

# 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

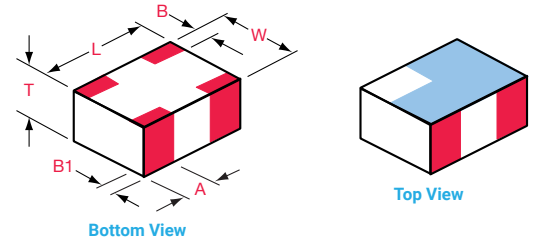
- 4G LTE
- 5G LTE
- Base Stations.
- Automotive
- Industrial
- Mobile Communications
- Satellite TV Receivers
- GPS
- Vehicle Location Systems
- Wireless LAN's

#### 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

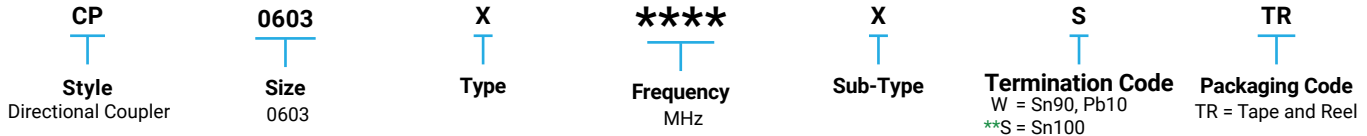
#### DIMENSIONS:

millimeters (inches)



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

#### HOW TO ORDER



\*\*RoHS compliant

#### QUALITY INSPECTION

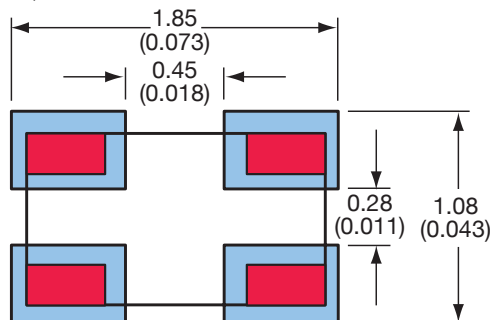
Finished parts are 100% tested for electrical parameters and visual characteristics. Each production lot is evaluated on a sample basis for:

- Static Humidity: 85°C, 85% RH, 160 hours
- Endurance: 125°C, I<sub>R</sub>, 4 hours

