

Directional Couplers

Broadband & Multi-Octave

Features

- Ultra-miniature
- Broadband
- SMA connectors
- High directivity
- Low VSWR
- Meets MIL environments
- 105°C operating temperature
- RF Shielded
- Stripline construction
- Type N connector models available
- Available from stock

See Note on Page 61 referring to coupler port designations.

Series MDC 2000 and MDC 4200 broadband and multi-octave directional couplers are designed for test and ECM equipment where more than standard frequency bandwidths are required. Each model is miniature, lightweight, and able to meet stringent environmental requirements. Construction is stripline and designed to meet MIL-E-5400 & MIL-E-16400 environments. Type N connector models available. All units are available from stock.

Outline	A	B	C	D	E	F	G	H	I	J
1	3.60	.53	.38	.5	2.60	-	.22	3.35	.075	.105
2	3.60	.60	.38	.5	2.60	-	.22	3.35	.075	.105
3	2.90	.68	.38	.45	2.00	-	.34	2.65	.15	.148
4	2.90	.60	.38	.45	2.00	-	.22	2.65	.075	.105
5	1.78	.68	.38	.45	.875	-	.34	1.53	.15	.148
6	1.78	.60	.38	.45	.875	-	.22	1.53	.075	.148
7	1.22	.54	.38	.42	.375	-	.22	.97	.075	.105
8	1.22	.60	.38	.42	.375	-	.22	.97	.075	.105
9	1.00	.50	.38	-	-	.50	.22	.75	.075	.105
10	4.40	.60	.38	.50	3.40	-	.24	4.15	.075	.105
11	3.47	.70	.38	.74	2.00	-	.26	3.22	.10	.105
12	1.36	.60	.38	.43	.50	-	.26	1.11	.09	.105
13	3.47	.70	.50	.74	2.00	-	.26	3.22	.34	(1)
14	2.10	.70	.38	.55	1.00	-	.26	1.85	.10	.105
15	2.09	.70	.50	.55	1.00	-	.26	1.84	.34	(1)
16	1.36	.66	.38	.43	.50	-	.26	1.11	.09	.105

(1) 2-56 NC-28 x .12

Dimensions in inches

Model No.	Frequency Range (GHz)	Coupling† (dB)	Freq. Sens. (dB)	Insertion Loss (dB)		Directivity (dB) min	VSWR max			Power		Outline Dwg. No.	
				Excl. Cpld. Pwr.	True		Primary Line	Secondary Line	Avg. Incident (W)	Avg. Reflected (W)	Peak (kW)		
MDC2044-6		6±1.0	±0.75	0.35	2.00	23	1.20	1.20	50	2	3	1	
MDC2044-10	0.5-2	10±1.0	±0.75	0.35	0.90	23	1.20	1.20	50	5	3	1	
MDC2044-20		20±1.0	±0.75	0.35	0.40	23	1.20	1.20	50	50	3	2	
MDC2055-6		6±1.0	±0.5	0.35	2.00	23	1.20	1.20	50	2	3	3	
MDC2055-10	1-4.0	10±1.0	±0.5	0.35	0.90	23	1.20	1.20	50	5	3	3	
MDC2055-20		20±1.0	±0.5	0.40	0.45	23	1.20	1.20	50	50	3	4	
MDC2066-6		6±1.0	±0.3	0.50	2.20	20	1.25	1.25	50	2	3	5	
MDC2066-10	2-8	10±1.0	±0.3	0.35	1.00	20	1.25	1.25	50	5	3	5	
MDC2066-20		20±1.0	±0.4	0.40	0.45	20	1.25	1.25	50	50	3	6	
MDC2077-6		6±1.0	±0.3	0.50	2.20	17	1.30	1.30	50	2	2	7	
MDC2077-10	4-12.4	10±1.0	±0.3	0.50	1.20	17	1.30	1.30	50	5	2	7	
MDC2077-20		20±1.0	±0.4	0.50	0.55	17	1.30	1.30	50	50	2	8	
MDC2089-10	7-18	10±1.25	±0.75	0.60	1.10	15	1.35	1.40	50	5	1	9	
MDC4245-10	0.6-4	10±1.0	±0.75	0.40	0.90	18	1.25	1.30	50	5	3	10	
1-12.4 12.4-18													
MDC4259-10	1-18 †	10±1.0	±0.5	0.90	1.50	15	12	1.40	1.50	25	5	1	11
MDC4259-16		16±1.0	±0.5	0.80	0.90	15	12	1.40	1.50	25	20	1	13
MDC4259-20		20±1.0	±0.5	0.85	0.90	15	12	1.40	1.50	25	25	1	13
2-12.4 12.4-18													
MDC4269-6		6±1.0	±0.5	0.90	2.00	15	12	1.35	1.50	25	2	1	14
MDC4269-10	2-18 †	10±1.0	±0.5	0.60	1.00	15	12	1.35	1.50	25	5	1	14
MDC4269-16		16±1.0	±0.5	0.80	0.90	15	12	1.35	1.40	25	20	1	15
MDC4269-20		20±1.0	±0.5	0.80	0.90	15	12	1.35	1.40	25	25	1	15
4-12.4 12.4-18													
MDC4279-6	4-18	6±1.0	±0.5	0.90	2.00	15	12	1.35	1.40	25	2	1	12
MDC4279-10		10±1.0	±0.5	0.80	1.00	15	12	1.35	1.40	25	5	1	12
MDC4279-20		20±1.0	±0.5	0.60	0.70	15	12	1.40	1.40	25	25	1	16

