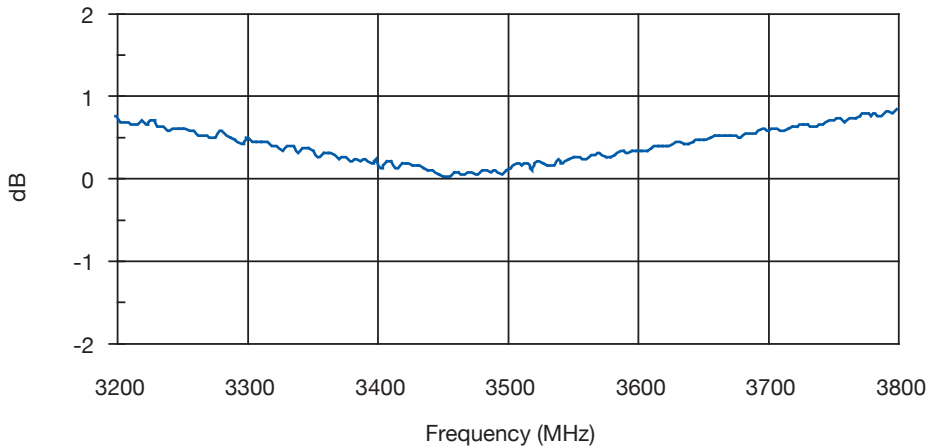
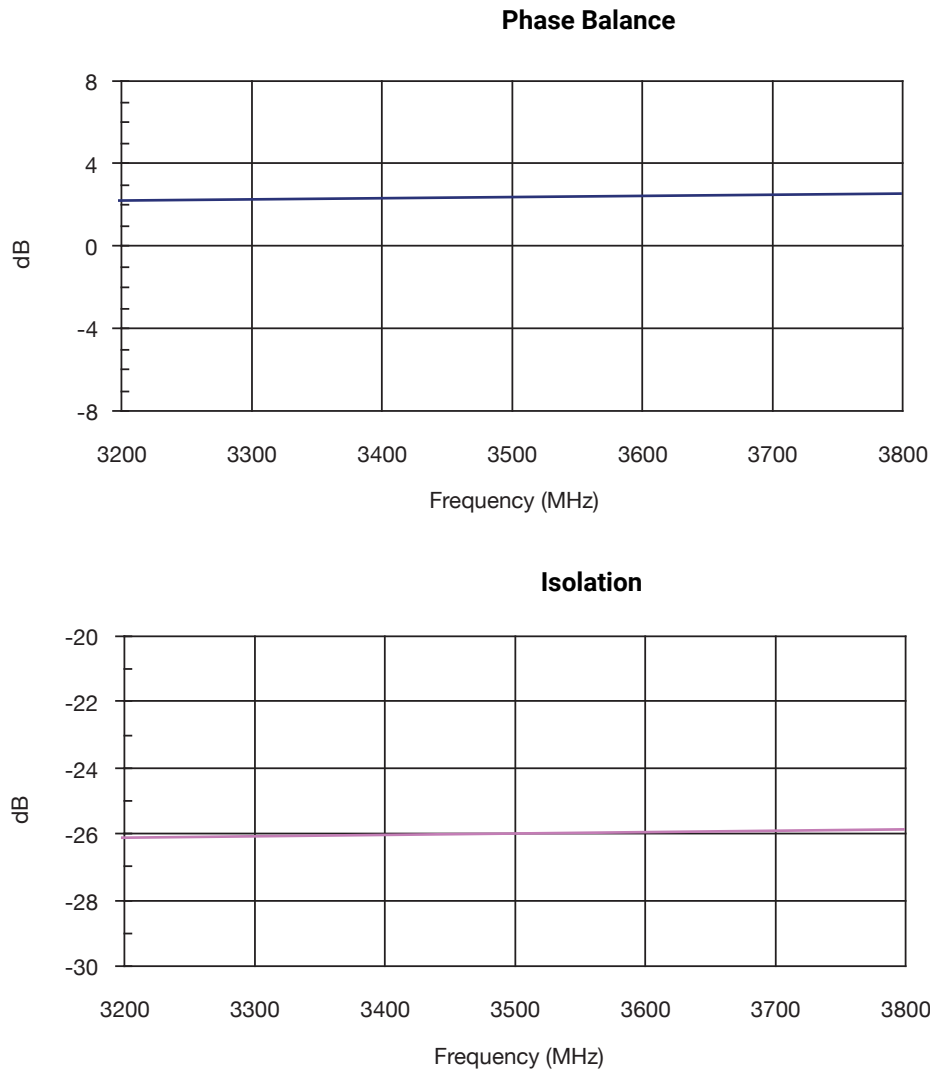**2850MHZ TO 3150MHZ DB0603N3000ANTR**

