

Bi-Directional Coupler

MBDC-13-63HP+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = -55°C, Configuration A.

Freq. (MHz)	I. Loss (dB)		Coupling (dB)		Directivity (dB)	Return Loss (dB)			
	In - Out	In - Fwd	Out - Rev	In - Fwd		In	Out	Fwd	Rev
50	-0.03	-45.07	-45.05	25.11	-45.03	-43.21	-42.39	-42.84	
200	-0.04	-33.05	-33.04	26.71	-36.14	-36.07	-36.11	-36.50	
350	-0.04	-28.21	-28.20	23.05	-32.81	-33.07	-37.28	-36.62	
500	-0.05	-25.15	-25.14	22.57	-38.58	-37.60	-42.41	-39.22	
650	-0.05	-22.92	-22.91	22.40	-47.17	-41.87	-58.70	-40.49	
800	-0.06	-21.19	-21.18	22.54	-49.34	-45.18	-44.58	-38.71	
950	-0.06	-19.78	-19.78	23.19	-48.45	-46.04	-46.70	-39.11	
1100	-0.07	-18.59	-18.59	23.12	-44.71	-42.26	-57.91	-43.17	
1250	-0.07	-17.59	-17.58	22.63	-40.85	-40.74	-48.17	-41.93	
1400	-0.08	-16.71	-16.71	22.14	-45.35	-42.37	-43.15	-42.27	
1550	-0.08	-15.95	-15.94	22.23	-42.66	-43.62	-37.54	-38.80	
1700	-0.08	-15.29	-15.29	22.09	-44.28	-40.49	-39.03	-43.49	
1850	-0.08	-14.70	-14.70	21.92	-46.75	-38.25	-36.49	-41.55	
2000	-0.08	-14.17	-14.16	21.34	-59.08	-37.19	-35.17	-44.84	
2150	-0.08	-13.72	-13.71	21.33	-40.59	-35.50	-34.51	-46.30	
2300	-0.09	-13.31	-13.30	21.47	-35.82	-33.19	-33.49	-41.85	
2450	-0.09	-12.94	-12.94	21.32	-32.88	-31.89	-33.07	-41.63	
2600	-0.10	-12.61	-12.61	21.07	-30.13	-29.78	-34.58	-38.91	
2750	-0.10	-12.35	-12.37	21.17	-30.20	-29.12	-39.51	-34.62	
2900	-0.11	-12.12	-12.13	21.22	-30.54	-28.16	-39.01	-33.35	
3050	-0.11	-11.90	-11.92	20.77	-29.51	-26.73	-38.27	-32.51	
3200	-0.13	-11.77	-11.80	20.60	-28.97	-25.85	-38.62	-30.93	
3350	-0.11	-11.61	-11.66	19.99	-27.01	-25.66	-35.00	-30.98	
3500	-0.11	-11.45	-11.50	19.29	-25.42	-24.05	-33.54	-29.93	
3650	-0.11	-11.41	-11.45	19.49	-24.64	-23.53	-31.90	-29.43	
3800	-0.12	-11.40	-11.44	19.72	-24.45	-23.17	-31.59	-28.66	
3950	-0.11	-11.36	-11.40	19.59	-24.60	-24.06	-30.57	-28.94	
4100	-0.13	-11.39	-11.44	19.51	-24.75	-24.31	-30.34	-28.45	
4250	-0.11	-11.36	-11.39	18.88	-23.46	-23.04	-28.53	-27.46	
4400	-0.12	-11.49	-11.51	19.19	-22.73	-23.24	-25.95	-25.32	
4550	-0.14	-11.54	-11.58	18.71	-22.24	-22.98	-23.83	-23.53	
4700	-0.16	-11.70	-11.74	18.79	-22.16	-22.57	-22.74	-22.51	
4850	-0.15	-11.81	-11.85	19.06	-22.04	-21.88	-21.73	-21.25	
5000	-0.15	-12.02	-12.06	19.11	-22.19	-22.33	-21.21	-20.67	
5150	-0.17	-12.23	-12.26	18.66	-21.60	-21.50	-20.77	-20.17	
5300	-0.18	-12.47	-12.48	19.52	-22.40	-22.38	-19.88	-19.82	
5450	-0.16	-12.72	-12.71	21.08	-24.05	-24.76	-19.83	-19.63	
5600	-0.17	-13.06	-12.98	21.20	-26.80	-27.91	-19.99	-19.88	
5750	-0.15	-13.29	-13.33	22.19	-30.00	-31.05	-20.27	-20.03	
5900	-0.16	-13.68	-13.73	22.04	-33.61	-32.91	-22.16	-21.75	
6050	-0.17	-14.07	-14.04	20.12	-37.57	-39.78	-21.99	-22.07	

Bi-Directional Coupler

MBDC-13-63HP+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = -55°C, Configuration B.