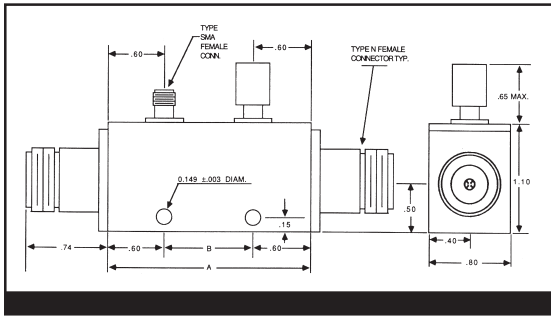
† Indicates frequency sensitivity
‡ Coupling relative to output power

Directional Couplers

High Power/600 Watts CW 10kW pk

Features

- 600 watts CW, 10 kW peak
- Wide bandwidths
- Small size
- Flat with frequency
- RF shielded
- Custom coupling values (30-50dB)
- Fast delivery



† X to be selected by customer. Frequency sensitivity included in coupling. Primary line connectors Type N Female. Special order connectors available. Coupled port SMA Female. Dimensions are in inches.

high power directional couplers, series MDC2300 and MDC3300 are available in any coupling value between 30dB and 50dB (substitute for "X" in part number). The frequency sensitivity is included in the coupling value. High power couplers find use in leveling circuits, VSWR protection, and transmitter carrier power monitors. Primary line connectors are normally Type N female, with SMA Female on the coupled port. Other connector types are available on special order. The couplers are flat with frequency and have good directivity.

Model Number	Freq. Range (GHz)	Coupling† (dB)	Frequency Sensitivity (dB)	Insertion Loss (dB) max	Directivity (dB) min	VSWR max Primary Line	A	B
MDC2344-X	0.5-2	X±1.0	±0.75	0.2	18	1.15	6.00	4.80
MDC2324-X	1-2	X±1.0	±0.75	0.2	18	1.15	3.50	2.30
MDC2325-X	2-4	X±1.0	±0.75	0.2	18	1.15	2.50	1.30
MDC3354-X	1-4	X±1.0	±0.70	0.2	15	1.15	3.85	2.65
MDC2366-X	2.6-5.2	X±1.0	±0.75	0.2	18	1.20	2.50	1.30
MDC2326-X	4-8	X±1.0	±0.75	0.2	18	1.30	2.00	0.80
MDC3355-X	1.5-4.5	X±1.0	±0.60	0.2	18	1.20	3.50	2.30
MDC3366-X	2-8	X±1.0	±0.60	0.2	16	1.30	3.00	1.80
MDC2327-X	7-11	X±1.0	±0.50	0.2	16	1.30	2.00	0.80
MDC2377-X	5-11	X±1.0	±0.50	0.2	15	1.30	2.00	0.80
MDC3377A-X	4-12	X±1.0	±0.60	0.2	15	1.30	2.50	1.30
MDC2357-35	1-11	35±1.5	±1.50	0.2	15	1.30	3.85	2.65

