

Thin-Film RF/Microwave Directional Couplers

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

CP0603 SMD Type



GENERAL DESCRIPTION

ITF (INTEGRATED THIN-FILM) TECHNOLOGY

The ITF SMD 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 Coupler is offered in a variety of frequency bands compatible with various types of high frequency wireless systems.

APPLICATIONS

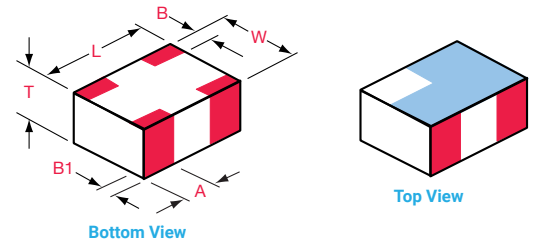
- 4G LTE
- 5G LTE
- Base Stations.
- Automotive
- Industrial
- Mobile Communications
- Satellite TV Receivers
- GPS
- Vehicle Location Systems
- Wireless LAN's

FEATURES

- Miniature Size: 0603
- Frequency Range: 800MHz - 3GHz
- Characteristic Impedance: 50Ω
- Operating / Storage Temp.: -40°C to +85°C
- Power Rating: 3W Continuous
- Low Profile
- Rugged Construction
- Taped and Reeled

DIMENSIONS:

millimeters (inches)



Bottom View

Top View

| | 0603 |
|-----------|----------------------------------|
| L | 1.6±0.1 (0.063±0.004) |
| W | 0.84±0.1 (0.033±0.004) |
| T | 0.60±0.1 (0.028±0.004) |
| A | 0.35±0.15 (0.014±0.006) |
| B | 0.175±0.1 (0.007±0.004) |
| B1 | 0.00±0.1/0-0.0 (0.00±0.004/-0.0) |

HOW TO ORDER

| | | | | | | |
|---------------------|-------------|----------|-------------|----------|-------------------------------|--------------------|
| CP | 0603 | X | **** | X | S | TR |
| Style | Size | Type | Frequency | Sub-Type | Termination Code | Packaging Code |
| Directional Coupler | 0603 | | MHz | | W = Sn90, Pb10 **S = Sn100 | TR = Tape and Reel |

**RoHS compliant

QUALITY INSPECTION

Finished parts are 100% tested for electrical parameters and visual characteristics. Each production lot is evaluated on a sample basis for:

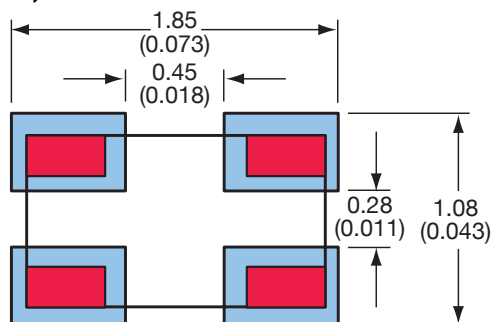
- Static Humidity: 85°C, 85% RH, 160 hours
- Endurance: 125°C, I_R, 4 hours

TERMINATION

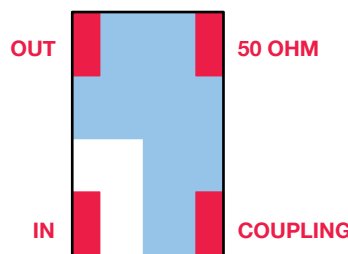
Nickel/Solder coating compatible with automatic soldering technologies: reflow, wave soldering, vapor phase and manual.

Recommended Pad Layout Dimensions

mm (inches)



TERMINALS (TOP VIEW)



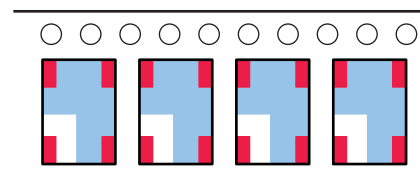
Not RoHS Compliant



LEAD-FREE
LEAD-FREE COMPATIBLE
COMPONENT



For RoHS compliant products,
please select correct termination style.



