

# Thin Film Directional Coupler



## CP0402P High Directivity, Tight Coupling Tolerance

### GENERAL DESCRIPTION

#### ITF (Integrated Thin-Film) TECHNOLOGY

The CP0402P Series High Directivity, Tight Coupling Tolerance LGA Coupler is based on the proprietary RFAP 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

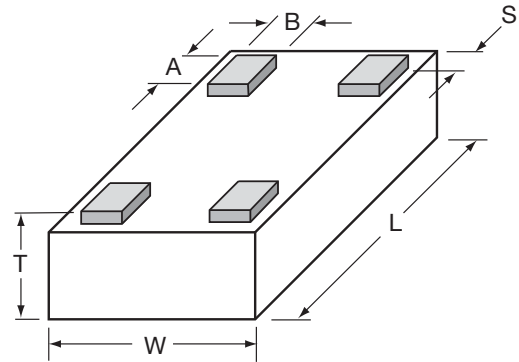
- Wireless communications
- Wireless LAN's
- GPS
- WiMAX

#### LAND GRID ARRAY ADVANTAGES

- Inherent Low Profile
- Self Alignment during Reflow
- Excellent Solderability
- Low Parasitics
- Better Heat Dissipation

#### DIMENSIONS: (Bottom View)

millimeters (inches)



L	1.00±0.05 (0.040±0.002)	A	0.20±0.05 (0.008±0.002)
W	0.58±0.04 (0.023±0.002)	B	0.18±0.05 (0.007±0.002)
T	0.35±0.05 (0.014±0.002)	S	0.05±0.05 (0.002±0.002)

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#### HOW TO ORDER

**CP**  
T  
Style

**0402**  
T  
Size  
0402

**P**  
T  
Type  
±0.5dB  
Tight Tolerance

**XXXX**  
T  
Frequency  
MHz

**X**  
T  
Sub-Type

**N**  
T  
Termination  
LGA  
Lead-Free

**TR**  
T  
Taped & Reeled

#### QUALITY INSPECTION

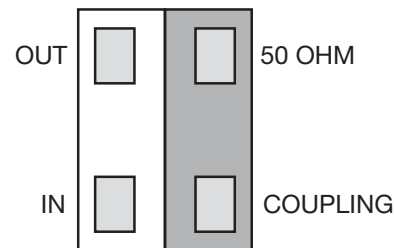
Finished parts are 100% tested for electrical parameters and visual characteristics. Each production lot is evaluated on a sample basis for:

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

#### TERMINATION

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

#### TERMINALS (Top View)

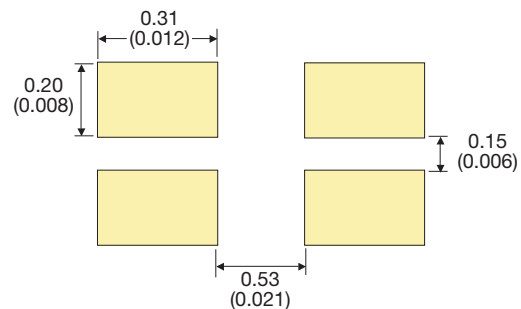


#### OPERATING TEMPERATURE:

-40°C to +85°C

#### Recommended Pad Layout Dimensions

mm (inches)



# Thin Film Directional Coupler

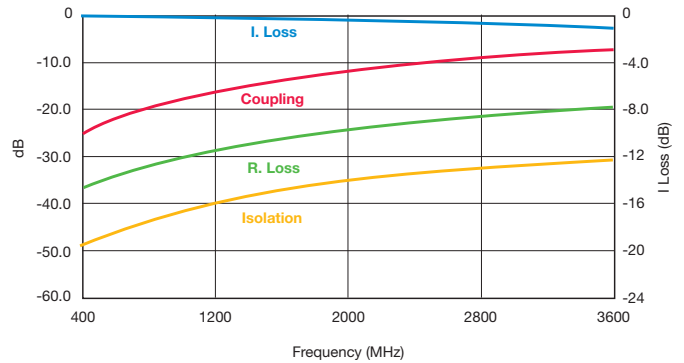


## CP0402P High Directivity, Tight Coupling Tolerance

Coupler P/N CP0402PxxxxANTR

Application	P/N Examples	Frequency Band [MHz]	Coupling [dB]	I. Loss max. [dB]	Return Loss [dB]	Directivity [dB]
AMPS	CP0402P0836AN	824 - 849	19.10±0.5	0.25	32	21
	CP0402P0881AN	869 - 894	18.60±0.5	0.25	31	
GSM	CP0402P0902AN	890 - 915	18.50±0.5	0.25	31	
	CP0402P0947AN	935 - 960	18.00±0.5	0.25	31	
E-GSM	CP0402P0897AN	880 - 915	18.50±0.5	0.25	31	
	CP0402P0942AN	925 - 960	18.00±0.5	0.25	31	
PDC	CP0402P1441AN	1429 - 1453	14.50±0.5	0.40	28	
PCN	CP0402P1747AN	1710 - 1785	13.00±0.5	0.50	26	
	CP0402P1842AN	1805 - 1880	12.50±0.5	0.50	26	
PCS	CP0402P1880AN	1850 - 1910	12.30±0.5	0.50	25	
	CP0402P1960AN	1930 - 1990	12.00±0.5	0.50	25	
PHP	CP0402P1907AN	1895 - 1920	12.30±0.5	0.50	25	
	CP0402P1950AN	1920 - 1980	12.00±0.5	0.50	25	
WCDMA	CP0402P2140AN	2110 - 2170	11.00±0.5	0.60	25	
	CP0402P1890AN	1880 - 1900	12.30±0.5	0.50	25	
DECT	CP0402P1890AN	1880 - 1900	12.30±0.5	0.50	25	
Wireless LAN	CP0402P2442AN	2400 - 2484	10.30±0.5	0.70	23	
	CP0402P3500AN	3400 - 3600	7.50±0.5	1.30	20	

