

# Bi-Directional Coupler

# BDCH-25-33+

## Typical Performance Data

TEST CONDITIONS: INPUT POWER =+5 dBm @Temperature = -55°C, Configuration A

FREQ. (MHz)	INSERTION LOSS <sup>1</sup> (dB) In - Out	COUPLING (dB)		DIRECTIVITY (dB) In - Fwd	RETURN LOSS (dB)			
		In - Fwd	Out - Rev		In	Out	Rev	Fwd
500	0.11	29.70	29.67	29.02	29.08	29.23	29.83	29.48
550	0.12	29.02	29.00	28.89	29.66	29.85	30.42	30.23
600	0.11	28.44	28.40	28.84	30.96	31.37	31.48	31.35
650	0.12	27.93	27.89	29.01	32.16	32.48	31.94	31.81
700	0.12	27.48	27.44	28.97	33.79	34.44	33.04	32.98
750	0.12	27.09	27.06	28.91	34.83	35.81	34.39	34.18
800	0.12	26.76	26.72	28.49	36.84	38.14	35.24	35.50
850	0.13	26.48	26.44	28.42	40.65	42.19	36.22	37.07
900	0.13	26.24	26.20	28.19	51.91	46.68	37.39	38.80
950	0.13	26.04	26.00	28.30	52.19	41.45	37.88	41.70
1000	0.13	25.88	25.85	28.41	42.64	38.42	39.01	41.61
1060	0.14	25.74	25.70	28.89	38.82	35.44	36.31	39.53
1120	0.14	25.63	25.60	28.86	35.72	33.48	34.89	36.68
1180	0.14	25.59	25.55	29.04	33.16	31.52	32.74	34.11
1240	0.15	25.57	25.53	28.87	31.76	30.63	31.71	32.22
1300	0.15	25.60	25.55	29.41	30.75	30.13	30.66	30.97
1360	0.15	25.65	25.59	30.02	30.21	29.90	29.73	30.00
1420	0.15	25.73	25.65	30.38	29.92	29.82	29.37	29.83
1480	0.16	25.81	25.74	29.98	29.56	29.87	29.08	29.38
1540	0.16	25.90	25.84	29.75	29.79	30.55	29.52	29.68
1600	0.16	26.01	25.98	30.88	30.44	31.58	29.81	30.37
1660	0.16	26.17	26.07	31.57	31.34	32.76	30.60	31.01
1720	0.16	26.27	26.18	30.39	32.20	34.47	31.52	32.04
1780	0.17	26.36	26.29	29.49	33.19	36.32	32.60	33.36
1840	0.17	26.45	26.38	30.57	34.87	40.06	34.24	35.33
1900	0.17	26.54	26.40	29.63	36.38	43.90	35.70	37.10
1960	0.17	26.57	26.42	28.83	38.29	52.19	37.98	39.93
2020	0.17	26.58	26.43	27.94	39.62	54.64	40.15	42.71
2080	0.17	26.57	26.40	27.78	42.20	48.51	43.90	51.02
2140	0.18	26.50	26.35	27.20	40.92	42.38	45.94	61.00
2200	0.18	26.44	26.27	26.90	42.46	42.48	47.02	53.54
2260	0.18	26.34	26.15	27.15	41.53	41.00	43.55	46.09
2320	0.19	26.25	26.03	26.83	44.78	41.85	43.01	43.97
2380	0.19	26.14	25.92	26.74	43.84	43.11	42.18	41.14
2440	0.19	26.02	25.82	26.66	42.93	41.12	41.82	40.63
2500	0.19	25.94	25.69	27.26	40.48	40.60	40.64	38.82
2560	0.20	25.86	25.60	27.56	38.03	39.48	39.82	37.15
2620	0.20	25.75	25.55	26.92	35.79	38.01	39.46	35.30
2680	0.21	25.72	25.53	26.96	33.86	35.94	38.32	34.11
2740	0.21	25.68	25.50	26.93	33.23	34.97	36.04	33.12
2800	0.21	25.69	25.52	26.94	31.71	33.49	35.42	32.51
2860	0.21	25.72	25.58	26.47	31.28	33.15	34.55	31.62
2920	0.22	25.78	25.68	25.01	30.38	32.34	33.86	31.26
2980	0.23	25.88	25.83	25.63	30.14	32.08	33.11	31.12
3040	0.22	26.02	26.02	26.09	30.13	31.81	32.62	32.02
3100	0.23	26.30	26.23	23.79	29.92	31.76	32.97	32.21
3160	0.23	26.54	26.49	22.46	30.38	32.29	33.23	32.75
3220	0.23	26.90	26.87	21.47	30.48	32.64	33.57	33.28
3280	0.23	27.25	27.26	20.45	32.25	34.70	34.54	34.09
3340	0.23	27.70	27.66	19.83	33.83	36.44	34.71	34.79
3380	0.24	28.14	28.08	18.66	36.70	40.56	35.33	35.54
3420	0.25	28.38	28.41	18.07	39.59	46.10	34.83	35.50
3460	0.24	28.65	28.74	18.38	47.20	46.58	35.26	34.83
3500	0.25	29.18	29.30	17.05	50.31	40.97	34.61	35.04

(Note 1) Does not include theoretical loss. Nominal theoretical loss 0.01 dB.