Freq. (MHz)	I. Loss (dB) In - Out	Coupling (dB)		Directivity (dB) In - Fwd	Return Loss (dB)			
		In - Fwd	Out - Rev		In	Out	Fwd	Rev
50	-0.04	-45.05	-45.07	24.78	-43.21	-45.03	-42.84	-42.39
200	-0.05	-33.04	-33.05	26.25	-36.07	-36.14	-36.50	-36.11
350	-0.05	-28.20	-28.21	23.38	-33.07	-32.81	-36.62	-37.28
500	-0.05	-25.14	-25.15	22.75	-37.60	-38.58	-39.22	-42.41
650	-0.05	-22.91	-22.92	22.78	-41.87	-47.17	-40.49	-58.70
800	-0.06	-21.18	-21.19	23.19	-45.18	-49.34	-38.71	-44.58
950	-0.07	-19.78	-19.78	24.07	-46.04	-48.45	-39.11	-46.70
1100	-0.07	-18.59	-18.59	23.65	-42.26	-44.71	-43.17	-57.91
1250	-0.07	-17.58	-17.59	23.57	-40.74	-40.85	-41.93	-48.17
1400	-0.08	-16.71	-16.71	23.23	-42.37	-45.35	-42.27	-43.15
1550	-0.08	-15.94	-15.95	23.21	-43.62	-42.66	-38.80	-37.54
1700	-0.08	-15.29	-15.29	23.19	-40.49	-44.28	-43.49	-39.03
1850	-0.08	-14.70	-14.70	23.35	-38.25	-46.75	-41.55	-36.49
2000	-0.08	-14.16	-14.17	23.36	-37.19	-59.08	-44.84	-35.17
2150	-0.08	-13.71	-13.72	22.70	-35.50	-40.59	-46.30	-34.51
2300	-0.09	-13.30	-13.31	23.03	-33.19	-35.82	-41.85	-33.49
2450	-0.09	-12.94	-12.94	22.79	-31.89	-32.88	-41.63	-33.07
2600	-0.10	-12.61	-12.61	22.16	-29.78	-30.13	-38.91	-34.58
2750	-0.10	-12.37	-12.35	22.55	-29.12	-30.20	-34.62	-39.51
2900	-0.10	-12.13	-12.12	22.27	-28.16	-30.54	-33.35	-39.01
3050	-0.11	-11.92	-11.90	21.88	-26.73	-29.51	-32.51	-38.27
3200	-0.13	-11.80	-11.77	21.81	-25.85	-28.97	-30.93	-38.62
3350	-0.12	-11.66	-11.61	21.16	-25.66	-27.01	-30.98	-35.00
3500	-0.12	-11.50	-11.45	20.60	-24.05	-25.42	-29.93	-33.54
3650	-0.11	-11.45	-11.41	20.50	-23.53	-24.64	-29.43	-31.90
3800	-0.13	-11.44	-11.40	20.57	-23.17	-24.45	-28.66	-31.59
3950	-0.12	-11.40	-11.36	20.05	-24.06	-24.60	-28.94	-30.57
4100	-0.13	-11.44	-11.39	19.72	-24.31	-24.75	-28.45	-30.34
4250	-0.11	-11.39	-11.36	18.37	-23.04	-23.46	-27.46	-28.53
4400	-0.12	-11.51	-11.49	18.07	-23.24	-22.73	-25.32	-25.95
4550	-0.13	-11.58	-11.54	17.17	-22.98	-22.24	-23.53	-23.83
4700	-0.15	-11.74	-11.70	17.15	-22.57	-22.16	-22.51	-22.74
4850	-0.14	-11.85	-11.81	16.97	-21.88	-22.04	-21.25	-21.73
5000	-0.14	-12.06	-12.02	17.38	-22.33	-22.19	-20.67	-21.21
5150	-0.16	-12.26	-12.23	17.51	-21.50	-21.60	-20.17	-20.77
5300	-0.17	-12.48	-12.47	18.17	-22.38	-22.40	-19.82	-19.88
5450	-0.14	-12.71	-12.72	18.90	-24.76	-24.05	-19.63	-19.83
5600	-0.15	-12.98	-13.06	19.56	-27.91	-26.80	-19.88	-19.99
5750	-0.14	-13.33	-13.29	20.29	-31.05	-30.00	-20.03	-20.27
5900	-0.15	-13.73	-13.68	21.47	-32.91	-33.61	-21.75	-22.16
6050	-0.16	-14.04	-14.07	22.02	-39.78	-37.57	-22.07	-21.99

Bi-Directional Coupler

MBDC-13-63HP+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = -55°C, Configuration C.

Freq. (MHz)	I. Loss (dB) In - Out	Coupling (dB)		Directivity (dB) In - Fwd	Return Loss (dB)			
		In - Fwd	Out - Rev		In	Out	Fwd	Rev
50	-0.03	-45.05	-45.06	25.01	-42.84	-42.39	-43.21	-45.03
200	-0.03	-33.04	-33.05	26.44	-36.50	-36.11	-36.07	-36.14
350	-0.03	-28.19	-28.21	22.85	-36.62	-37.28	-33.07	-32.81
500	-0.04	-25.13	-25.15	22.47	-39.22	-42.41	-37.60	-38.58
650	-0.04	-22.91	-22.92	22.33	-40.49	-58.70	-41.87	-47.17
800	-0.05	-21.17	-21.19	22.58	-38.71	-44.58	-45.18	-49.34
950	-0.06	-19.77	-19.78	23.29	-39.11	-46.70	-46.04	-48.45
1100	-0.06	-18.58	-18.59	23.28	-43.17	-57.91	-42.26	-44.71
1250	-0.07	-17.58	-17.58	22.81	-41.93	-48.17	-40.74	-40.85
1400	-0.07	-16.70	-16.71	22.25	-42.27	-43.15	-42.37	-45.35
1550	-0.08	-15.93	-15.95	22.24	-38.80	-37.54	-43.62	-42.66
1700	-0.08	-15.28	-15.29	22.01	-43.49	-39.03	-40.49	-44.28
1850	-0.08	-14.69	-14.70	21.76	-41.55	-36.49	-38.25	-46.75
2000	-0.09	-14.16	-14.16	21.26	-44.84	-35.17	-37.19	-59.08
2150	-0.09	-13.70	-13.71	21.25	-46.30	-34.51	-35.50	-40.59
2300	-0.10	-13.29	-13.30	21.39	-41.85	-33.49	-33.19	-35.82
2450	-0.10	-12.93	-12.94	21.32	-41.63	-33.07	-31.89	-32.88
2600	-0.10	-12.60	-12.60	21.19	-38.91	-34.58	-29.78	-30.13
2750	-0.11	-12.37	-12.35	21.36	-34.62	-39.51	-29.12	-30.20
2900	-0.11	-12.13	-12.11	21.40	-33.35	-39.01	-28.16	-30.54
3050	-0.11	-11.92	-11.89	20.83	-32.51	-38.27	-26.73	-29.51
3200	-0.13	-11.80	-11.77	20.58	-30.93	-38.62	-25.85	-28.97
3350	-0.12	-11.65	-11.61	20.02	-30.98	-35.00	-25.66	-27.01
3500	-0.12	-11.49	-11.45	19.13	-29.93	-33.54	-24.05	-25.42
3650	-0.12	-11.44	-11.41	19.41	-29.43	-31.90	-23.53	-24.64
3800	-0.14	-11.43	-11.39	19.62	-28.66	-31.59	-23.17	-24.45
3950	-0.13	-11.39	-11.35	19.66	-28.94	-30.57	-24.06	-24.60
4100	-0.14	-11.44	-11.39	19.59	-28.45	-30.34	-24.31	-24.75
4250	-0.14	-11.39	-11.35	18.96	-27.46	-28.53	-23.04	-23.46
4400	-0.14	-11.51	-11.49	19.29	-25.32	-25.95	-23.24	-22.73
4550	-0.16	-11.58	-11.54	18.80	-23.53	-23.83	-22.98	-22.24
4700	-0.18	-11.74	-11.71	18.82	-22.51	-22.74	-22.57	-22.16
4850	-0.18	-11.85	-11.82	19.02	-21.25	-21.73	-21.88	-22.04
5000	-0.19	-12.06	-12.02	18.96	-20.67	-21.21	-22.33	-22.19
5150	-0.20	-12.26	-12.23	18.47	-20.17	-20.77	-21.50	-21.60
5300	-0.24	-12.48	-12.46	19.40	-19.82	-19.88	-22.38	-22.40
5450	-0.21	-12.70	-12.71	21.03	-19.63	-19.83	-24.76	-24.05
5600	-0.22	-12.97	-13.05	21.41	-19.88	-19.99	-27.91	-26.80
5750	-0.22	-13.33	-13.29	22.46	-20.03	-20.27	-31.05	-30.00
5900	-0.20	-13.73	-13.67	22.37	-21.75	-22.16	-32.91	-33.61
6050	-0.19	-14.02	-14.07	20.54	-22.07	-21.99	-39.78	-37.57

Bi-Directional Coupler

MBDC-13-63HP+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = -55°C, Configuration D.