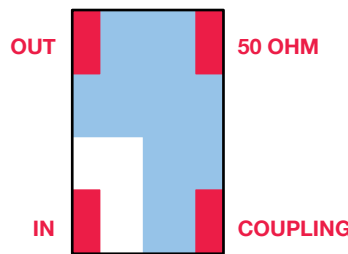
#### TERMINATION

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

#### Recommended Pad Layout Dimensions mm (inches)



#### TERMINALS (TOP VIEW)



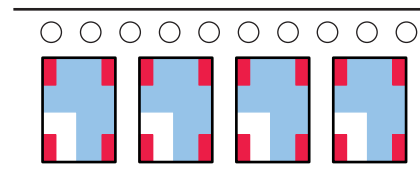
Not RoHS Compliant



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°

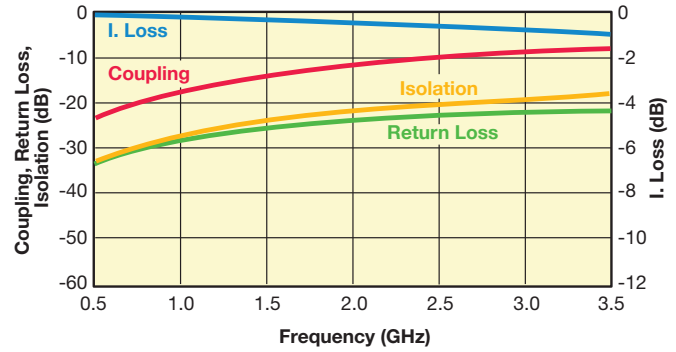
### CP0603 SMD Type



#### 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

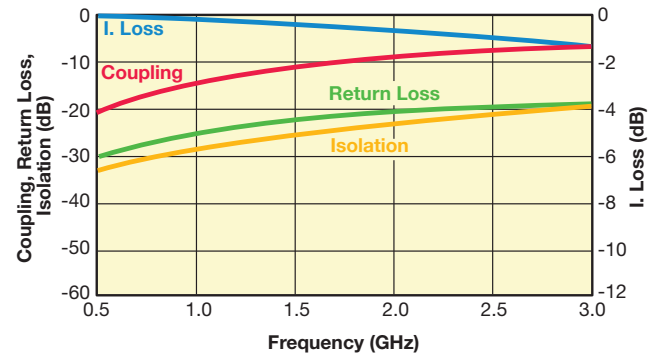
#### CP0603A\*\*\*\*AS



#### 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

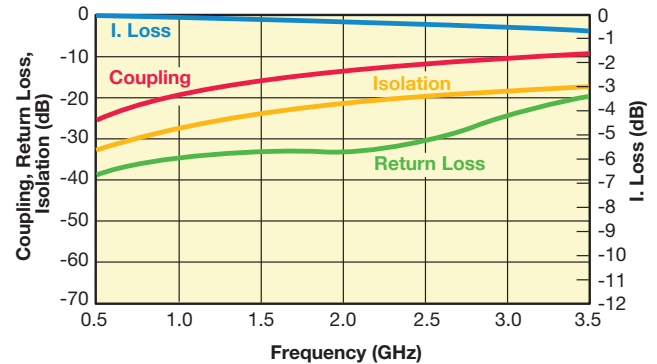
#### CP0603A\*\*\*\*BS



#### 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

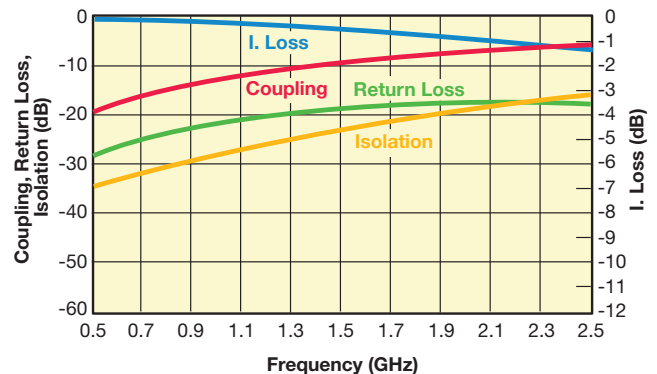
#### CP0603A\*\*\*\*CS



#### 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

#### CP0603A\*\*\*\*DS



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



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# Thin-Film RF/Microwave Directional Couplers

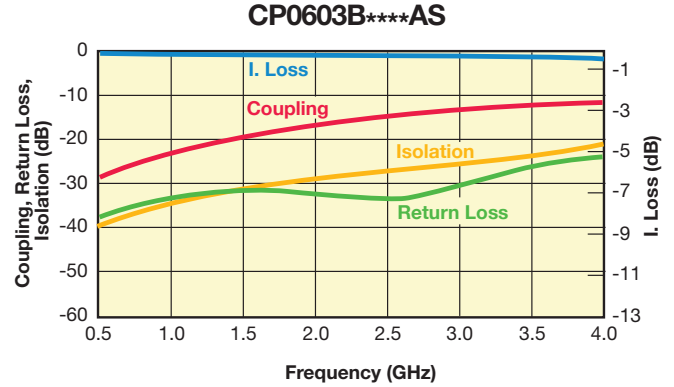
## CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°

### CP0603 SMD Type



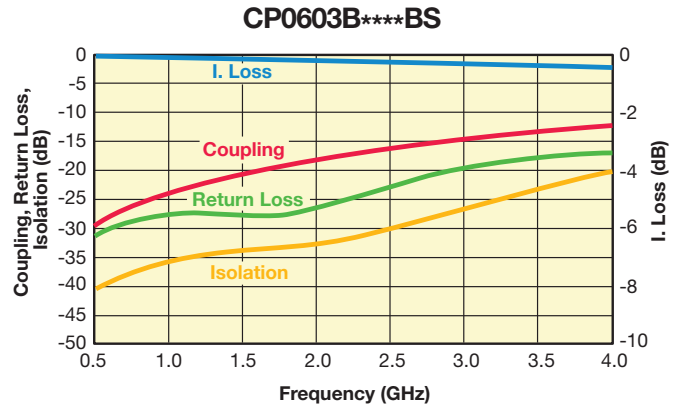
#### Coupler P/N CP0603B\*\*\*\*AS

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



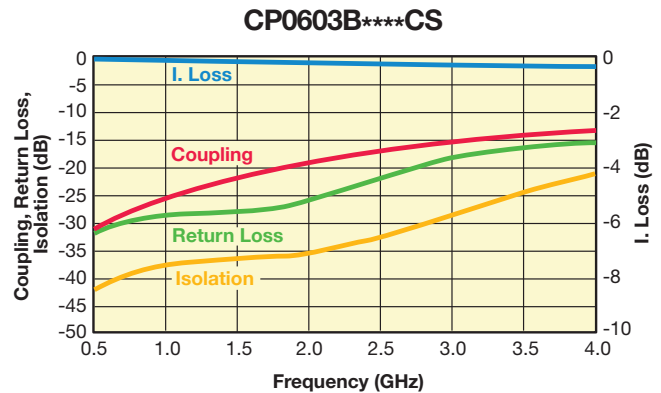
#### Coupler P/N CP0603B\*\*\*\*BS

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



#### 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



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

# Thin-Film RF/Microwave Directional Couplers

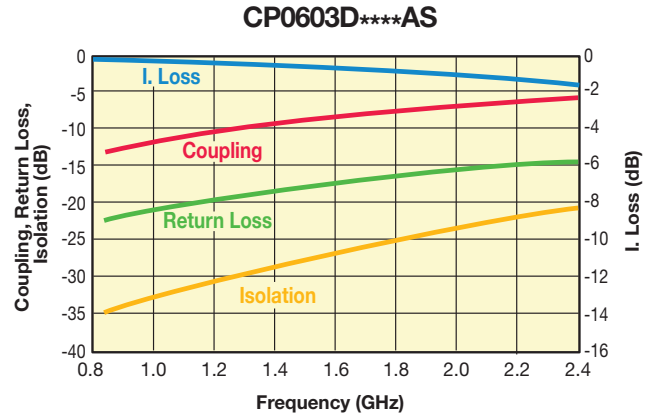
CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°

CP0603 SMD Type – High Directivity



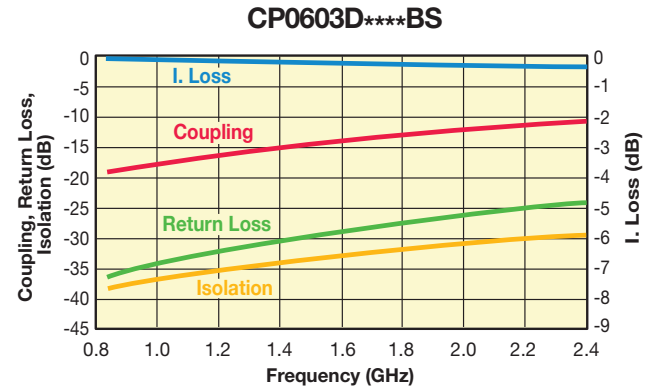
**Coupler P/N CP0603D\*\*\*\*AS**

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



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