Orientation in tape

Thin-Film RF/Microwave Directional Couplers

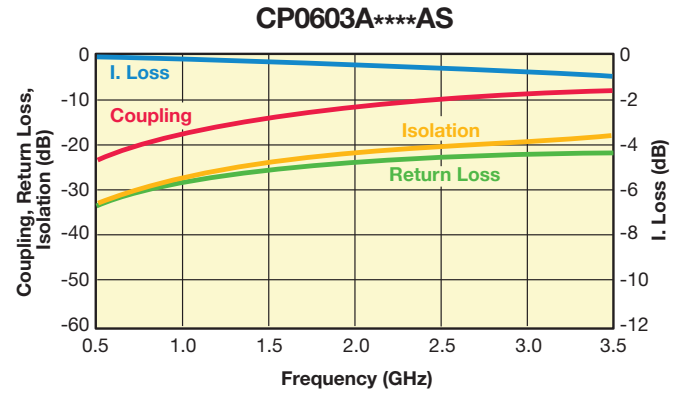
CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°

CP0603 SMD Type



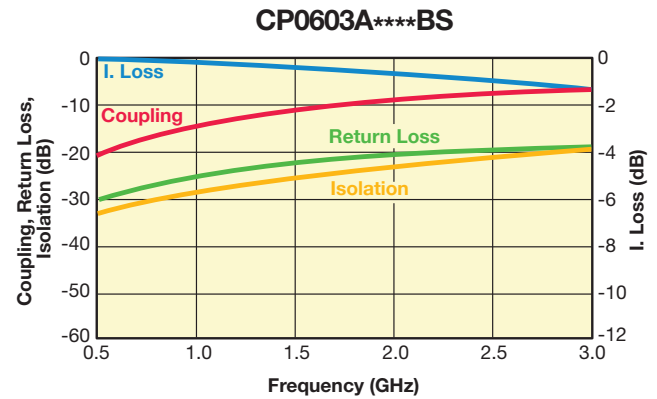
Coupler P/N CP0603A****AS

| P/N Examples | Frequency Band [MHz] | Coupling [dB] | I. Loss max | VSWR max |
|---------------|----------------------|---------------|-------------|----------|
| CP0603A0836AS | 824 - 849 | 18.5±1 | 0.25 | 1.2 |
| CP0603A0881AS | 869 - 894 | 18.5±1 | 0.25 | 1.2 |
| CP0603A0902AS | 890 - 915 | 18±1 | 0.25 | 1.2 |
| CP0603A0947AS | 935 - 960 | 17.5±1 | 0.25 | 1.2 |
| CP0603A0897AS | 880 - 915 | 18±1 | 0.25 | 1.2 |
| CP0603A0942AS | 925 - 960 | 17.5±1 | 0.25 | 1.2 |
| CP0603A1441AS | 1429 - 1453 | 14±1 | 0.4 | 1.2 |
| CP0603A1747AS | 1710 - 1785 | 12.5±1 | 0.6 | 1.2 |
| CP0603A1842AS | 1805 - 1880 | 12±1 | 0.6 | 1.2 |
| CP0603A1880AS | 1850 - 1910 | 12±1 | 0.6 | 1.2 |
| CP0603A1960AS | 1930 - 1990 | 11.5±1 | 0.65 | 1.2 |
| CP0603A1907AS | 1895 - 1920 | 12±1 | 0.6 | 1.2 |
| CP0603A1890AS | 1880 - 1900 | 12±1 | 0.6 | 1.2 |
| CP0603A2442AS | 2400 - 2484 | 10±1 | 0.85 | 1.2 |



