

Bi-Directional Coupler

MBDC-13-63HP

Typical Performance Data

TEST CONDITIONS: INPUT POWER = +10 dBm @Temperature = -55°C

FREQ. (MHz)	INSERTION LOSS (dB)		COUPLING (dB)		DIRECTIVITY (dB)		RETURN LOSS (dB)			
	In - Out	Rev - Fwd	In Fwd	Rev - Out	In - Rev	Out - Fwd	In	Out	Rev	Fwd
1000	0.03	0.00	19.64	19.64	20.27	20.35	45.26	50.67	44.98	43.82
1200	0.03	0.01	18.19	18.19	20.25	20.29	41.20	47.02	40.82	43.83
1500	0.05	0.02	16.48	16.48	19.62	19.94	37.48	37.45	32.74	33.15
1800	0.06	0.04	15.18	15.18	19.60	19.78	28.93	28.25	27.93	27.53
1900	0.05	0.03	14.81	14.83	19.54	19.51	28.12	27.42	27.50	26.96
2000	0.07	0.04	14.47	14.49	18.86	19.09	27.12	26.44	26.50	26.20
2100	0.08	0.05	14.16	14.19	18.43	18.90	26.19	25.60	24.54	24.53
2200	0.08	0.06	13.89	13.91	18.61	18.89	25.27	24.73	23.70	23.41
2300	0.09	0.06	13.61	13.64	18.97	18.70	24.30	23.80	24.28	23.65
2400	0.10	0.06	13.36	13.39	18.28	18.52	23.40	22.87	23.03	23.01
2500	0.09	0.05	13.17	13.20	18.43	19.00	22.48	21.93	21.68	21.88
2600	0.10	0.05	13.00	13.03	18.92	19.60	21.63	21.07	21.61	21.48
2700	0.11	0.06	12.83	12.87	19.42	20.00	21.10	20.60	21.97	21.67
2800	0.11	0.06	12.66	12.69	19.84	20.37	21.02	20.64	22.40	21.93
2900	0.12	0.05	12.53	12.56	19.60	19.90	21.05	20.58	22.66	22.05
3000	0.12	0.05	12.38	12.41	19.88	19.93	21.05	20.57	22.74	22.22
3100	0.13	0.06	12.24	12.26	19.37	19.48	20.84	20.22	23.42	22.81
3200	0.14	0.05	12.19	12.22	19.35	19.08	20.65	20.11	24.44	23.62
3300	0.14	0.06	12.05	12.08	19.23	18.98	20.33	19.99	24.83	24.06
3400	0.17	0.07	11.98	12.02	18.96	19.04	20.03	19.86	24.76	24.42
3500	0.16	0.06	11.92	11.94	18.34	18.84	19.71	19.60	23.86	23.60
3600	0.14	0.08	11.86	11.89	19.00	19.51	19.52	19.57	22.97	22.87
3700	0.14	0.07	11.80	11.83	19.27	19.67	19.78	19.94	22.80	22.61
3800	0.13	0.05	11.77	11.79	19.98	20.43	20.20	20.46	23.04	22.88
3900	0.12	0.05	11.75	11.77	20.70	21.40	20.88	21.18	23.14	23.18
4000	0.13	0.08	11.82	11.83	20.53	21.00	21.72	21.99	22.52	22.79
4100	0.10	0.07	11.79	11.82	20.44	21.03	22.22	22.50	21.85	22.01
4200	0.11	0.07	11.83	11.89	20.13	20.80	22.63	22.87	21.99	22.02
4300	0.09	0.07	11.86	11.90	19.47	20.29	22.86	22.80	22.43	22.00
4400	0.10	0.06	11.92	11.94	18.78	19.85	22.74	22.47	22.21	21.91
4500	0.11	0.07	11.98	12.03	18.37	19.61	22.69	22.52	21.36	21.35
4600	0.12	0.08	12.03	12.05	17.98	19.23	23.19	23.32	20.93	20.67
4700	0.13	0.07	12.10	12.16	18.65	20.14	23.99	24.12	20.72	20.32
4800	0.13	0.08	12.17	12.20	19.19	21.51	25.35	24.93	20.87	20.27
4900	0.12	0.09	12.28	12.29	20.37	22.75	26.80	25.27	21.41	20.89
5000	0.11	0.08	12.35	12.38	21.90	24.18	28.76	26.23	20.94	20.53
5100	0.11	0.09	12.51	12.57	23.67	26.69	31.98	27.49	21.57	21.08
5200	0.10	0.08	12.60	12.63	25.87	29.53	36.57	27.72	22.89	22.22
5300	0.10	0.07	12.72	12.80	27.85	30.23	35.60	28.22	24.05	22.91
5400	0.10	0.05	12.94	12.99	32.32	33.47	33.13	28.88	25.86	24.00
5500	0.09	0.06	13.15	13.13	32.30	32.85	29.64	27.99	26.81	25.88
5600	0.09	0.06	13.31	13.35	32.09	30.65	27.95	26.31	27.24	27.03
5700	0.07	0.06	13.56	13.57	31.64	29.57	25.71	24.71	30.10	28.53
5800	0.06	0.05	13.76	13.77	27.27	25.47	24.27	23.81	35.64	31.72
5900	0.09	0.06	14.05	14.00	24.10	22.66	23.77	23.52	50.33	40.61
6000	0.08	0.05	14.20	14.22	20.01	20.36	24.01	24.09	43.19	43.39
6100	0.09	0.06	14.52	14.43	18.31	19.53	25.45	25.20	33.83	36.56
6200	0.10	0.05	14.77	14.77	17.33	18.36	27.56	25.82	32.00	35.34
6300	0.11	0.07	15.03	15.04	16.36	17.50	30.00	26.59	32.98	32.50
6400	0.12	0.09	15.31	15.37	16.47	17.14	34.75	26.45	28.80	28.45
6500	0.13	0.10	15.65	15.72	15.85	16.93	36.41	25.09	25.17	25.36
6700	0.14	0.12	16.42	16.54	14.10	15.71	28.93	23.03	21.73	21.75
6900	0.18	0.20	17.37	17.52	12.07	12.95	20.71	19.19	18.27	17.91
7000	0.21	0.24	18.05	18.17	11.78	12.24	18.48	17.42	16.50	16.24

