

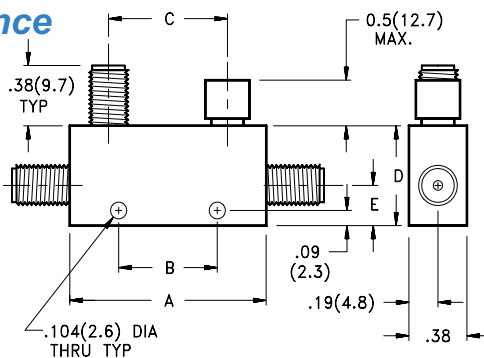
# Couplers

## Directional Couplers • Octave Bandwidth

### SMA Miniature High Performance

- Full Octave Frequency Band Performance
- Low VSWR - High Directivity
- Small Lightweight
- Meets Mil-E-5400 and Mil-E16400

Midwest Microwave's SMA miniature series of high performance directional couplers are small, lightweight, ruggedly constructed stripline units that possess inherently low insertion loss and VSWR with high directivity. Units are available in octave frequency bandwidths covering the entire range of 0.5-18.0 GHz.



### ELECTRICAL SPECIFICATIONS

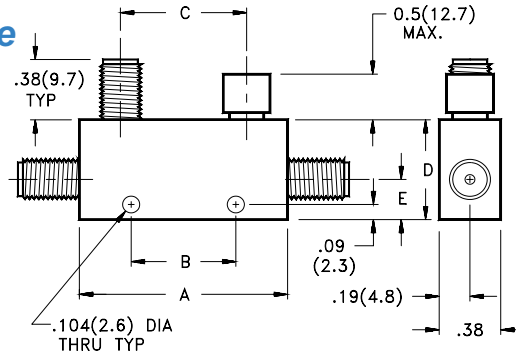
FREQUENCY RANGE (GHz)	CASE STYLE	MODEL NUMBER	COUPLING (dB) (incl Freq Sensitivity)	FREQUENCY SENSITIVITY	INSERTION LOSS (dB) max	DIRECTIVITY (dB) min	VSWR max	Input Avg (W)	Power Refl Avg (W)	Peak (kW) (W)
0.5 - 1.0	4	CPL-5210-06-SMA-79	6 + 1.0	+ 0.60	0.15	25	1.10	50	4	4
	4	CPL-5210-10-SMA-79	10 + 1.0	+ 0.75	0.15	25	1.10	50	10	4
	4	CPL-5210-20-SMA-79	20 + 1.0	+ 0.75	0.15	25	1.10	50	50	4
	4	CPL-5210-30-SMA-79	30 + 1.0	+ 0.75	0.15	25	1.10	50	50	4
1.0 - 2.0	3	CPL-5211-06-SMA-79	6 + 1.0	+ 0.60	0.20	25	1.15	50	4	4
	3	CPL-5211-10-SMA-79	10 + 1.0	+ 0.75	0.20	25	1.15	50	10	4
	3	CPL-5211-20-SMA-79	20 + 1.0	+ 0.75	0.20	25	1.15	50	50	4
	3	CPL-5211-30-SMA-79	30 + 1.0	+ 0.75	0.20	25	1.15	50	50	4
2.0 - 4.0	2	CPL-5212-06-SMA-79	6 + 1.0	+ 0.60	0.20	22	1.15	50	4	4
	2	CPL-5212-10-SMA-79	10 + 1.0	+ 0.75	0.20	22	1.15	50	10	4
	2	CPL-5212-20-SMA-79	20 + 1.0	+ 0.75	0.20	22	1.15	50	50	4
	2	CPL-5212-30-SMA-71	30 + 1.0	+ 0.75	0.20	22	1.15	50	50	4
2.6 - 5.2	1	CPL-5213-06-SMA-79	6 + 1.0	+ 0.60	0.25	20	1.25	50	4	4
	1	CPL-5213-10-SMA-79	10 + 1.0	+ 0.75	0.25	20	1.25	50	10	4
	1	CPL-5213-20-SMA-79	20 + 1.0	+ 0.75	0.25	20	1.25	50	50	4
	5	CPL-5213-30-SMA-79	30 + 1.0	+ 0.75	0.25	20	1.25	50	50	4
4.0 - 8.0	1	CPL-5214-6-SMA-79	6 + 1.0	+ 0.50	0.35	20	1.25	50	4	4
	1	CPL-5214-10-SMA-79	10 + 1.0	+ 0.50	0.35	20	1.25	50	10	4
	1	CPL-5214-20-SMA-79	20 + 1.0	+ 0.50	0.35	20	1.25	50	50	4
	5	CPL-5214-30-SMA-79	30 + 1.0	+ 0.50	0.35	20	1.25	50	50	4
7.0 - 12.4	1	CPL-5215-06-SMA-79	6 + 1.0	+ 0.40	0.50	17	1.35	50	4	4
	1	CPL-5215-10-SMA-79	10 + .75	+ 0.50	0.40	17	1.35	50	10	4
	1	CPL-5215-20-SMA-79	20 + .75	+ 0.50	0.30	17	1.35	50	50	4
	5	CPL-5215-30-SMA-79	30 + 1.0	+ 0.50	0.30	17	1.35	50	50	4
7.0 - 18.0	1	CPL-5216-06-SMA-79	6 + 1.0	+ 0.50	0.65	15	1.35	50	4	3
	1	CPL-5216-10-SMA-79	10 + 1.0	+ 0.50	0.50	15	1.40	50	10	3
	1	CPL-5216-20-SMA-79	20 + 1.0	+ 0.75	0.50	15	1.45	50	50	3
	5	CPL-5216-30-SMA-79	30 + 1.0	+ 0.75	0.50	15	1.45	50	50	3
12.4 - 18.0	1	CPL-5217-06-SMA-79	6 + 1.0	+ 0.40	0.65	15	1.35	50	4	2
	1	CPL-5217-10-SMA-79	10 + 1.0	+ 0.50	0.50	15	1.45	50	10	2
	1	CPL-5217-20-SMA-79	20 + 1.0	+ 0.75	0.50	15	1.45	50	50	2
	5	CPL-5217-30-SMA-79	30 + 1.0	+ 0.75	0.50	15	1.45	50	50	2