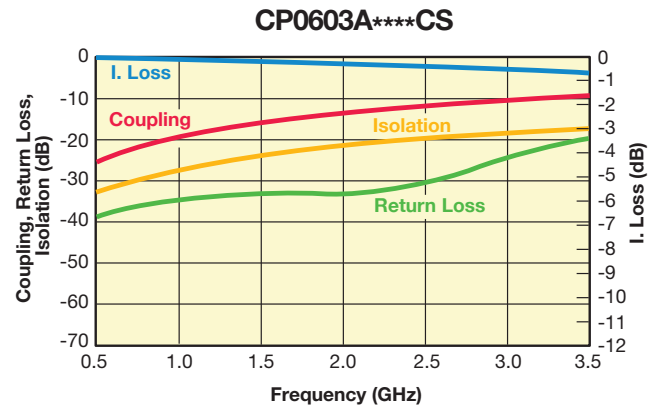
Coupler P/N CP0603A****BS

| P/N Examples | Frequency Band [MHz] | Coupling [dB] | I. Loss max | VSWR max |
|---------------|----------------------|---------------|-------------|----------|
| CP0603A0836BS | 824 - 849 | 16±1 | 0.25 | 1.2 |
| CP0603A0881BS | 869 - 894 | 15.5±1 | 0.25 | 1.2 |
| CP0603A0902BS | 890 - 915 | 15.5±1 | 0.25 | 1.2 |
| CP0603A0947BS | 935 - 960 | 15±1 | 0.25 | 1.2 |
| CP0603A0897BS | 880 - 915 | 15.5±1 | 0.25 | 1.2 |
| CP0603A0942BS | 925 - 960 | 15±1 | 0.25 | 1.2 |
| CP0603A1441BS | 1429 - 1453 | 11.5±1 | 0.55 | 1.2 |
| CP0603A1747BS | 1710 - 1785 | 10±1 | 0.8 | 1.3 |
| CP0603A1842BS | 1805 - 1880 | 9.5±1 | 0.8 | 1.3 |
| CP0603A1880BS | 1850 - 1910 | 9±1 | 0.8 | 1.4 |
| CP0603A1960BS | 1930 - 1990 | 9±1 | 0.8 | 1.4 |
| CP0603A1907BS | 1895 - 1920 | 9±1 | 0.8 | 1.4 |
| CP0603A1890BS | 1880 - 1900 | 9±1 | 0.8 | 1.4 |
| CP0603A2442BS | 2400 - 2484 | 7.5±1 | 1.1 | 1.4 |