Freq. (MHz)	I. Loss (dB) In - Out	Coupling (dB)		Directivity (dB) In - Fwd	Return Loss (dB)			
		In - Fwd	Out - Rev		In	Out	Fwd	Rev
50	-0.03	-45.06	-45.05	25.17	-42.39	-42.84	-45.03	-43.21
200	-0.03	-33.05	-33.04	26.60	-36.11	-36.50	-36.14	-36.07
350	-0.03	-28.21	-28.19	23.44	-37.28	-36.62	-32.81	-33.07
500	-0.04	-25.15	-25.13	22.77	-42.41	-39.22	-38.58	-37.60
650	-0.04	-22.92	-22.91	22.81	-58.70	-40.49	-47.17	-41.87
800	-0.05	-21.19	-21.17	23.09	-44.58	-38.71	-49.34	-45.18
950	-0.06	-19.78	-19.77	23.94	-46.70	-39.11	-48.45	-46.04
1100	-0.06	-18.59	-18.58	23.48	-57.91	-43.17	-44.71	-42.26
1250	-0.07	-17.58	-17.58	23.37	-48.17	-41.93	-40.85	-40.74
1400	-0.07	-16.71	-16.70	23.01	-43.15	-42.27	-45.35	-42.37
1550	-0.08	-15.95	-15.93	23.04	-37.54	-38.80	-42.66	-43.62
1700	-0.08	-15.29	-15.28	23.26	-39.03	-43.49	-44.28	-40.49
1850	-0.08	-14.70	-14.69	23.58	-36.49	-41.55	-46.75	-38.25
2000	-0.09	-14.16	-14.16	23.66	-35.17	-44.84	-59.08	-37.19
2150	-0.09	-13.71	-13.70	23.07	-34.51	-46.30	-40.59	-35.50
2300	-0.09	-13.30	-13.29	23.26	-33.49	-41.85	-35.82	-33.19
2450	-0.10	-12.94	-12.93	22.83	-33.07	-41.63	-32.88	-31.89
2600	-0.10	-12.60	-12.60	22.00	-34.58	-38.91	-30.13	-29.78
2750	-0.10	-12.35	-12.37	22.25	-39.51	-34.62	-30.20	-29.12
2900	-0.10	-12.11	-12.13	22.01	-39.01	-33.35	-30.54	-28.16
3050	-0.10	-11.89	-11.92	21.82	-38.27	-32.51	-29.51	-26.73
3200	-0.13	-11.77	-11.80	21.92	-38.62	-30.93	-28.97	-25.85
3350	-0.11	-11.61	-11.65	21.47	-35.00	-30.98	-27.01	-25.66
3500	-0.12	-11.45	-11.49	20.88	-33.54	-29.93	-25.42	-24.05
3650	-0.12	-11.41	-11.44	20.69	-31.90	-29.43	-24.64	-23.53
3800	-0.13	-11.39	-11.43	20.55	-31.59	-28.66	-24.45	-23.17
3950	-0.12	-11.35	-11.39	19.92	-30.57	-28.94	-24.60	-24.06
4100	-0.14	-11.39	-11.44	19.52	-30.34	-28.45	-24.75	-24.31
4250	-0.13	-11.35	-11.39	18.21	-28.53	-27.46	-23.46	-23.04
4400	-0.14	-11.49	-11.51	17.76	-25.95	-25.32	-22.73	-23.24
4550	-0.15	-11.54	-11.58	17.22	-23.83	-23.53	-22.24	-22.98
4700	-0.17	-11.71	-11.74	17.21	-22.74	-22.51	-22.16	-22.57
4850	-0.17	-11.82	-11.85	17.10	-21.73	-21.25	-22.04	-21.88
5000	-0.18	-12.02	-12.06	17.60	-21.21	-20.67	-22.19	-22.33
5150	-0.19	-12.23	-12.26	17.61	-20.77	-20.17	-21.60	-21.50
5300	-0.23	-12.46	-12.48	18.05	-19.88	-19.82	-22.40	-22.38
5450	-0.20	-12.71	-12.70	18.65	-19.83	-19.63	-24.05	-24.76
5600	-0.22	-13.05	-12.97	19.07	-19.99	-19.88	-26.80	-27.91
5750	-0.21	-13.29	-13.33	20.00	-20.27	-20.03	-30.00	-31.05
5900	-0.19	-13.67	-13.73	21.24	-22.16	-21.75	-33.61	-32.91
6050	-0.19	-14.07	-14.02	21.87	-21.99	-22.07	-37.57	-39.78

Bi-Directional Coupler

MBDC-13-63HP+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +25°C, Configuration A.