Return Loss - Input

Insertion Loss

Amplitude Balance

TDS-RFM-0062 | Rev 2

KYOCERA
AVX

2850MHZ TO 3150MHZ DB0603N3000ANTR

Phase Balance

Isolation
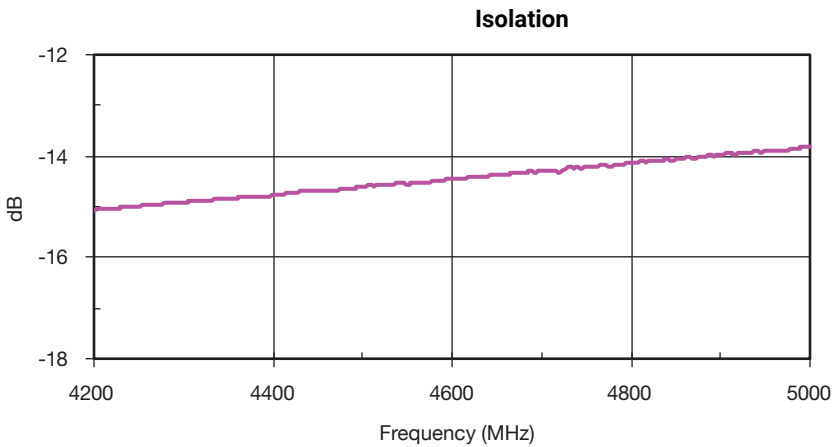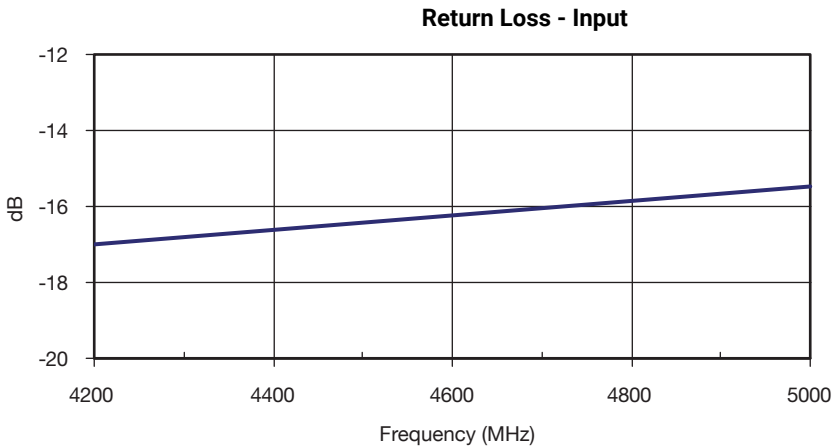
Thin-Film RF/Microwave Directional Couplers
CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°
DB0603N 3dB 90° Couplers

KYOCERA
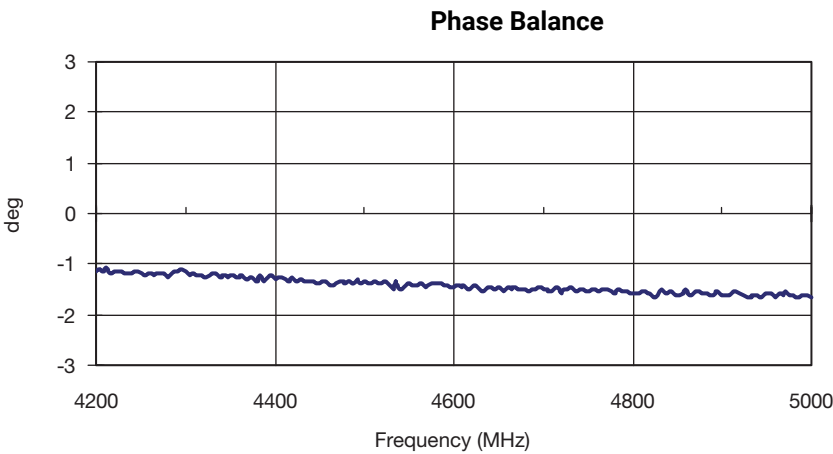**AVX**

3200MHZ TO 3800MHZ DB0603N3500ANTR

Return Loss - Input

Insertion Loss

Amplitude Balance

Thin-Film RF/Microwave Directional Couplers
CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°
DB0603N 3dB 90° Couplers