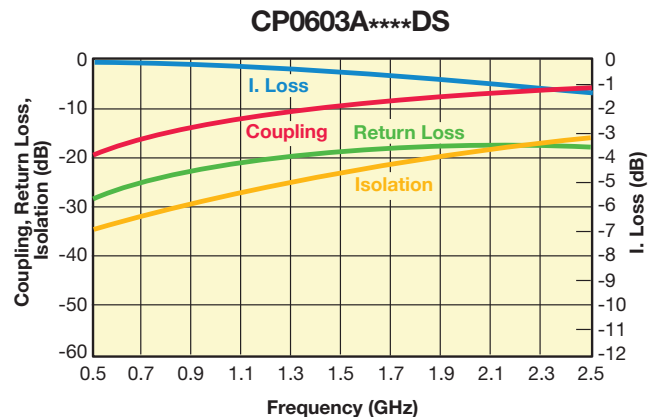
Coupler P/N CP0603A****CS

| P/N Examples | Frequency Band [MHz] | Coupling [dB] | I. Loss max | VSWR max |
|---------------|----------------------|---------------|-------------|----------|
| CP0603A0836CS | 824 - 849 | 21±1 | 0.25 | 1.2 |
| CP0603A0881CS | 869 - 894 | 20.5±1 | 0.25 | 1.2 |
| CP0603A0902CS | 890 - 915 | 20.5±1 | 0.25 | 1.2 |
| CP0603A0947CS | 935 - 960 | 20±1 | 0.25 | 1.2 |
| CP0603A0897CS | 880 - 915 | 20.5±1 | 0.25 | 1.2 |
| CP0603A0942CS | 925 - 960 | 20±1 | 0.25 | 1.2 |
| CP0603A1441CS | 1429 - 1453 | 16.5±1 | 0.55 | 1.2 |
| CP0603A1747CS | 1710 - 1785 | 15±1 | 0.8 | 1.2 |
| CP0603A1842CS | 1805 - 1880 | 14.5±1 | 0.8 | 1.2 |
| CP0603A1880CS | 1850 - 1910 | 14.5±1 | 0.8 | 1.2 |
| CP0603A1960CS | 1930 - 1990 | 14±1 | 0.8 | 1.2 |
| CP0603A1907CS | 1895 - 1920 | 14.5±1 | 0.8 | 1.2 |
| CP0603A1890CS | 1880 - 1900 | 14.5±1 | 0.8 | 1.2 |
| CP0603A2442CS | 2400 - 2484 | 12.5±1 | 1.1 | 1.2 |



Coupler P/N CP0603A****DS

| P/N Examples | Frequency Band [MHz] | Coupling [dB] | I. Loss max | VSWR max |
|---------------|----------------------|---------------|-------------|----------|
| CP0603A0836DS | 824 - 849 | 15.0±1 | 0.25 | 1.2 |
| CP0603A0881DS | 869 - 894 | 14.5±1 | 0.25 | 1.2 |
| CP0603A0902DS | 890 - 915 | 14.5±1 | 0.25 | 1.2 |
| CP0603A0947DS | 935 - 960 | 14±1 | 0.25 | 1.2 |
| CP0603A0897DS | 880 - 915 | 14.5±1 | 0.25 | 1.2 |
| CP0603A0942DS | 925 - 960 | 14±1 | 0.25 | 1.2 |
| CP0603A1441DS | 1429 - 1453 | 10.5±1 | 0.7 | 1.3 |
| CP0603A1747DS | 1710 - 1785 | 9±1 | 0.9 | 1.5 |
| CP0603A1842DS | 1805 - 1880 | 8.5±1 | 0.9 | 1.5 |
| CP0603A1880DS | 1850 - 1910 | 8.5±1 | 1.0 | 1.5 |
| CP0603A1960DS | 1930 - 1990 | 8±1 | 1.0 | 1.5 |
| CP0603A1907DS | 1895 - 1920 | 8.5±1 | 1.0 | 1.5 |
| CP0603A1890DS | 1880 - 1900 | 8.5±1 | 1.0 | 1.5 |
| CP0603A2442DS | 2400 - 2484 | 6.5±1 | 1.5 | 1.5 |



Important: Couplers can be used at any frequency within the indicated range.



The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.