Freq. (MHz)	I. Loss (dB) In - Out	Coupling (dB)		Directivity (dB) In - Fwd	Return Loss (dB)			
		In - Fwd	Out - Rev		In	Out	Fwd	Rev
50	-0.04	-45.04	-45.03	24.05	-47.70	-49.80	-50.99	-50.27
200	-0.05	-33.02	-33.02	23.61	-42.75	-42.95	-47.19	-45.44
350	-0.06	-28.19	-28.19	23.41	-41.07	-41.65	-46.77	-44.16
500	-0.07	-25.13	-25.14	23.05	-39.74	-39.86	-47.38	-42.47
650	-0.07	-22.91	-22.92	22.63	-38.35	-37.65	-46.97	-40.99
800	-0.08	-21.17	-21.18	22.20	-38.74	-37.68	-49.61	-40.01
950	-0.08	-19.76	-19.77	21.96	-38.78	-38.12	-49.14	-39.56
1100	-0.09	-18.57	-18.58	21.49	-38.75	-38.00	-46.11	-39.39
1250	-0.09	-17.56	-17.58	21.16	-40.16	-39.90	-43.40	-39.43
1400	-0.10	-16.69	-16.70	20.88	-43.22	-41.18	-40.83	-40.02
1550	-0.10	-15.93	-15.94	20.72	-43.81	-44.69	-38.74	-40.48
1700	-0.11	-15.27	-15.27	20.29	-47.19	-43.81	-37.21	-41.48
1850	-0.11	-14.67	-14.68	19.96	-59.03	-40.62	-36.09	-43.48
2000	-0.11	-14.15	-14.16	19.82	-40.31	-36.03	-35.38	-44.85
2150	-0.11	-13.70	-13.71	19.93	-36.67	-34.05	-34.57	-42.15
2300	-0.12	-13.28	-13.30	19.55	-33.24	-31.02	-33.93	-38.39
2450	-0.12	-12.92	-12.95	18.98	-30.56	-28.65	-33.14	-35.00
2600	-0.13	-12.62	-12.64	18.75	-28.67	-27.26	-32.21	-32.69
2750	-0.13	-12.33	-12.37	18.29	-26.91	-26.16	-31.20	-30.60
2900	-0.14	-12.10	-12.14	18.21	-25.30	-24.26	-29.76	-29.00
3050	-0.14	-11.89	-11.93	18.01	-23.65	-22.68	-28.41	-27.51
3200	-0.15	-11.75	-11.80	18.16	-22.79	-22.01	-27.30	-26.24
3350	-0.15	-11.62	-11.69	18.06	-21.89	-21.55	-25.96	-25.11
3500	-0.16	-11.53	-11.60	17.79	-21.12	-20.89	-24.91	-24.04
3650	-0.15	-11.45	-11.50	17.76	-20.91	-20.57	-23.67	-23.20
3800	-0.15	-11.44	-11.49	18.23	-20.98	-20.43	-23.06	-22.50
3950	-0.15	-11.40	-11.45	18.10	-20.60	-20.45	-22.17	-21.68
4100	-0.16	-11.44	-11.48	18.41	-20.12	-20.14	-21.71	-21.30
4250	-0.14	-11.44	-11.47	18.99	-20.32	-20.17	-21.25	-21.06
4400	-0.13	-11.53	-11.56	19.40	-20.94	-20.84	-21.11	-20.87
4550	-0.15	-11.60	-11.65	19.53	-21.09	-21.48	-21.18	-20.82
4700	-0.16	-11.73	-11.78	19.79	-21.52	-21.85	-21.24	-20.84
4850	-0.16	-11.89	-11.94	21.04	-22.43	-22.50	-21.33	-20.95
5000	-0.14	-12.02	-12.08	22.40	-23.86	-23.76	-21.23	-21.00
5150	-0.16	-12.23	-12.26	22.09	-24.24	-24.50	-21.62	-21.29
5300	-0.16	-12.47	-12.49	22.77	-24.74	-25.44	-22.10	-21.63
5450	-0.15	-12.73	-12.76	23.55	-26.54	-27.56	-22.57	-22.00
5600	-0.16	-13.01	-13.00	23.02	-28.30	-29.30	-22.71	-22.27
5750	-0.15	-13.33	-13.33	22.23	-29.56	-29.71	-22.89	-22.51
5900	-0.16	-13.69	-13.70	22.40	-29.05	-28.24	-23.00	-23.27
6050	-0.16	-14.09	-14.07	21.84	-30.46	-31.11	-23.53	-23.70

Bi-Directional Coupler

MBDC-13-63HP+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +25°C, Configuration B.

Freq. (MHz)	I. Loss (dB) In - Out	Coupling (dB)		Directivity (dB) In - Fwd	Return Loss (dB)			
		In - Fwd	Out - Rev		In	Out	Fwd	Rev
50	-0.04	-45.03	-45.04	24.00	-49.80	-47.70	-50.27	-50.99
200	-0.05	-33.02	-33.02	23.62	-42.95	-42.75	-45.44	-47.19
350	-0.06	-28.19	-28.19	23.49	-41.65	-41.07	-44.16	-46.77
500	-0.07	-25.14	-25.13	23.27	-39.86	-39.74	-42.47	-47.38
650	-0.07	-22.92	-22.91	23.02	-37.65	-38.35	-40.99	-46.97
800	-0.08	-21.18	-21.17	22.71	-37.68	-38.74	-40.01	-49.61
950	-0.08	-19.77	-19.76	22.61	-38.12	-38.78	-39.56	-49.14
1100	-0.09	-18.58	-18.57	22.45	-38.00	-38.75	-39.39	-46.11
1250	-0.09	-17.58	-17.56	22.37	-39.90	-40.16	-39.43	-43.40
1400	-0.10	-16.70	-16.69	22.12	-41.18	-43.22	-40.02	-40.83
1550	-0.10	-15.94	-15.93	21.80	-44.69	-43.81	-40.48	-38.74
1700	-0.11	-15.27	-15.27	21.51	-43.81	-47.19	-41.48	-37.21
1850	-0.11	-14.68	-14.67	21.21	-40.62	-59.03	-43.48	-36.09
2000	-0.11	-14.16	-14.15	21.03	-36.03	-40.31	-44.85	-35.38
2150	-0.11	-13.71	-13.70	20.86	-34.05	-36.67	-42.15	-34.57
2300	-0.12	-13.30	-13.28	20.67	-31.02	-33.24	-38.39	-33.93
2450	-0.12	-12.95	-12.92	20.52	-28.65	-30.56	-35.00	-33.14
2600	-0.13	-12.64	-12.62	20.37	-27.26	-28.67	-32.69	-32.21
2750	-0.13	-12.37	-12.33	19.89	-26.16	-26.91	-30.60	-31.20
2900	-0.14	-12.14	-12.10	19.42	-24.26	-25.30	-29.00	-29.76
3050	-0.14	-11.93	-11.89	18.84	-22.68	-23.65	-27.51	-28.41
3200	-0.15	-11.80	-11.75	18.74	-22.01	-22.79	-26.24	-27.30
3350	-0.16	-11.69	-11.62	18.57	-21.55	-21.89	-25.11	-25.96
3500	-0.17	-11.60	-11.53	18.64	-20.89	-21.12	-24.04	-24.91
3650	-0.16	-11.50	-11.45	18.40	-20.57	-20.91	-23.20	-23.67
3800	-0.16	-11.49	-11.44	18.44	-20.43	-20.98	-22.50	-23.06
3950	-0.16	-11.45	-11.40	18.21	-20.45	-20.60	-21.68	-22.17
4100	-0.16	-11.48	-11.44	18.23	-20.14	-20.12	-21.30	-21.71
4250	-0.14	-11.47	-11.44	18.31	-20.17	-20.32	-21.06	-21.25
4400	-0.14	-11.56	-11.53	18.49	-20.84	-20.94	-20.87	-21.11
4550	-0.15	-11.65	-11.60	18.30	-21.48	-21.09	-20.82	-21.18
4700	-0.16	-11.78	-11.73	18.26	-21.85	-21.52	-20.84	-21.24
4850	-0.16	-11.94	-11.89	18.68	-22.50	-22.43	-20.95	-21.33
5000	-0.15	-12.08	-12.02	19.66	-23.76	-23.86	-21.00	-21.23
5150	-0.16	-12.26	-12.23	19.73	-24.50	-24.24	-21.29	-21.62
5300	-0.16	-12.49	-12.47	20.54	-25.44	-24.74	-21.63	-22.10
5450	-0.15	-12.76	-12.73	21.05	-27.56	-26.54	-22.00	-22.57
5600	-0.15	-13.00	-13.01	21.62	-29.30	-28.30	-22.27	-22.71
5750	-0.15	-13.33	-13.33	22.45	-29.71	-29.56	-22.51	-22.89
5900	-0.16	-13.70	-13.69	22.80	-28.24	-29.05	-23.27	-23.00
6050	-0.16	-14.07	-14.09	23.73	-31.11	-30.46	-23.70	-23.53

Bi-Directional Coupler

MBDC-13-63HP+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +25°C, Configuration C.