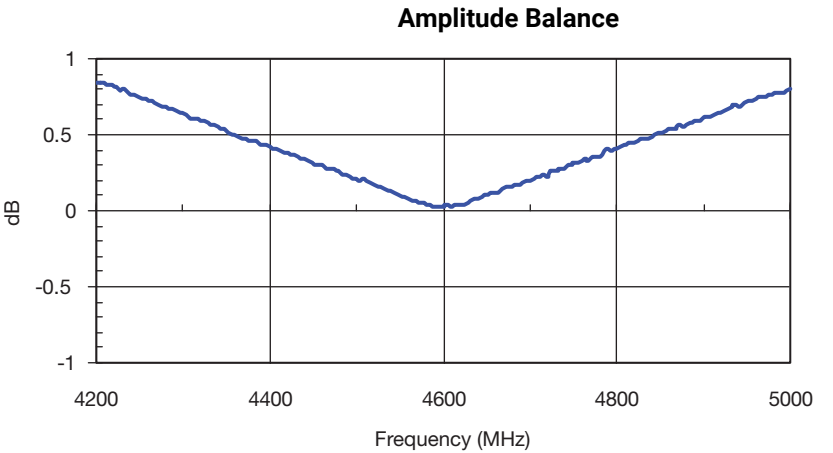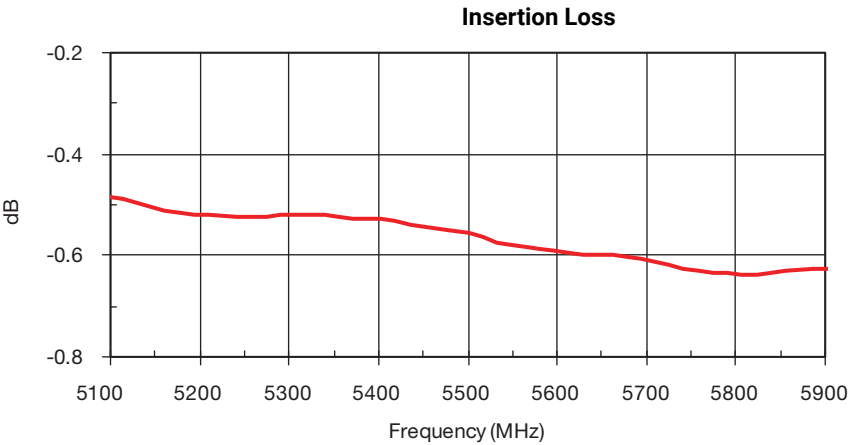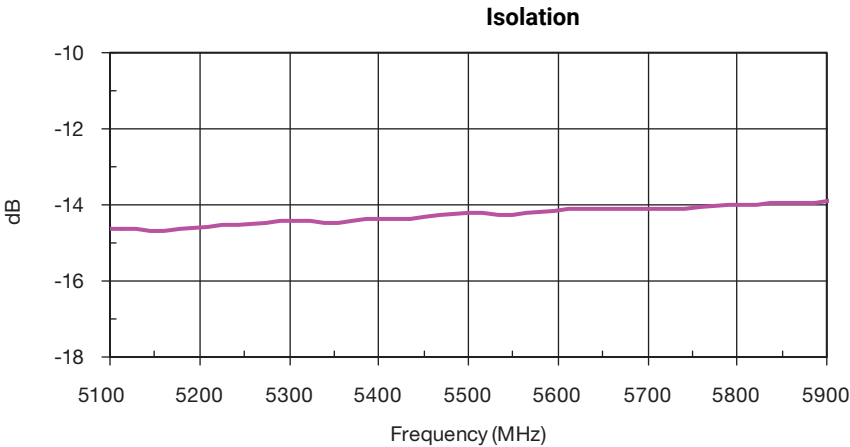**3200MHZ TO 3800MHZ DB0603N3500ANTR**

Phase Balance

Isolation

TDS-RFM-0062 | Rev 2

4200MHZ TO 5000MHZ DB0603N4600ANTR

Return Loss - Input

Isolation

Insertion Loss

TDS-RFM-0062 | Rev 2

– RF MICROWAVE PRODUCTS –

KYOCERA

4200MHZ TO 5000MHZ DB0603N4600ANTR

Amplitude Balance

Phase Balance

TDS-RFM-0062 | Rev 2

Thin-Film RF/Microwave Directional Couplers
CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°
DB0603N 3dB 90° Couplers