Thin-Film RF/Microwave Directional Couplers

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

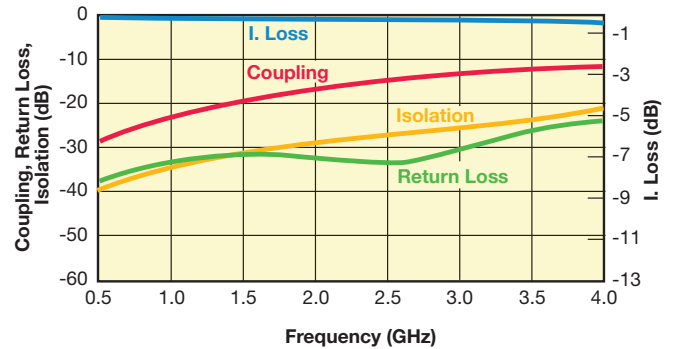
CP0603 SMD Type



Coupler P/N CP0603B****AS

| P/N Examples | Frequency Band [MHz] | Coupling [dB] | I. Loss max | VSWR max |
|---------------|----------------------|---------------|-------------|----------|
| CP0603B0836AS | 824 - 849 | 24.5±1 | 0.2 | 1.2 |
| CP0603B0881AS | 869 - 894 | 24±1 | 0.2 | 1.2 |
| CP0603B0902AS | 890 - 915 | 24±1 | 0.2 | 1.2 |
| CP0603B0947AS | 935 - 960 | 23.5±1 | 0.2 | 1.2 |
| CP0603B0897AS | 880 - 915 | 24±1 | 0.2 | 1.2 |
| CP0603B0942AS | 925 - 960 | 23.5±1 | 0.2 | 1.2 |
| CP0603B1441AS | 1429 - 1453 | 20±1 | 0.25 | 1.2 |
| CP0603B1747AS | 1710 - 1785 | 18±1 | 0.25 | 1.2 |
| CP0603B1842AS | 1805 - 1880 | 17.5±1 | 0.3 | 1.2 |
| CP0603B1880AS | 1850 - 1910 | 17.5±1 | 0.3 | 1.2 |
| CP0603B1960AS | 1930 - 1990 | 17.5±1 | 0.3 | 1.2 |
| CP0603B1907AS | 1895 - 1920 | 17.5±1 | 0.3 | 1.2 |
| CP0603B1890AS | 1880 - 1900 | 17.5±1 | 0.3 | 1.2 |
| CP0603B2442AS | 2400 - 2484 | 15.5±1 | 0.45 | 1.2 |

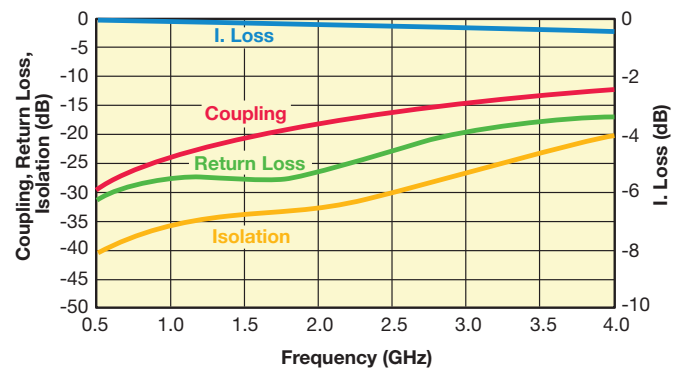
CP0603B****AS



Coupler P/N CP0603B****BS

| P/N Examples | Frequency Band [MHz] | Coupling [dB] | I. Loss max | VSWR max |
|---------------|----------------------|---------------|-------------|----------|
| CP0603B0836BS | 824 - 849 | 25.5±1 | 0.2 | 1.2 |
| CP0603B0881BS | 869 - 894 | 25±1 | 0.2 | 1.2 |
| CP0603B0902BS | 890 - 915 | 25±1 | 0.2 | 1.2 |
| CP0603B0947BS | 935 - 960 | 24.5±1 | 0.2 | 1.2 |
| CP0603B0897BS | 880 - 915 | 25±1 | 0.2 | 1.2 |
| CP0603B0942BS | 925 - 960 | 24.5±1 | 0.2 | 1.2 |
| CP0603B1441BS | 1429 - 1453 | 21±1 | 0.2 | 1.2 |
| CP0603B1747BS | 1710 - 1785 | 19±1 | 0.25 | 1.2 |
| CP0603B1842BS | 1805 - 1880 | 19±1 | 0.25 | 1.2 |
| CP0603B1880BS | 1850 - 1910 | 18.5±1 | 0.25 | 1.2 |
| CP0603B1960BS | 1930 - 1990 | 18.5±1 | 0.25 | 1.2 |
| CP0603B1907BS | 1895 - 1920 | 18.5±1 | 0.25 | 1.2 |
| CP0603B1890BS | 1880 - 1900 | 18.5±1 | 0.25 | 1.2 |
| CP0603B2442BS | 2400 - 2484 | 16.5±1 | 0.35 | 1.2 |