Directional Couplers

Dual High Power

Features

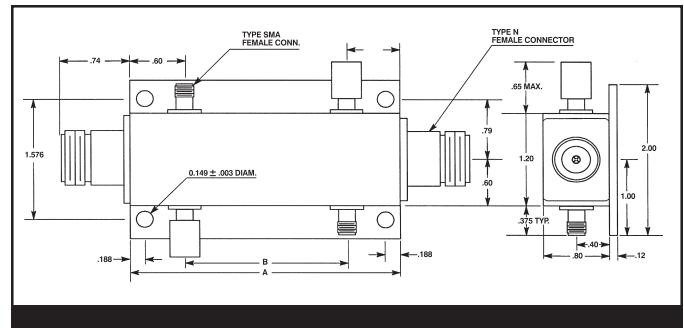
- 600 watts CW, 10 kW peak
- Wide bandwidths
- Small size
- Flat with frequency
- RF shielded
- Custom coupling values (30dB to 50dB)
- Fast delivery

dual directional couplers, series MDC2100 are available in any coupling value between 30dB and 50dB (substitute for "X" in part number). The frequency sensitivity is included in the coupling value. Dual high power directional couplers are built to give forward and reverse power monitoring capabilities in a package matching our MDC2300-MDC3300 series couplers. Forward and reverse coupling values can be independently selected. Primary line connectors are normally Type N female, with SMA female on the coupled port. Other connector types are available on special order. The couplers are flat with frequency and have good directivity. If both coupled ports are intended for monitoring forward power, change the suffix "B" to "C" when ordering. (i.e. MDC2125C-30)

Custom versions of this series are available with 3 or more coupled ports. Custom frequency requirements are easily met.

Model Number	Frequency Range (GHz)	Coupling† (dB)	Frequency Sensitivity (dB)	Insertion Loss (dB)	Directivity (dB)	VSWR max Pri. Line	Outline Dimensions	
							A	B
MDC2144B-X	0.5-2	X±1.0	±0.75	0.4	18	1.20	6.00	4.80
MDC2124B-X	1.2	X±1.0	±0.75	0.4	18	1.20	3.50	2.30
MDC2125B-X	2-4	X±1.0	±0.75	0.4	18	1.20	2.50	1.30
MDC2154B-X	1-4	X±1.0	±0.60	0.4	15	1.20	3.85	2.65
MDC2163B-X	2.6-5.2	X±1.0	±0.75	0.4	18	1.25	2.50	1.30
MDC2126B-X	4-8	X±1.0	±0.75	0.4	18	1.35	2.00	0.80
MDC2155B-X	1.5-4.5	X±1.0	±0.60	0.4	18	1.25	3.50	2.30
MDC2166B-X	2-8	X±1.0	±0.60	0.4	16	1.35	3.00	1.80
MDC2127B-X	7-11	X±1.0	±0.50	0.5	16	1.35	2.00	0.80
MDC2177B-X	5-11	X±1.0	±0.50	0.5	15	1.35	2.00	0.80
MDC2178B-X	4-12	X±1.0	±0.60	0.5	15	1.35	2.50	1.30
MDC2157B-35	1-11	35±1.5	±1.50	0.5	15	1.35	3.85	2.65

† X to be selected by customer (30dB to 50 dB). Frequency sensitivity to be included in coupling.