Notes

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Bi-Directional Coupler

MBDC-13-63HP

Typical Performance Data

TEST CONDITIONS: INPUT POWER = +10 dBm @Temperature = +25°C

FREQ. (MHz)	INSERTION LOSS (dB)		COUPLING (dB)		DIRECTIVITY (dB)		RETURN LOSS (dB)			
	In - Out	Rev - Fwd	In Fwd	Rev - Out	In - Rev	Out - Fwd	In	Out	Rev	Fwd
1000	0.02	0.01	19.66	19.66	19.27	19.44	42.53	44.98	45.50	52.85
1200	0.02	0.01	18.21	18.21	18.94	18.99	45.75	52.04	43.58	44.27
1500	0.04	0.03	16.51	16.51	18.98	19.11	36.25	36.01	33.92	33.88
1800	0.05	0.04	15.21	15.22	18.18	18.41	28.58	28.35	27.79	27.69
1900	0.05	0.05	14.85	14.86	17.84	17.94	27.10	26.89	26.57	26.37
2000	0.06	0.05	14.51	14.53	17.44	17.53	25.49	25.23	25.48	25.21
2100	0.07	0.07	14.21	14.24	17.15	17.25	24.31	23.96	24.37	24.05
2200	0.08	0.07	13.92	13.96	16.87	17.08	23.24	22.81	23.19	22.97
2300	0.09	0.07	13.66	13.69	16.72	17.01	22.25	21.73	22.50	22.27
2400	0.09	0.08	13.43	13.47	16.64	17.05	21.42	20.95	21.78	21.60
2500	0.10	0.08	13.25	13.29	16.91	17.20	20.62	20.27	21.23	21.07
2600	0.11	0.08	13.07	13.11	17.00	17.35	19.90	19.66	20.72	20.60
2700	0.12	0.09	12.91	12.95	16.88	17.26	19.25	19.06	20.22	20.18
2800	0.14	0.11	12.79	12.83	16.73	17.20	18.84	18.72	19.93	19.84
2900	0.15	0.12	12.66	12.69	16.53	16.94	18.48	18.29	19.65	19.53
3000	0.15	0.12	12.54	12.56	16.37	16.72	18.33	18.10	19.45	19.37
3100	0.15	0.11	12.42	12.44	16.04	16.40	18.16	17.91	19.20	19.24
3200	0.17	0.13	12.33	12.35	15.91	16.20	18.00	17.80	19.17	19.17
3300	0.16	0.13	12.21	12.24	16.01	16.23	17.94	17.86	19.15	19.10
3400	0.17	0.15	12.12	12.15	16.08	16.31	17.83	17.82	19.11	19.14
3500	0.17	0.15	12.08	12.11	16.34	16.64	17.89	17.87	19.08	19.16
3600	0.16	0.14	12.03	12.05	16.91	17.23	17.97	17.82	19.07	19.25
3700	0.15	0.12	11.96	11.98	17.54	17.71	18.19	18.00	19.32	19.42
3800	0.15	0.10	11.92	11.93	18.19	18.17	18.53	18.40	19.62	19.62