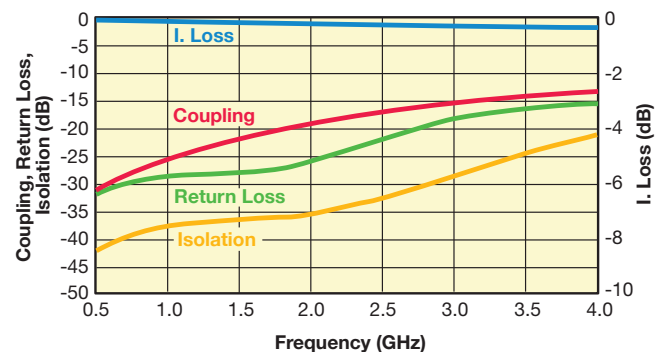
CP0603B****BS



Coupler P/N CP0603B****CS

| P/N Examples | Frequency Band [MHz] | Coupling [dB] | I. Loss max | VSWR max |
|---------------|----------------------|---------------|-------------|----------|
| CP0603B0836CS | 824 - 849 | 26.5±1 | 0.2 | 1.2 |
| CP0603B0881CS | 869 - 894 | 26±1 | 0.2 | 1.2 |
| CP0603B0902CS | 890 - 915 | 26±1 | 0.2 | 1.2 |
| CP0603B0947CS | 935 - 960 | 25.5±1 | 0.2 | 1.2 |
| CP0603B0897CS | 880 - 915 | 26±1 | 0.2 | 1.2 |
| CP0603B0942CS | 925 - 960 | 25.5±1 | 0.2 | 1.2 |
| CP0603B1441CS | 1429 - 1453 | 22±1 | 0.2 | 1.2 |
| CP0603B1747CS | 1710 - 1785 | 20.5±1 | 0.25 | 1.2 |
| CP0603B1842CS | 1805 - 1880 | 20±1 | 0.25 | 1.2 |
| CP0603B1880CS | 1850 - 1910 | 20±1 | 0.25 | 1.2 |
| CP0603B1960CS | 1930 - 1990 | 19.5±1 | 0.25 | 1.2 |
| CP0603B1907CS | 1895 - 1920 | 20±1 | 0.25 | 1.2 |
| CP0603B1890CS | 1880 - 1900 | 20±1 | 0.25 | 1.2 |
| CP0603B2442CS | 2400 - 2484 | 18±1 | 0.35 | 1.3 |

CP0603B****CS



Important: Couplers can be used at any frequency within the indicated range.

Thin-Film RF/Microwave Directional Couplers

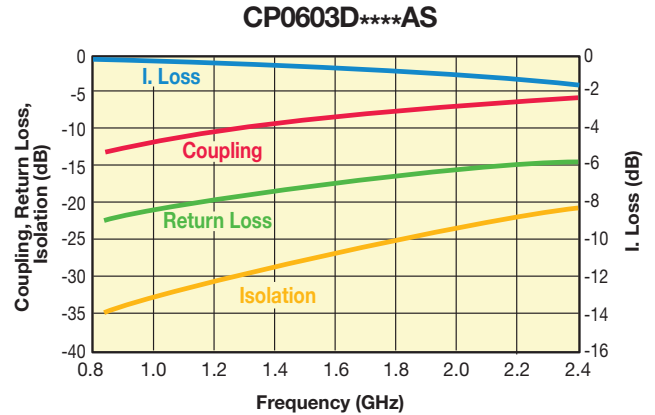
CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°