Freq. (MHz)	I. Loss (dB) In - Out	Coupling (dB)		Directivity (dB) In - Fwd	Return Loss (dB)			
		In - Fwd	Out - Rev		In	Out	Fwd	Rev
50	-0.03	-45.03	-45.04	24.07	-50.27	-50.99	-49.80	-47.70
200	-0.04	-33.02	-33.02	23.41	-45.44	-47.19	-42.95	-42.75
350	-0.04	-28.19	-28.19	23.19	-44.16	-46.77	-41.65	-41.07
500	-0.05	-25.14	-25.14	22.95	-42.47	-47.38	-39.86	-39.74
650	-0.05	-22.91	-22.91	22.55	-40.99	-46.97	-37.65	-38.35
800	-0.06	-21.17	-21.17	22.20	-40.01	-49.61	-37.68	-38.74
950	-0.06	-19.76	-19.76	22.00	-39.56	-49.14	-38.12	-38.78
1100	-0.07	-18.58	-18.57	21.62	-39.39	-46.11	-38.00	-38.75
1250	-0.07	-17.57	-17.57	21.29	-39.43	-43.40	-39.90	-40.16
1400	-0.08	-16.69	-16.69	20.95	-40.02	-40.83	-41.18	-43.22
1550	-0.08	-15.93	-15.93	20.69	-40.48	-38.74	-44.69	-43.81
1700	-0.08	-15.27	-15.27	20.22	-41.48	-37.21	-43.81	-47.19
1850	-0.08	-14.68	-14.67	19.83	-43.48	-36.09	-40.62	-59.03
2000	-0.09	-14.16	-14.14	19.72	-44.85	-35.38	-36.03	-40.31
2150	-0.09	-13.71	-13.70	19.84	-42.15	-34.57	-34.05	-36.67
2300	-0.09	-13.28	-13.28	19.49	-38.39	-33.93	-31.02	-33.24
2450	-0.09	-12.94	-12.92	19.00	-35.00	-33.14	-28.65	-30.56
2600	-0.09	-12.64	-12.62	18.84	-32.69	-32.21	-27.26	-28.67
2750	-0.10	-12.37	-12.33	18.38	-30.60	-31.20	-26.16	-26.91
2900	-0.10	-12.14	-12.09	18.30	-29.00	-29.76	-24.26	-25.30
3050	-0.10	-11.93	-11.88	18.02	-27.51	-28.41	-22.68	-23.65
3200	-0.11	-11.80	-11.75	18.07	-26.24	-27.30	-22.01	-22.79
3350	-0.11	-11.68	-11.62	18.03	-25.11	-25.96	-21.55	-21.89
3500	-0.12	-11.59	-11.53	17.66	-24.04	-24.91	-20.89	-21.12
3650	-0.12	-11.49	-11.45	17.73	-23.20	-23.67	-20.57	-20.91
3800	-0.13	-11.48	-11.43	18.21	-22.50	-23.06	-20.43	-20.98
3950	-0.13	-11.44	-11.40	18.13	-21.68	-22.17	-20.45	-20.60
4100	-0.14	-11.48	-11.43	18.47	-21.30	-21.71	-20.14	-20.12
4250	-0.14	-11.47	-11.44	19.04	-21.06	-21.25	-20.17	-20.32
4400	-0.14	-11.56	-11.53	19.49	-20.87	-21.11	-20.84	-20.94
4550	-0.14	-11.64	-11.60	19.56	-20.82	-21.18	-21.48	-21.09
4700	-0.15	-11.77	-11.74	19.64	-20.84	-21.24	-21.85	-21.52
4850	-0.15	-11.94	-11.88	20.81	-20.95	-21.33	-22.50	-22.43
5000	-0.14	-12.07	-12.02	22.11	-21.00	-21.23	-23.76	-23.86
5150	-0.15	-12.26	-12.23	21.87	-21.29	-21.62	-24.50	-24.24
5300	-0.16	-12.49	-12.46	22.70	-21.63	-22.10	-25.44	-24.74
5450	-0.16	-12.76	-12.72	23.67	-22.00	-22.57	-27.56	-26.54
5600	-0.16	-12.99	-13.01	23.37	-22.27	-22.71	-29.30	-28.30
5750	-0.16	-13.32	-13.34	22.64	-22.51	-22.89	-29.71	-29.56
5900	-0.16	-13.70	-13.68	22.66	-23.27	-23.00	-28.24	-29.05
6050	-0.15	-14.05	-14.09	22.18	-23.70	-23.53	-31.11	-30.46

Bi-Directional Coupler

MBDC-13-63HP+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +25°C, Configuration D.