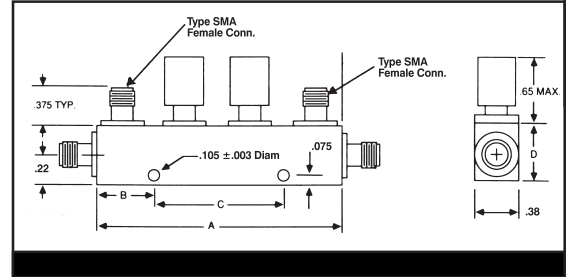
Directional Couplers

Dual Miniature

Features

- Etched teflon fiberglass stripline
- Miniature size
- High directivity
- MIL-SPEC construction
- Low VSWR
- RF shielded
- Resistance soldered SMA connectors
- Connectors per MIL-PRF-39012
- Delivery from Stock

Series MDC 3200 are stripline constructed dual directional couplers that have a variety of applications. These miniature devices, available in 10, 20, and 30 dB, have good directivity, tight coupling, and frequency sensitivity. When used in a reflectometer application, the reflected and incident power can be simultaneously monitored. When either incident or reflected power is monitored from two isolated ports, it is used as a dual in-line coupler. Special coupling values may be ordered. All standard values are available from stock.



Model Number	Freq. Range (GHz)	Coupling† (dB)	Frequency Sensitivity (dB)	Insertion Loss (dB) max - True	Directivity (dB) min	VSWR (max)		A	B	C	D
						Pri. Line	Sec. Line				
MDC3223-21	0.5-1	10±1.25	±0.80	1.50	22	1.15	1.10	6.30	0.80	4.70	0.50
MDC3223-22		20±1.25		0.50				6.30	0.80	4.70	0.50
MDC3223-23		30±1.25		0.40				6.30	0.80	4.70	0.55
MDC3224-21	1-2	10±1.25	±0.80	1.50	22	1.15	1.10	3.66	0.42	2.82	0.50
MDC3224-22		20±1.25		0.50				3.66	0.42	2.82	0.50
MDC3224-23		30±1.25		0.40				3.66	0.42	2.82	0.55
MDC3225-21	2-4	10±1.25	±0.80	1.50	20	1.20	1.15	2.42	0.41	1.60	0.50
MDC3225-22		20±1.25		0.50				2.42	0.41	1.60	0.50
MDC3225-23		30±1.25		0.40				2.42	0.41	1.60	0.55
MDC3266-21	2.6-5.2	10±1.25	±0.80	1.50	18	1.30	1.25	2.10	0.50	1.10	0.50
MDC3266-22		20±1.25		0.50				2.10	0.50	1.10	0.50
MDC3266-23		30±1.25		0.40				2.10	0.50	1.10	0.55
MDC3226-21	4-8	10±1.25	±0.80	1.70	18	1.35	1.25	2.10	0.50	1.10	0.50
MDC3226-22		20±1.25		0.50				2.10	0.50	1.10	0.50
MDC3226-23		30±1.25		0.40				2.10	0.50	1.10	0.55
MDC3227-21	7-12.4	10±1.25	±0.60	1.90	16	1.35	1.30	2.10	0.50	1.10	0.50
MDC3227-22		20±1.25		0.70				2.10	0.50	1.10	0.50
MDC3227-23		30±1.25		0.60				2.10	0.50	1.10	0.55
MDC3228-21	8-16	10±1.25	±0.80	2.20	15	1.40	1.40	2.10	0.50	1.10	0.50
MDC3228-22		20±1.25		1.00				2.10	0.50	1.10	0.60
MDC3228-23		30±1.25		1.00				2.10	0.50	1.10	0.60
MDC3288-21	12.4-18	10±1.25	±0.60	2.20	15	1.40	1.40	2.10	0.50	1.10	0.50
MDC3288-22		20±1.25		1.00				2.10	0.50	1.10	0.60
MDC3288-23		30±1.25		1.00				2.10	0.50	1.10	0.60

† Includes Frequency Sensitivity

Dimension are in inches.