CP0603 SMD Type – High Directivity



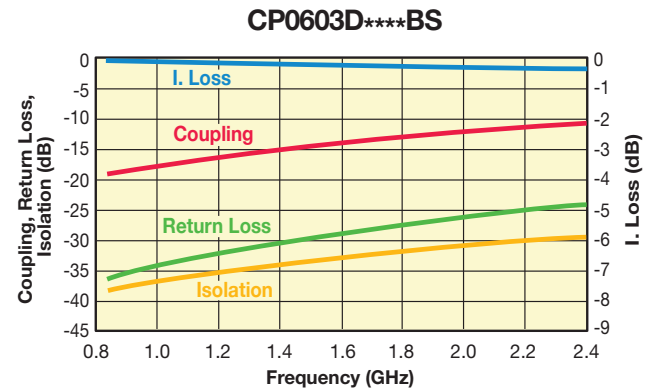
Coupler P/N CP0603D****AS

| P/N Examples | Frequency Band [MHz] | Coupling [dB] | I. Loss max. [dB] | Return Loss [dB] | Directivity [dB] |
|---------------|----------------------|---------------|-------------------|------------------|------------------|
| CP0603D0836AS | 824 - 849 | 13.50 | 0.50 | 23 | 21 |
| CP0603D0881AS | 869 - 894 | 13.00 | 0.50 | 22 | 21 |
| CP0603D0902AS | 890 - 915 | 13.00 | 0.50 | 22 | 21 |
| CP0603D0947AS | 935 - 960 | 12.50 | 0.50 | 22 | 21 |
| CP0603D0897AS | 880 - 915 | 13.00 | 0.50 | 22 | 21 |
| CP0603D0942AS | 925 - 960 | 12.50 | 0.50 | 22 | 21 |
| CP0603D1441AS | 1429 - 1453 | 9.00 | 1.00 | 18 | 19 |
| CP0603D1747AS | 1710 - 1785 | 8.00 | 1.40 | 17 | 18 |
| CP0603D1842AS | 1805 - 1880 | 7.50 | 1.40 | 17 | 17 |
| CP0603D1880AS | 1850 - 1910 | 7.50 | 1.40 | 16 | 17 |
| CP0603D1960AS | 1930 - 1990 | 7.00 | 1.40 | 16 | 17 |
| CP0603D1907AS | 1895 - 1920 | 7.00 | 1.40 | 16 | 17 |
| CP0603D1890AS | 1880 - 1900 | 7.00 | 1.40 | 16 | 17 |
| CP0603D2442AS | 2400 - 2484 | 5.50 | 2.00 | 15 | 15 |



Coupler P/N CP0603D****BS

| P/N Examples | Frequency Band [MHz] | Coupling [dB] | I. Loss max. [dB] | Return Loss [dB] | Directivity [dB] |
|---------------|----------------------|---------------|-------------------|------------------|------------------|
| CP0603D0836BS | 824 - 849 | 20.00 | 0.25 | 36 | 19 |
| CP0603D0881BS | 869 - 894 | 19.50 | 0.25 | 36 | 19 |
| CP0603D0902BS | 890 - 915 | 19.50 | 0.25 | 35 | 19 |
| CP0603D0947BS | 935 - 960 | 19.00 | 0.25 | 36 | 19 |
| CP0603D0897BS | 880 - 915 | 19.50 | 0.25 | 36 | 19 |
| CP0603D0942BS | 925 - 960 | 19.00 | 0.25 | 35 | 19 |
| CP0603D1441BS | 1429 - 1453 | 15.50 | 0.40 | 30 | 19 |
| CP0603D1747BS | 1710 - 1785 | 14.00 | 0.50 | 28 | 19 |
| CP0603D1842BS | 1805 - 1880 | 13.50 | 0.55 | 27 | 19 |
| CP0603D1880BS | 1850 - 1910 | 13.50 | 0.55 | 27 | 19 |
| CP0603D1960BS | 1930 - 1990 | 13.50 | 0.55 | 27 | 19 |
| CP0603D1907BS | 1895 - 1920 | 13.00 | 0.55 | 27 | 19 |
| CP0603D1890BS | 1880 - 1900 | 13.00 | 0.55 | 27 | 19 |
| CP0603D2442BS | 2400 - 2484 | 11.00 | 0.70 | 24 | 19 |



Important: Couplers can be used at any frequency within the indicated range.