KYOCERA
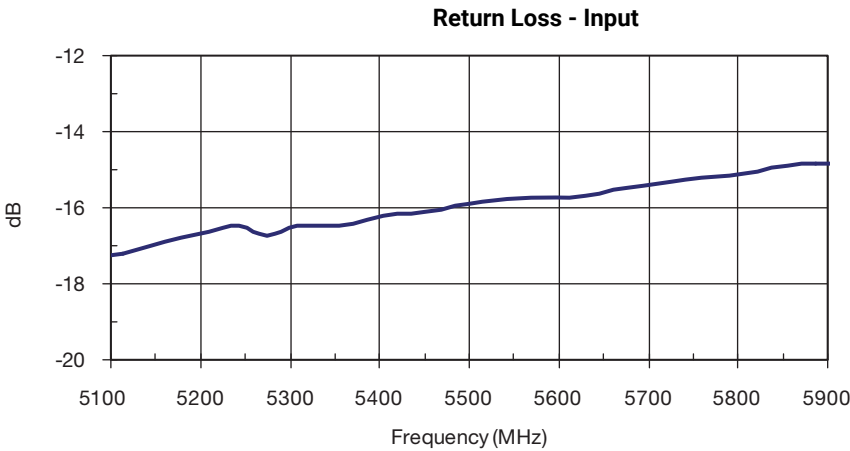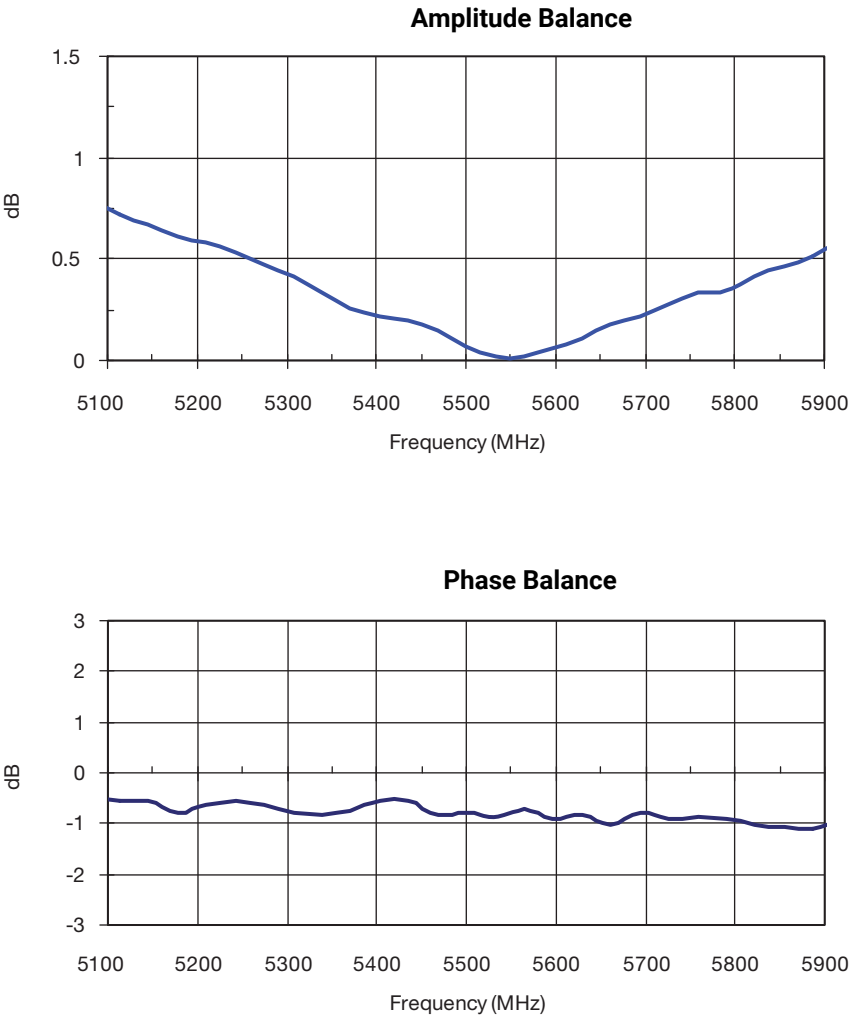**AVX**