Freq. (MHz)	I. Loss (dB)		Coupling (dB)		Directivity (dB)	Return Loss (dB)			
	In - Out	In - Fwd	Out - Rev	In - Fwd		In	Out	Fwd	Rev
50	-0.04	-45.04	-45.03	24.24	-50.99	-50.27	-47.70	-49.80	
200	-0.04	-33.02	-33.02	23.85	-47.19	-45.44	-42.75	-42.95	
350	-0.04	-28.19	-28.19	23.55	-46.77	-44.16	-41.07	-41.65	
500	-0.05	-25.14	-25.14	23.31	-47.38	-42.47	-39.74	-39.86	
650	-0.05	-22.91	-22.91	23.06	-46.97	-40.99	-38.35	-37.65	
800	-0.06	-21.17	-21.17	22.63	-49.61	-40.01	-38.74	-37.68	
950	-0.06	-19.76	-19.76	22.51	-49.14	-39.56	-38.78	-38.12	
1100	-0.07	-18.57	-18.58	22.29	-46.11	-39.39	-38.75	-38.00	
1250	-0.07	-17.57	-17.57	22.19	-43.40	-39.43	-40.16	-39.90	
1400	-0.08	-16.69	-16.69	21.94	-40.83	-40.02	-43.22	-41.18	
1550	-0.08	-15.93	-15.93	21.68	-38.74	-40.48	-43.81	-44.69	
1700	-0.08	-15.27	-15.27	21.60	-37.21	-41.48	-47.19	-43.81	
1850	-0.08	-14.67	-14.68	21.41	-36.09	-43.48	-59.03	-40.62	
2000	-0.08	-14.14	-14.16	21.29	-35.38	-44.85	-40.31	-36.03	
2150	-0.09	-13.70	-13.71	21.13	-34.57	-42.15	-36.67	-34.05	
2300	-0.09	-13.28	-13.29	20.80	-33.93	-38.39	-33.24	-31.02	
2450	-0.09	-12.92	-12.94	20.49	-33.14	-35.00	-30.56	-28.65	
2600	-0.09	-12.62	-12.64	20.18	-32.21	-32.69	-28.67	-27.26	
2750	-0.10	-12.33	-12.37	19.68	-31.20	-30.60	-26.91	-26.16	
2900	-0.10	-12.09	-12.14	19.30	-29.76	-29.00	-25.30	-24.26	
3050	-0.10	-11.88	-11.93	18.89	-28.41	-27.51	-23.65	-22.68	
3200	-0.11	-11.75	-11.80	18.96	-27.30	-26.24	-22.79	-22.01	
3350	-0.11	-11.62	-11.68	18.84	-25.96	-25.11	-21.89	-21.55	
3500	-0.12	-11.53	-11.59	18.82	-24.91	-24.04	-21.12	-20.89	
3650	-0.12	-11.45	-11.49	18.44	-23.67	-23.20	-20.91	-20.57	
3800	-0.13	-11.43	-11.48	18.33	-23.06	-22.50	-20.98	-20.43	
3950	-0.13	-11.40	-11.44	18.02	-22.17	-21.68	-20.60	-20.45	
4100	-0.14	-11.43	-11.48	18.06	-21.71	-21.30	-20.12	-20.14	
4250	-0.13	-11.44	-11.47	18.27	-21.25	-21.06	-20.32	-20.17	
4400	-0.14	-11.53	-11.56	18.38	-21.11	-20.87	-20.94	-20.84	
4550	-0.14	-11.60	-11.64	18.52	-21.18	-20.82	-21.09	-21.48	
4700	-0.15	-11.74	-11.77	18.56	-21.24	-20.84	-21.52	-21.85	
4850	-0.15	-11.88	-11.94	18.90	-21.33	-20.95	-22.43	-22.50	
5000	-0.14	-12.02	-12.07	19.90	-21.23	-21.00	-23.86	-23.76	
5150	-0.15	-12.23	-12.26	19.78	-21.62	-21.29	-24.24	-24.50	
5300	-0.16	-12.46	-12.49	20.33	-22.10	-21.63	-24.74	-25.44	
5450	-0.15	-12.72	-12.76	20.77	-22.57	-22.00	-26.54	-27.56	
5600	-0.16	-13.01	-12.99	21.36	-22.71	-22.27	-28.30	-29.30	
5750	-0.16	-13.34	-13.32	22.23	-22.89	-22.51	-29.56	-29.71	
5900	-0.16	-13.68	-13.70	22.91	-23.00	-23.27	-29.05	-28.24	
6050	-0.15	-14.09	-14.05	23.87	-23.53	-23.70	-30.46	-31.11	

Bi-Directional Coupler

MBDC-13-63HP+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +105°C, Configuration A.

Freq. (MHz)	I. Loss (dB) In - Out	Coupling (dB)		Directivity (dB) In - Fwd	Return Loss (dB)			
		In - Fwd	Out - Rev		In	Out	Fwd	Rev
50	-0.03	-45.00	-45.02	23.39	-38.26	-39.17	-38.32	-38.21
200	-0.05	-32.97	-33.00	21.21	-45.82	-46.28	-48.33	-45.40
350	-0.05	-28.14	-28.18	22.62	-42.07	-40.22	-39.44	-38.74
500	-0.06	-25.09	-25.14	23.04	-49.28	-44.25	-47.59	-43.56
650	-0.07	-22.87	-22.92	23.05	-50.64	-43.98	-45.04	-42.04
800	-0.08	-21.13	-21.18	23.19	-49.65	-42.79	-52.03	-42.16
950	-0.09	-19.72	-19.77	23.11	-41.48	-39.88	-56.49	-41.23
1100	-0.09	-18.54	-18.59	22.53	-37.47	-36.77	-46.53	-40.13
1250	-0.10	-17.53	-17.59	22.08	-35.25	-35.39	-40.79	-38.22
1400	-0.10	-16.66	-16.71	21.17	-33.52	-32.47	-37.05	-36.12
1550	-0.11	-15.89	-15.93	20.29	-33.17	-33.03	-35.15	-34.99
1700	-0.12	-15.23	-15.27	19.35	-32.86	-33.10	-35.05	-35.26
1850	-0.11	-14.63	-14.68	18.67	-35.20	-35.25	-35.34	-37.18
2000	-0.11	-14.09	-14.14	18.05	-42.06	-38.70	-37.32	-42.54
2150	-0.11	-13.64	-13.68	17.79	-47.09	-37.43	-37.51	-49.38
2300	-0.12	-13.22	-13.27	17.39	-36.17	-33.36	-35.60	-40.08
2450	-0.13	-12.86	-12.91	16.66	-30.65	-28.84	-32.90	-34.13
2600	-0.14	-12.52	-12.57	16.08	-27.60	-26.07	-29.88	-30.27
2750	-0.15	-12.29	-12.36	15.81	-24.61	-24.25	-28.25	-28.17
2900	-0.17	-12.07	-12.14	15.64	-22.24	-21.80	-26.34	-26.14
3050	-0.19	-11.89	-11.96	15.41	-20.16	-19.62	-24.79	-24.66
3200	-0.21	-11.83	-11.89	15.56	-19.35	-18.71	-23.63	-23.38
3350	-0.22	-11.69	-11.77	15.51	-18.54	-18.39	-21.98	-21.88
3500	-0.23	-11.58	-11.67	15.36	-17.99	-17.90	-20.83	-20.55
3650	-0.22	-11.55	-11.62	15.44	-17.65	-17.41	-19.98	-19.76
3800	-0.24	-11.56	-11.62	15.74	-17.77	-17.35	-19.52	-19.12
3950	-0.23	-11.51	-11.57	16.35	-17.78	-17.66	-18.84	-18.46
4100	-0.23	-11.56	-11.61	16.49	-17.70	-17.88	-18.46	-18.14
4250	-0.21	-11.56	-11.61	17.30	-18.17	-18.08	-18.14	-17.86
4400	-0.20	-11.66	-11.69	18.18	-19.35	-19.12	-18.31	-18.00
4550	-0.22	-11.71	-11.74	18.60	-19.88	-20.10	-19.00	-18.37
4700	-0.23	-11.84	-11.88	19.26	-20.70	-21.23	-19.29	-18.72
4850	-0.21	-11.94	-11.97	21.27	-22.09	-21.80	-19.74	-19.18
5000	-0.20	-12.07	-12.10	23.49	-23.57	-24.12	-20.17	-19.95
5150	-0.22	-12.29	-12.33	23.53	-25.17	-26.13	-21.34	-20.85
5300	-0.23	-12.46	-12.51	27.74	-26.98	-28.18	-23.25	-22.60
5450	-0.20	-12.76	-12.77	29.77	-28.76	-29.72	-25.31	-23.92
5600	-0.24	-13.12	-13.04	27.31	-29.70	-31.91	-26.45	-25.15
5750	-0.22	-13.43	-13.38	26.03	-30.27	-31.70	-25.98	-24.63
5900	-0.22	-13.75	-13.74	24.48	-29.66	-28.40	-26.02	-24.98
6050	-0.22	-14.22	-14.15	24.47	-30.38	-30.50	-27.92	-25.98

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Bi-Directional Coupler

MBDC-13-63HP+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +105°C, Configuration B.