3900	0.13	0.11	11.94	11.94	18.50	18.57	18.98	18.99	19.77	19.78
4000	0.11	0.11	11.94	11.96	18.74	18.93	19.25	19.49	19.92	20.06
4100	0.11	0.11	11.96	11.99	18.67	18.89	19.81	20.11	20.29	20.34
4200	0.11	0.11	12.00	12.02	18.89	19.06	20.43	20.77	20.79	20.78
4300	0.11	0.10	12.01	12.03	19.14	19.21	21.16	21.32	21.45	21.22
4400	0.11	0.10	12.07	12.09	19.47	19.69	22.10	22.14	21.92	21.85
4500	0.11	0.09	12.10	12.11	20.00	20.34	23.56	23.28	22.21	22.06
4600	0.12	0.10	12.17	12.18	21.12	21.61	25.52	25.12	22.82	22.31
4700	0.11	0.10	12.22	12.24	22.60	23.39	27.28	26.78	23.66	22.82
4800	0.11	0.11	12.29	12.31	24.02	25.19	28.74	28.46	24.34	23.60
4900	0.09	0.10	12.38	12.40	26.59	28.61	30.38	31.13	25.35	24.79
5000	0.09	0.10	12.48	12.50	27.81	31.34	33.05	34.43	25.32	25.17
5100	0.09	0.11	12.61	12.64	29.13	33.49	38.93	38.08	25.57	25.51
5200	0.09	0.10	12.74	12.79	31.35	33.87	49.61	38.31	26.98	26.33
5300	0.09	0.09	12.93	12.96	32.90	34.82	39.89	37.97	28.85	27.64
5400	0.08	0.10	13.13	13.13	32.34	35.41	35.51	35.77	29.46	28.20
5500	0.08	0.10	13.32	13.33	30.43	34.28	32.66	31.97	28.73	28.57
5600	0.09	0.12	13.53	13.50	27.37	30.48	31.83	30.89	28.04	28.35
5700	0.10	0.13	13.71	13.71	25.44	28.19	31.46	30.32	28.08	28.59
5800	0.10	0.12	13.94	13.97	24.53	25.91	32.70	30.31	28.93	29.16
5900	0.11	0.12	14.20	14.20	24.19	24.31	33.23	29.74	28.55	28.73
6000	0.12	0.13	14.45	14.48	23.35	23.48	34.00	30.22	26.64	27.08
6100	0.12	0.13	14.72	14.72	22.16	22.63	35.16	30.66	25.50	25.83
6200	0.12	0.14	15.00	15.00	21.42	22.43	39.02	31.13	25.19	24.98
6300	0.12	0.13	15.31	15.30	21.24	22.32	43.65	32.20	25.08	24.29
6400	0.13	0.15	15.60	15.65	20.92	21.68	37.48	31.08	23.79	23.14
6500	0.15	0.17	15.99	16.02	19.73	21.11	33.71	29.35	21.94	22.25
6700	0.16	0.21	16.81	16.85	16.70	17.91	26.27	25.60	20.73	20.75
6900	0.19	0.23	17.76	17.81	14.20	15.39	21.20	20.87	18.95	18.88
7000	0.22	0.24	18.39	18.40	13.36	14.14	20.02	19.60	17.82	17.83