5100MHZ TO 5900MHZ DB0603N5500ANTR

Return Loss - Input

Isolation

Insertion Loss

TDS-RFM-0062 | Rev 2

5100MHZ TO 5900MHZ DB0603N5500ANTR

Amplitude Balance

Phase Balance

Thin-Film RF/Microwave Directional Couplers
CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°
DB0603N 3dB 90° Couplers

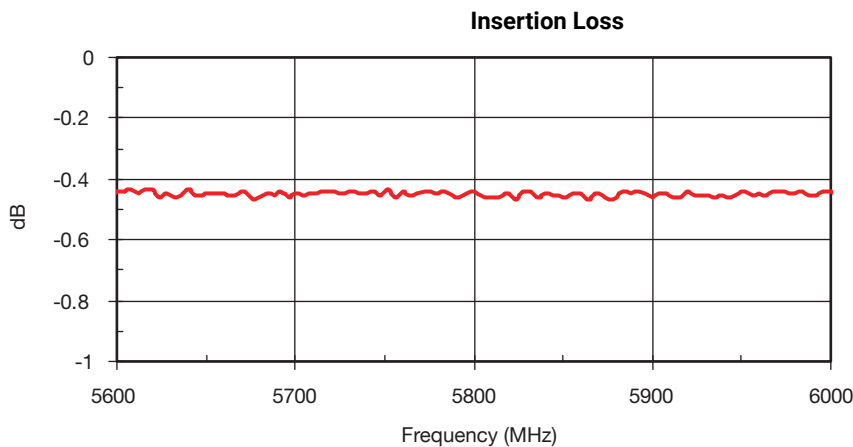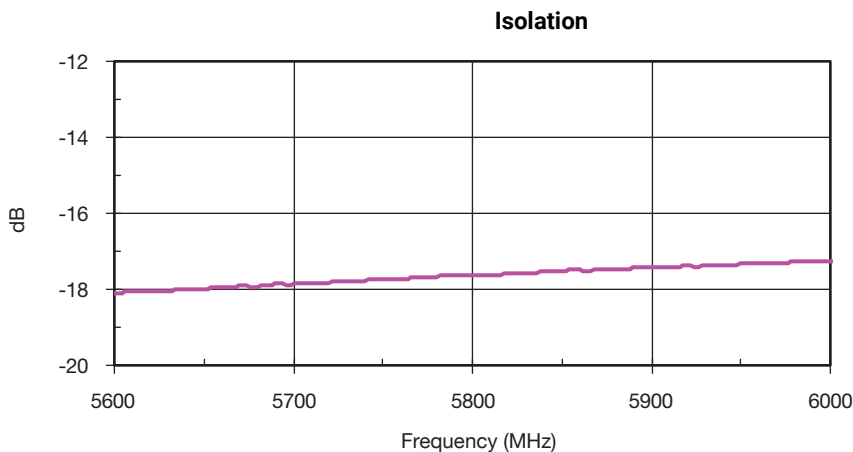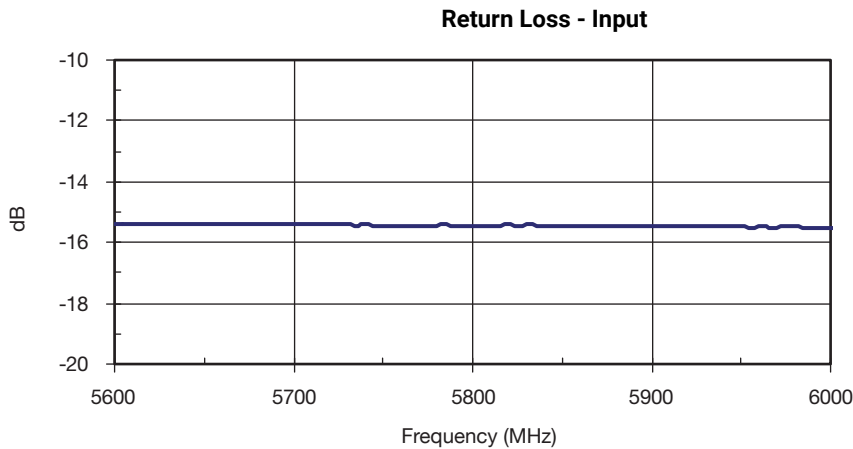**5600MHZ TO 6000MHZ DB0603N5800ANTR**

Return Loss - Input

Isolation

Insertion Loss

5600MHZ TO 6000MHZ DB0603N5800ANTR

Amplitude Balance

Phase Balance