

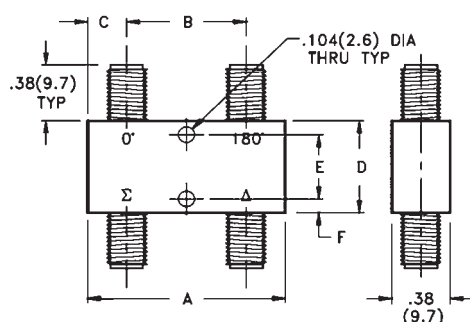
Couplers

3 dB 180° Hybrids- Crossover Type

Excellent Phase and Amplitude Balance

- 500 MHz to 18.0 GHz Performance
- 0° or 180° Phase Difference
- Low VSWR - High Isolation
- Rugged Stripline Construction
- Meets MIL-E-5400 and MIL-E-16400

Midwest Microwave's series of 3 dB 180° Hybrid Couplers may be used as a power divider or combiner. A microwave signal applied at the sum (Σ) port will result in two equal amplitude, in phase signals at the output ports. Conversely, a microwave signal applied at the difference (Δ) port will result in two equal amplitude but 180° out of phase signals at the output ports.



ELECTRICAL SPECIFICATIONS

FREQUENCY RANGE (GHz)	CASE STYLE	MODEL NUMBER	AMPLITUDE BALANCE (dB)	INSERTION LOSS (dB) max	ISOLATION (dB) min	VSWR max	PHASE BALANCE (Deg)	POWER (In)	
								Avg (w)	Peak (w)
.50-1.0	1	HYB-5410-X3-SMA-79	±0.5	0.4	24	1.30	± 10	30	3
1.0-2.0	2	HYB-5411-X3-SMA-79	±0.5	0.5	24	1.35	± 10	30	3
2.0-4.0	3	HYB-5412-X3-SMA-79	±0.5	0.7	22	1.35	± 10	30	3
2.6-5.2	4	HYB-5413-X3-SMA-79	±0.5	0.7	20	1.35	± 8	30	3
4.0-8.0	4	HYB-5414-X3-SMA-79	±0.5	0.7	20	1.35	± 8	30	3
7.0-12.4	6	HYB-5415-X3-SMA-79	±0.5	0.8	17	1.45	± 6	30	3
7.0-18.0	6	HYB-5416-X3-SMA-79	±0.6	1.2	14	1.70	± 6	30	3
12.4-18.0	6	HYB-5417-X3-SMA-79	±0.6	1.2	12	1.70	± 6	30	3
4.0-12.4	5	HYB-5423-X3-SMA-79	±0.6	1.0	17 1	.50	± 6	30	3

MECHANICAL SPECIFICATIONS - INCHES (mm)

CASE STYLE	A	B	C	D	E	F	WEIGHT	
							Oz	Gr
1	3.25 (82.6)	2.5 (63.5)	0.50 (12.7)	1.25 (31.8)	1.00 (25.4)	0.13 (3.2)	2.8	70
2	2.00 (50.8)	1.25 (31.8)	0.50 (12.7)	1.25 (31.8)	1.00 (25.4)	0.13 (3.2)	2.0	47
3	1.44 (36.5)	0.69 (17.5)	0.38 (9.7)	1.25 (31.8)	1.00 (25.4)	0.13 (3.2)	1.5	38
4	1.25 (31.8)	0.50 (12.7)	0.38 (9.7)	1.25 (31.8)	1.00 (25.4)	0.13 (3.2)	1.5	38
5	1.50 (38.1)	0.75 (19.1)	0.38 (9.7)	1.00 (25.4)	0.75 (19.1)	0.13 (3.2)	1.2	34
6	1.25 (31.8)	0.50 (12.7)	0.38 (9.7)	1.00 (25.4)	0.75 (19.1)	0.13 (3.2)	1.1	31

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