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Bi-Directional Coupler

MBDC-13-63HP

Typical Performance Data

TEST CONDITIONS: INPUT POWER = +10 dBm @Temperature = +105°C

FREQ. (MHz)	INSERTION LOSS (dB)		COUPLING (dB)		DIRECTIVITY (dB)		RETURN LOSS (dB)			
	In - Out	Rev - Fwd	In Fwd	Rev - Out	In - Rev	Out - Fwd	In	Out	Rev	Fwd
1000	0.04	0.04	19.76	19.74	22.35	23.96	32.28	30.74	30.53	30.01
1200	0.05	0.06	18.32	18.29	22.50	25.04	32.78	31.25	30.59	30.06
1500	0.05	0.06	16.63	16.61	22.76	26.21	33.22	32.87	30.51	29.90
1800	0.06	0.07	15.33	15.31	22.50	26.02	33.24	33.61	29.97	29.43
1900	0.07	0.07	14.98	14.96	22.46	25.73	33.12	33.48	29.61	29.10
2000	0.07	0.08	14.64	14.61	22.21	25.02	32.30	32.83	28.83	28.30
2100	0.07	0.09	14.33	14.32	22.13	24.63	30.93	31.36	28.20	27.76
2200	0.08	0.09	14.06	14.05	22.15	24.31	29.41	29.74	27.63	27.37
2300	0.08	0.08	13.80	13.79	22.28	23.89	28.26	28.65	27.18	27.00
2400	0.08	0.08	13.57	13.56	22.53	23.59	27.24	27.49	26.84	26.78
2500	0.08	0.09	13.35	13.33	22.74	23.23	26.38	26.49	26.76	26.82
2600	0.10	0.10	13.20	13.17	23.26	23.46	25.84	25.83	27.21	27.25
2700	0.11	0.11	13.00	12.99	23.86	23.31	24.85	24.96	27.27	27.64
2800	0.11	0.10	12.86	12.84	24.55	23.46	24.27	24.17	27.90	28.09
2900	0.11	0.09	12.72	12.69	25.08	23.27	23.76	23.66	28.22	28.53
3000	0.11	0.10	12.58	12.54	25.76	23.47	23.52	23.25	29.21	29.51
3100	0.13	0.09	12.47	12.43	26.36	23.59	23.40	23.22	30.26	31.15
3200	0.13	0.11	12.38	12.35	26.55	23.38	23.79	23.27	32.49	33.08
3300	0.13	0.11	12.31	12.28	28.74	24.01	24.21	23.77	35.73	36.85
3400	0.11	0.11	12.23	12.20	31.71	24.69	24.75	24.16	41.52	45.00
3500	0.12	0.11	12.16	12.13	35.32	25.19	25.57	24.92	53.75	55.55
3600	0.11	0.11	12.11	12.07	39.53	25.69	26.65	25.85	47.93	43.16
3700	0.13	0.12	12.08	12.04	42.53	25.78	28.27	26.84	39.78	37.73
3800	0.12	0.12	12.07	12.03	43.32	27.76	29.86	28.39	36.06	34.31
3900	0.14	0.14	12.06	12.03	39.59	27.10	32.40	30.24	33.58	32.86
4000	0.11	0.13	12.09	12.05	34.47	29.62	35.87	33.11	32.03	31.41
4100	0.12	0.13	12.12	12.09	31.35	31.44	35.99	34.17	30.44	30.35
4200	0.13	0.13	12.14	12.12	28.78	32.99	32.35	32.86	29.41	29.52
4300	0.13	0.15	12.18	12.14	26.23	33.40	29.62	30.53	28.83	29.31
4400	0.13	0.15	12.25	12.19	24.63	33.01	27.43	28.33	28.84	29.34
4500	0.13	0.15	12.33	12.27	23.20	31.53	25.56	26.13	28.94	29.64
4600	0.13	0.17	12.43	12.39	22.58	30.82	24.34	24.76	29.27	30.63
4700	0.16	0.19	12.49	12.44	20.86	27.56	23.09	23.95	30.00	32.42
4800	0.16	0.17	12.62	12.55	19.85	26.28	21.90	22.97	31.01	33.92
4900	0.14	0.18	12.71	12.61	18.57	24.01	21.63	22.48	31.58	37.04
5000	0.15	0.17	12.87	12.77	18.22	23.16	21.38	22.27	31.45	40.93
5100	0.17	0.18	13.07	12.91	17.79	22.18	21.62	22.35	32.41	38.74
5200	0.14	0.19	13.15	13.03	16.78	20.40	22.11	23.04	31.28	34.96
5300	0.17	0.20	13.34	13.20	16.44	19.72	22.89	24.23	30.48	31.85
5400	0.16	0.20	13.52	13.41	16.17	18.96	24.26	25.66	28.32	28.52
5500	0.17	0.22	13.70	13.56	15.71	18.01	26.84	28.76	25.89	25.94
5600	0.17	0.23	13.86	13.79	14.94	16.71	29.17	32.78	24.03	24.02
5700	0.20	0.25	14.13	14.01	14.30	16.03	30.89	41.04	22.33	22.14
5800	0.17	0.24	14.28	14.25	13.96	15.36	30.82	34.60	21.03	20.68
5900	0.17	0.27	14.51	14.57	13.75	14.62	26.57	27.15	19.96	19.70
6000	0.20	0.27	14.86	14.91	13.43	13.81	23.19	23.25	18.99	18.76
6100	0.23	0.28	15.19	15.14	13.21	13.39	20.31	20.28	18.26	18.06
6200	0.24	0.30	15.49	15.54	12.98	12.58	18.12	18.12	17.40	17.26
6300	0.30	0.32	15.92	15.93	12.56	12.07	16.38	16.50	16.61	16.50
6400	0.34	0.34	16.31	16.38	12.17	11.20	15.04	15.07	15.87	15.79
6500	0.39	0.37	16.72	16.88	11.75	10.84	13.93	13.86	15.22	15.16
6700	0.51	0.42	17.76	17.84	11.15	10.08	12.12	12.03	14.08	14.11
6900	0.63	0.45	18.96	19.14	10.25	8.86	10.72	10.56	13.44	13.44
7000	0.70	0.47	19.64	19.84	10.16	8.09	10.17	9.98	13.06	13.16

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