Freq. (MHz)	I. Loss (dB) In - Out	Coupling (dB)		Directivity (dB) In - Fwd	Return Loss (dB)			
		In - Fwd	Out - Rev		In	Out	Fwd	Rev
50	-0.05	-45.02	-45.00	23.32	-39.17	-38.26	-38.21	-38.32
200	-0.06	-33.00	-32.97	21.19	-46.28	-45.82	-45.40	-48.33
350	-0.07	-28.18	-28.14	22.59	-40.22	-42.07	-38.74	-39.44
500	-0.08	-25.14	-25.09	23.08	-44.25	-49.28	-43.56	-47.59
650	-0.08	-22.92	-22.87	23.14	-43.98	-50.64	-42.04	-45.04
800	-0.09	-21.18	-21.13	23.36	-42.79	-49.65	-42.16	-52.03
950	-0.10	-19.77	-19.72	23.47	-39.88	-41.48	-41.23	-56.49
1100	-0.11	-18.59	-18.54	23.44	-36.77	-37.47	-40.13	-46.53
1250	-0.11	-17.59	-17.53	23.18	-35.39	-35.25	-38.22	-40.79
1400	-0.12	-16.71	-16.66	22.49	-32.47	-33.52	-36.12	-37.05
1550	-0.13	-15.93	-15.89	21.50	-33.03	-33.17	-34.99	-35.15
1700	-0.13	-15.27	-15.23	20.70	-33.10	-32.86	-35.26	-35.05
1850	-0.13	-14.68	-14.63	19.91	-35.25	-35.20	-37.18	-35.34
2000	-0.13	-14.14	-14.09	19.17	-38.70	-42.06	-42.54	-37.32
2150	-0.13	-13.68	-13.64	18.71	-37.43	-47.09	-49.38	-37.51
2300	-0.14	-13.27	-13.22	18.29	-33.36	-36.17	-40.08	-35.60
2450	-0.15	-12.91	-12.86	17.86	-28.84	-30.65	-34.13	-32.90
2600	-0.16	-12.57	-12.52	17.36	-26.07	-27.60	-30.27	-29.88
2750	-0.17	-12.36	-12.29	17.19	-24.25	-24.61	-28.17	-28.25
2900	-0.19	-12.14	-12.07	16.71	-21.80	-22.24	-26.14	-26.34
3050	-0.21	-11.96	-11.89	16.30	-19.62	-20.16	-24.66	-24.79
3200	-0.24	-11.89	-11.83	16.36	-18.71	-19.35	-23.38	-23.63
3350	-0.24	-11.77	-11.69	16.31	-18.39	-18.54	-21.88	-21.98
3500	-0.25	-11.67	-11.58	16.19	-17.90	-17.99	-20.55	-20.83
3650	-0.25	-11.62	-11.55	16.44	-17.41	-17.65	-19.76	-19.98
3800	-0.26	-11.62	-11.56	16.30	-17.35	-17.77	-19.12	-19.52
3950	-0.25	-11.57	-11.51	16.59	-17.66	-17.78	-18.46	-18.84
4100	-0.25	-11.61	-11.56	16.72	-17.88	-17.70	-18.14	-18.46
4250	-0.23	-11.61	-11.56	17.11	-18.08	-18.17	-17.86	-18.14
4400	-0.22	-11.69	-11.66	17.44	-19.12	-19.35	-18.00	-18.31
4550	-0.23	-11.74	-11.71	17.29	-20.10	-19.88	-18.37	-19.00
4700	-0.24	-11.88	-11.84	17.82	-21.23	-20.70	-18.72	-19.29
4850	-0.22	-11.97	-11.94	18.60	-21.80	-22.09	-19.18	-19.74
5000	-0.21	-12.10	-12.07	19.86	-24.12	-23.57	-19.95	-20.17
5150	-0.24	-12.33	-12.29	20.61	-26.13	-25.17	-20.85	-21.34
5300	-0.25	-12.51	-12.46	22.12	-28.18	-26.98	-22.60	-23.25
5450	-0.23	-12.77	-12.76	23.71	-29.72	-28.76	-23.92	-25.31
5600	-0.27	-13.04	-13.12	24.08	-31.91	-29.70	-25.15	-26.45
5750	-0.25	-13.38	-13.43	26.49	-31.70	-30.27	-24.63	-25.98
5900	-0.27	-13.74	-13.75	28.63	-28.40	-29.66	-24.98	-26.02
6050	-0.27	-14.15	-14.22	29.99	-30.50	-30.38	-25.98	-27.92

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Bi-Directional Coupler

MBDC-13-63HP+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +105°C, Configuration C.