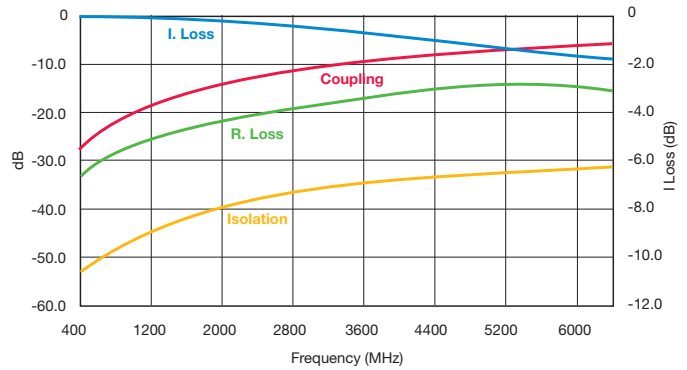
CP0402PxxxxANTR



Coupler P/N CP0402PxxxxBNTR

Application	P/N Examples	Frequency Band [MHz]	Coupling [dB]	I. Loss max. [dB]	Return Loss [dB]	Directivity [dB]
AMPS	CP0402P0836BN	824 - 849	22.00±0.5	0.20	28	27
	CP0402P0881BN	869 - 894	21.70±0.5	0.20	28	
GSM	CP0402P0902BN	890 - 915	21.50±0.5	0.20	28	
	CP0402P0947BN	935 - 960	21.00±0.5	0.25	27	
E-GSM	CP0402P0897BN	880 - 915	21.50±0.5	0.20	28	
	CP0402P0942BN	925 - 960	21.00±0.5	0.25	27	
PDC	CP0402P1441BN	1429 - 1453	17.50±0.5	0.25	24	
	CP0402P1747BN	1710 - 1785	16.00±0.5	0.30	23	
PCN	CP0402P1842BN	1805 - 1880	15.50±0.5	0.35	23	
	CP0402P1880BN	1850 - 1910	15.50±0.5	0.35	23	
PHP	CP0402P1960BN	1930 - 1990	15.00±0.5	0.35	22	
	CP0402P1907BN	1895 - 1920	15.50±0.5	0.35	23	
WCDMA	CP0402P1950BN	1920 - 1980	15.00±0.5	0.35	23	
	CP0402P2140BN	2110 - 2170	14.00±0.5	0.40	23	
DECT	CP0402P1890BN	1880 - 1900	15.50±0.5	0.35	23	
Wireless LAN	CP0402P2442BN	2400 - 2484	13.30±0.5	0.40	21	
	CP0402P3500BN	3400 - 3600	9.50±0.5	0.80	17	

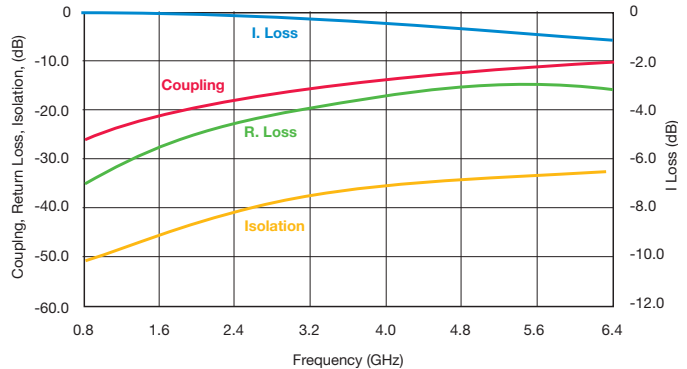
CP0402PxxxxBNTR



Coupler P/N CP0402PxxxxENTR

Application	P/N Examples	Frequency Band [MHz]	Coupling [dB]	I. Loss max. [dB]	Return Loss [dB]	Directivity [dB]
AMPS	CP0402P0836EN	824 - 849	27.20±0.5	0.20	35	25
	CP0402P0881EN	869 - 894	26.80±0.5	0.20	34	
GSM	CP0402P0902EN	890 - 915	26.50±0.5	0.20	34	
	CP0402P0947EN	935 - 960	26.00±0.5	0.20	34	
E-GSM	CP0402P0897EN	880 - 915	26.50±0.5	0.20	34	
	CP0402P0942EN	925 - 960	26.00±0.5	0.20	34	
PDC	CP0402P1441EN	1429 - 1453	22.30±0.5	0.25	29	
	CP0402P1747EN	1710 - 1785	20.50±0.5	0.25	27	
PCN	CP0402P1842EN	1805 - 1880	20.30±0.5	0.25	26	
	CP0402P1880EN	1850 - 1910	20.00±0.5	0.25	26	
PCS	CP0402P1960EN	1930 - 1990	20.00±0.5	0.25	26	
	CP0402P1907EN	1895 - 1920	20.00±0.5	0.25	26	
WCDMA	CP0402P1950EN	1920 - 1980	20.00±0.5	0.25	26	
	CP0402P2140EN	2110 - 2170	18.80±0.5	0.30	26	
DECT	CP0402P1890EN	1880 - 1900	20.00±0.5	0.25	26	
Wireless LAN	CP0402P2442EN	2400 - 2484	18.00±0.5	0.35	23	
	CP0402P3500EN	3400 - 3600	15.00±0.5	0.40	18	

CP0402PxxxxENTR



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