Note: TNC or Type N output connectors are available by substituting "TNC" or "NNN" for "SMA" in the Model Number. See next page for dimensions.

### Ultra-Wideband Performance

- Full 0.5 - 18.0 GHz bandwidth units
- Low VSWR - High Directivity
- Rugged Stripline Construction
- Meets Mil-E-5400 and Mil-E16400

Midwest Microwave's SMA miniature series of Ultra-Wideband high performance directional couplers are small, lightweight, components that perform extremely well over multi-octave and Ultra-Wideband frequencies covering the entire range of 0.5 - 18.0 GHz. .



### ELECTRICAL SPECIFICATIONS

FREQUENCY RANGE (GHZ)	CASE STYLE	MODEL NUMBER	COUPLING (dB) (Incl Freq Sensitivity)	FREQUENCY SENSITIVITY	INSERTION LOSS (dB) max	DIRECTIVITY (dB) min	VSWR max	Input Avg (W)	POWER Refl Avg (W)	Peak (kW) (W)
0.5 - 2.0	6	<a href="#">CPL-5220-06-SMA-79</a>	6 + 1.0	+ 0.50	0.40	22	1.20	50	10	4
	6	<a href="#">CPL-5220-10-SMA-79</a>	10 + 1.0	+ 0.50	0.40	22	1.20	50	10	4
	6	<a href="#">CPL-5220-16-SMA-79</a>	16 + 1.0	+ 0.50	0.40	22	1.20	50	40	4
	6	<a href="#">CPL-5220-20-SMA-79</a>	20 + 1.0	+ 0.50	0.40	22	1.20	50	50	4
1.0 - 4.0	6	<a href="#">CPL-5221-06-SMA-79</a>	6 + 1.0	+ 0.50	0.50	22	1.25	50	10	4
	6	<a href="#">CPL-5221-10-SMA-79</a>	10 + 1.0	+ 0.50	0.50	22	1.25	50	10	4
	6	<a href="#">CPL-5221-16-SMA-79</a>	16 + 1.0	+ 0.50	0.50	22	1.25	50	40	4
	6	<a href="#">CPL-5221-20-SMA-79</a>	20 + 1.0	+ 0.50	0.50	22	1.25	50	50	4
2.0 - 8.0	7	<a href="#">CPL-5222-06-SMA-79</a>	6 + 1.0	+ 0.50	0.60	20	1.25	50	10	4
	7	<a href="#">CPL-5222-10-SMA-79</a>	10 + 1.0	+ 0.50	0.60	20	1.25	50	10	4
	7	<a href="#">CPL-5222-16-SMA-79</a>	16 + 1.0	+ 0.50	0.60	20	1.25	50	40	4
	7	<a href="#">CPL-5222-20-SMA-79</a>	20 + 1.0	+ 0.50	0.60	20	1.25	50	50	4
6.0 - 18.0	1	<a href="#">CPL-5226-06-SMA-79</a>	6 + 1.0	+ 0.50	0.65	15	1.40	50	10	3