**Notes**

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- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
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# Bi-Directional Coupler

# BDCH-25-33+

## Typical Performance Data

TEST CONDITIONS: INPUT POWER =+5 dBm @Temperature = -55°C, Configuration B

FREQ. (MHz)	INSERTION LOSS <sup>1</sup> (dB) In - Out	COUPLING (dB)		DIRECTIVITY (dB) In - Fwd	RETURN LOSS (dB)			
		In - Fwd	Out - Rev		In	Out	Rev	Fwd
500	0.11	29.67	29.70	28.01	29.23	29.08	29.48	29.83
550	0.12	29.00	29.02	27.99	29.85	29.66	30.23	30.42
600	0.12	28.40	28.44	27.99	31.37	30.96	31.35	31.48
650	0.12	27.89	27.93	27.97	32.48	32.16	31.81	31.94
700	0.12	27.44	27.48	27.91	34.44	33.79	32.98	33.04
750	0.12	27.06	27.09	28.17	35.81	34.83	34.18	34.39
800	0.13	26.72	26.76	27.72	38.14	36.84	35.50	35.24
850	0.13	26.44	26.48	27.92	42.19	40.65	37.07	36.22
900	0.13	26.20	26.24	27.69	46.68	51.91	38.80	37.39
950	0.13	26.00	26.04	28.12	41.45	52.19	41.70	37.88
1000	0.14	25.85	25.88	28.12	38.42	42.64	41.61	39.01
1060	0.14	25.70	25.74	28.60	35.44	38.82	39.53	36.31
1120	0.14	25.60	25.63	28.67	33.48	35.72	36.68	34.89
1180	0.15	25.55	25.59	28.79	31.52	33.16	34.11	32.74
1240	0.15	25.53	25.57	29.10	30.63	31.76	32.22	31.71
1300	0.15	25.55	25.60	29.46	30.13	30.75	30.97	30.66
1360	0.15	25.59	25.65	29.83	29.90	30.21	30.00	29.73
1420	0.16	25.65	25.73	30.43	29.82	29.92	29.83	29.37
1480	0.16	25.74	25.81	29.77	29.87	29.56	29.38	29.08
1540	0.16	25.84	25.90	29.61	30.55	29.79	29.68	29.52
1600	0.16	25.98	26.01	30.28	31.58	30.44	30.37	29.81
1660	0.16	26.07	26.17	30.44	32.76	31.34	31.01	30.60
1720	0.17	26.18	26.27	28.99	34.47	32.20	32.04	31.52
1780	0.17	26.29	26.36	28.20	36.32	33.19	33.36	32.60
1840	0.17	26.38	26.45	29.07	40.06	34.87	35.33	34.24
1900	0.17	26.40	26.54	28.22	43.90	36.38	37.10	35.70
1960	0.18	26.42	26.57	27.25	52.19	38.29	39.93	37.98
2020	0.18	26.43	26.58	26.77	54.64	39.62	42.71	40.15
2080	0.18	26.40	26.57	26.58	48.51	42.20	51.02	43.90
2140	0.18	26.35	26.50	26.35	42.38	40.92	61.00	45.94
2200	0.18	26.27	26.44	26.49	42.48	42.46	53.54	47.02
2260	0.19	26.15	26.34	26.35	41.00	41.53	46.09	43.55
2320	0.19	26.03	26.25	27.06	41.85	44.78	43.97	43.01
2380	0.19	25.92	26.14	27.44	43.11	43.84	41.14	42.18
2440	0.20	25.82	26.02	27.79	41.12	42.93	40.63	41.82
2500	0.20	25.69	25.94	28.14	40.60	40.48	38.82	40.64
2560	0.20	25.60	25.86	28.08	39.48	38.03	37.15	39.82
2620	0.20	25.55	25.75	27.91	38.01	35.79	35.30	39.46
2680	0.21	25.53	25.72	28.17	35.94	33.86	34.11	38.32
2740	0.21	25.50	25.68	27.85	34.97	33.23	33.12	36.04
2800	0.21	25.52	25.69	27.09	33.49	31.71	32.51	35.42
2860	0.22	25.58	25.72	26.03	33.15	31.28	31.62	34.55
2920	0.22	25.68	25.78	24.99	32.34	30.38	31.26	33.86
2980	0.23	25.83	25.88	25.73	32.08	30.14	31.12	33.11
3040	0.23	26.02	26.02	25.24	31.81	30.13	32.02	32.62
3100	0.23	26.23	26.30	24.51	31.76	29.92	32.21	32.97
3160	0.23	26.49	26.54	23.33	32.29	30.38	32.75	33.23
3220	0.24	26.87	26.90	22.01	32.64	30.48	33.28	33.57
3280	0.24	27.26	27.25	20.95	34.70	32.25	34.09	34.54
3340	0.24	27.66	27.70	20.32	36.44	33.83	34.79	34.71
3380	0.25	28.08	28.14	18.72	40.56	36.70	35.54	35.33
3420	0.25	28.41	28.38	18.28	46.10	39.59	35.50	34.83
3460	0.25	28.74	28.65	18.76	46.58	47.20	34.83	35.26
3500	0.25	29.30	29.18	17.56	40.97	50.31	35.04	34.61