Freq. (MHz)	I. Loss (dB)		Coupling (dB)		Directivity (dB)	Return Loss (dB)			
	In - Out	In - Fwd	Out - Rev	In - Fwd		In	Out	Fwd	Rev
50	-0.03	-45.00	-45.01	23.20	-38.21	-38.32	-39.17	-38.26	
200	-0.04	-32.99	-32.97	20.98	-45.40	-48.33	-46.28	-45.82	
350	-0.04	-28.17	-28.15	22.37	-38.74	-39.44	-40.22	-42.07	
500	-0.05	-25.12	-25.10	22.91	-43.56	-47.59	-44.25	-49.28	
650	-0.05	-22.91	-22.88	22.95	-42.04	-45.04	-43.98	-50.64	
800	-0.06	-21.17	-21.14	23.19	-42.16	-52.03	-42.79	-49.65	
950	-0.06	-19.76	-19.73	23.13	-41.23	-56.49	-39.88	-41.48	
1100	-0.07	-18.58	-18.55	22.61	-40.13	-46.53	-36.77	-37.47	
1250	-0.07	-17.57	-17.54	22.18	-38.22	-40.79	-35.39	-35.25	
1400	-0.08	-16.70	-16.67	21.19	-36.12	-37.05	-32.47	-33.52	
1550	-0.08	-15.93	-15.90	20.22	-34.99	-35.15	-33.03	-33.17	
1700	-0.09	-15.27	-15.24	19.25	-35.26	-35.05	-33.10	-32.86	
1850	-0.09	-14.67	-14.64	18.52	-37.18	-35.34	-35.25	-35.20	
2000	-0.09	-14.13	-14.10	17.92	-42.54	-37.32	-38.70	-42.06	
2150	-0.09	-13.67	-13.65	17.69	-49.38	-37.51	-37.43	-47.09	
2300	-0.10	-13.26	-13.24	17.33	-40.08	-35.60	-33.36	-36.17	
2450	-0.10	-12.90	-12.87	16.66	-34.13	-32.90	-28.84	-30.65	
2600	-0.11	-12.57	-12.54	16.12	-30.27	-29.88	-26.07	-27.60	
2750	-0.11	-12.36	-12.31	15.83	-28.17	-28.25	-24.25	-24.61	
2900	-0.12	-12.13	-12.08	15.65	-26.14	-26.34	-21.80	-22.24	
3050	-0.12	-11.95	-11.90	15.36	-24.66	-24.79	-19.62	-20.16	
3200	-0.14	-11.89	-11.84	15.45	-23.38	-23.63	-18.71	-19.35	
3350	-0.15	-11.76	-11.71	15.47	-21.88	-21.98	-18.39	-18.54	
3500	-0.16	-11.65	-11.59	15.22	-20.55	-20.83	-17.90	-17.99	
3650	-0.16	-11.60	-11.56	15.37	-19.76	-19.98	-17.41	-17.65	
3800	-0.19	-11.61	-11.58	15.73	-19.12	-19.52	-17.35	-17.77	
3950	-0.18	-11.56	-11.52	16.32	-18.46	-18.84	-17.66	-17.78	
4100	-0.19	-11.61	-11.57	16.50	-18.14	-18.46	-17.88	-17.70	
4250	-0.19	-11.60	-11.58	17.28	-17.86	-18.14	-18.08	-18.17	
4400	-0.19	-11.68	-11.67	18.17	-18.00	-18.31	-19.12	-19.35	
4550	-0.20	-11.73	-11.71	18.53	-18.37	-19.00	-20.10	-19.88	
4700	-0.21	-11.87	-11.84	19.00	-18.72	-19.29	-21.23	-20.70	
4850	-0.20	-11.96	-11.94	21.00	-19.18	-19.74	-21.80	-22.09	
5000	-0.18	-12.10	-12.07	23.21	-19.95	-20.17	-24.12	-23.57	
5150	-0.20	-12.33	-12.30	23.55	-20.85	-21.34	-26.13	-25.17	
5300	-0.20	-12.50	-12.48	28.07	-22.60	-23.25	-28.18	-26.98	
5450	-0.17	-12.77	-12.77	30.67	-23.92	-25.31	-29.72	-28.76	
5600	-0.21	-13.03	-13.14	28.06	-25.15	-26.45	-31.91	-29.70	
5750	-0.19	-13.36	-13.47	26.69	-24.63	-25.98	-31.70	-30.27	
5900	-0.20	-13.73	-13.79	24.66	-24.98	-26.02	-28.40	-29.66	
6050	-0.20	-14.13	-14.25	24.71	-25.98	-27.92	-30.50	-30.38	

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Bi-Directional Coupler

MBDC-13-63HP+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +105°C, Configuration D.

Freq. (MHz)	I. Loss (dB) In - Out	Coupling (dB)		Directivity (dB) In - Fwd	Return Loss (dB)			
		In - Fwd	Out - Rev		In	Out	Fwd	Rev
50	-0.03	-45.01	-45.00	23.49	-38.32	-38.21	-38.26	-39.17
200	-0.03	-32.97	-32.99	21.38	-48.33	-45.40	-45.82	-46.28
350	-0.04	-28.15	-28.17	22.65	-39.44	-38.74	-42.07	-40.22
500	-0.04	-25.10	-25.12	23.13	-47.59	-43.56	-49.28	-44.25
650	-0.05	-22.88	-22.91	23.20	-45.04	-42.04	-50.64	-43.98
800	-0.05	-21.14	-21.17	23.30	-52.03	-42.16	-49.65	-42.79
950	-0.06	-19.73	-19.76	23.39	-56.49	-41.23	-41.48	-39.88
1100	-0.06	-18.55	-18.58	23.31	-46.53	-40.13	-37.47	-36.77
1250	-0.07	-17.54	-17.57	23.04	-40.79	-38.22	-35.25	-35.39
1400	-0.07	-16.67	-16.70	22.33	-37.05	-36.12	-33.52	-32.47
1550	-0.08	-15.90	-15.93	21.41	-35.15	-34.99	-33.17	-33.03
1700	-0.08	-15.24	-15.27	20.81	-35.05	-35.26	-32.86	-33.10
1850	-0.08	-14.64	-14.67	20.11	-35.34	-37.18	-35.20	-35.25
2000	-0.08	-14.10	-14.13	19.41	-37.32	-42.54	-42.06	-38.70
2150	-0.09	-13.65	-13.67	18.95	-37.51	-49.38	-47.09	-37.43
2300	-0.09	-13.24	-13.26	18.41	-35.60	-40.08	-36.17	-33.36
2450	-0.10	-12.87	-12.90	17.84	-32.90	-34.13	-30.65	-28.84
2600	-0.10	-12.54	-12.57	17.23	-29.88	-30.27	-27.60	-26.07
2750	-0.11	-12.31	-12.36	17.08	-28.25	-28.17	-24.61	-24.25
2900	-0.11	-12.08	-12.13	16.68	-26.34	-26.14	-22.24	-21.80
3050	-0.12	-11.90	-11.95	16.42	-24.79	-24.66	-20.16	-19.62
3200	-0.14	-11.84	-11.89	16.58	-23.63	-23.38	-19.35	-18.71
3350	-0.14	-11.71	-11.76	16.54	-21.98	-21.88	-18.54	-18.39
3500	-0.15	-11.59	-11.65	16.31	-20.83	-20.55	-17.99	-17.90
3650	-0.16	-11.56	-11.60	16.42	-19.98	-19.76	-17.65	-17.41
3800	-0.19	-11.58	-11.61	16.21	-19.52	-19.12	-17.77	-17.35
3950	-0.18	-11.52	-11.56	16.47	-18.84	-18.46	-17.78	-17.66
4100	-0.19	-11.57	-11.61	16.68	-18.46	-18.14	-17.70	-17.88
4250	-0.19	-11.58	-11.60	17.21	-18.14	-17.86	-18.17	-18.08
4400	-0.19	-11.67	-11.68	17.56	-18.31	-18.00	-19.35	-19.12
4550	-0.19	-11.71	-11.73	17.53	-19.00	-18.37	-19.88	-20.10
4700	-0.19	-11.84	-11.87	18.13	-19.29	-18.72	-20.70	-21.23
4850	-0.18	-11.94	-11.96	18.76	-19.74	-19.18	-22.09	-21.80
5000	-0.16	-12.07	-12.10	19.93	-20.17	-19.95	-23.57	-24.12
5150	-0.18	-12.30	-12.33	20.58	-21.34	-20.85	-25.17	-26.13
5300	-0.18	-12.48	-12.50	21.96	-23.25	-22.60	-26.98	-28.18
5450	-0.16	-12.77	-12.77	23.58	-25.31	-23.92	-28.76	-29.72
5600	-0.20	-13.14	-13.03	24.33	-26.45	-25.15	-29.70	-31.91
5750	-0.19	-13.47	-13.36	26.67	-25.98	-24.63	-30.27	-31.70
5900	-0.19	-13.79	-13.73	29.49	-26.02	-24.98	-29.66	-28.40
6050	-0.20	-14.25	-14.13	30.73	-27.92	-25.98	-30.38	-30.50

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