	1	<a href="#">CPL-5226-10-SMA-79</a>	10 + 1.0	+ 0.50	0.60	15	1.40	50	10	3
	1	<a href="#">CPL-5226-16-SMA-79</a>	16 + 1.0	+ 0.50	0.60	15	1.40	50	40	3
	1	<a href="#">CPL-5226-20-SMA-79</a>	20 + 1.0	+ 0.50	0.60	15	1.40	50	50	3
0.5 - 18.0	6	<a href="#">CPL-5230-10-SMA-79</a>	10* + 1.5	+ 1.00	0.80	15**	1.50	50	10	3
	6	<a href="#">CPL-5230-16-SMA-79</a>	16* + 1.5	+ 1.00	0.80	15**	1.50	50	40	3
	6	<a href="#">CPL-5230-20-SMA-79</a>	20* + 1.5	+ 1.00	0.80	15**	1.50	50	50	3
1.0 - 18.0	6	<a href="#">CPL-5231-10-SMA-79</a>	10* + 1.0	+ 0.60	1.05	15**	1.50	50	10	3
	6	<a href="#">CPL-5231-16-SMA-79</a>	16* + 1.0	+ 0.60	0.80	15**	1.50	50	40	3
	6	<a href="#">CPL-5231-20-SMA-79</a>	20* + 1.0	+ 0.50	0.80	15**	1.50	50	50	3
2.0 - 18.0	7	<a href="#">CPL-5232-06-SMA-79</a>	6* + 1.0	+ 0.50	0.80	15**	1.40	50	10	3
	7	<a href="#">CPL-5232-10-SMA-79</a>	10* + 1.0	+ 0.50	0.80	15**	1.40	50	10	3
	7	<a href="#">CPL-5232-16-SMA-79</a>	16* + 1.0	+ 0.50	0.80	15**	1.40	50	40	3
	7	<a href="#">CPL-5232-20-SMA-79</a>	20* + 1.0	+ 0.50	0.80	15**	1.40	50	50	3

\* Coupling is referenced to the output port.

\*\* Directivity is 12 dB from 12.4 - 18.0 GHz.

### MECHANICAL SPECIFICATIONS - INCHES (mm)

CASE STYLE	A	B	C	D	E	WEIGHT	
						Oz	Gr
1	1.00 (25.4)	N/A	0.50 (12.7)	0.50 (12.7)	0.22 (5.6)	0.60	17.0
2	1.16 (29.4)	0.34 (8.7)	0.66 (16.7)	0.50 (12.7)	0.22 (5.6)	0.64	18.2
3	1.78 (45.2)	0.94 (23.8)	1.28 (32.5)	0.50 (12.7)	0.22 (5.6)	0.82	23.2
4	3.00 (76.2)	1.00 (25.4)	2.5 (63.5)	0.75 (19.1)	0.31 (7.9)	1.50	43.0
5	1.00 (25.4)	N/A	0.50 (12.7)	0.63 (15.9)	0.22 (5.6)	0.67	19.0
6	3.50 (88.9)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.25 (6.3)	1.75	49.6
7	2.00 (50.8)	0.95 (24.2)	1.50 (38.1)	0.63 (16.0)	0.22 (5.6)	1.30	36.9

Note: TNC or Type N output connectors are available by substituting "TNC" or "NNN" for "SMA" in the Model Number.