(Note 1) Does not include theoretical loss. Nominal theoretical loss 0.01 dB.

**Notes**

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# Bi-Directional Coupler

# BDCH-25-33+

## Typical Performance Data

TEST CONDITIONS: INPUT POWER =+5 dBm @Temperature = -55°C, Configuration C

FREQ. (MHz)	INSERTION LOSS <sup>1</sup> (dB) In - Out	COUPLING (dB)		DIRECTIVITY (dB) In - Fwd	RETURN LOSS (dB)			
		In - Fwd	Out - Rev		In	Out	Rev	Fwd
500	0.11	29.67	29.70	29.14	29.83	29.48	29.08	29.23
550	0.12	29.00	29.03	28.77	30.42	30.23	29.66	29.85
600	0.12	28.41	28.44	29.02	31.48	31.35	30.96	31.37
650	0.12	27.90	27.93	28.90	31.94	31.81	32.16	32.48
700	0.12	27.45	27.48	29.29	33.04	32.98	33.79	34.44
750	0.12	27.06	27.10	28.86	34.39	34.18	34.83	35.81
800	0.12	26.73	26.77	28.78	35.24	35.50	36.84	38.14
850	0.13	26.44	26.48	28.56	36.22	37.07	40.65	42.19
900	0.13	26.20	26.25	28.15	37.39	38.80	51.91	46.68
950	0.13	26.01	26.05	28.50	37.88	41.70	52.19	41.45
1000	0.13	25.85	25.89	28.21	39.01	41.61	42.64	38.42
1060	0.13	25.70	25.75	28.93	36.31	39.53	38.82	35.44
1120	0.14	25.60	25.64	28.79	34.89	36.68	35.72	33.48
1180	0.14	25.56	25.59	28.83	32.74	34.11	33.16	31.52
1240	0.14	25.53	25.58	28.85	31.71	32.22	31.76	30.63
1300	0.15	25.56	25.60	29.31	30.66	30.97	30.75	30.13
1360	0.15	25.59	25.66	30.09	29.73	30.00	30.21	29.90
1420	0.15	25.65	25.73	30.51	29.37	29.83	29.92	29.82
1480	0.15	25.74	25.81	30.13	29.08	29.38	29.56	29.87
1540	0.16	25.85	25.90	29.93	29.52	29.68	29.79	30.55
1600	0.16	25.99	26.02	31.09	29.81	30.37	30.44	31.58
1660	0.16	26.08	26.17	31.70	30.60	31.01	31.34	32.76
1720	0.16	26.19	26.28	30.74	31.52	32.04	32.20	34.47
1780	0.16	26.29	26.36	29.72	32.60	33.36	33.19	36.32
1840	0.16	26.38	26.46	30.88	34.24	35.33	34.87	40.06
1900	0.16	26.40	26.55	30.04	35.70	37.10	36.38	43.90
1960	0.17	26.42	26.58	29.15	37.98	39.93	38.29	52.19
2020	0.17	26.43	26.59	28.20	40.15	42.71	39.62	54.64
2080	0.17	26.41	26.57	28.01	43.90	51.02	42.20	48.51
2140	0.17	26.35	26.51	27.34	45.94	61.00	40.92	42.38
2200	0.17	26.28	26.45	27.07	47.02	53.54	42.46	42.48
2260	0.18	26.15	26.34	27.31	43.55	46.09	41.53	41.00
2320	0.18	26.03	26.26	26.98	43.01	43.97	44.78	41.85
2380	0.18	25.92	26.14	26.89	42.18	41.14	43.84	43.11
2440	0.18	25.82	26.03	26.71	41.82	40.63	42.93	41.12
2500	0.19	25.70	25.94	27.39	40.64	38.82	40.48	40.60
2560	0.19	25.61	25.87	27.68	39.82	37.15	38.03	39.48
2620	0.19	25.55	25.76	27.03	39.46	35.30	35.79	38.01
2680	0.20	25.54	25.73	27.02	38.32	34.11	33.86	35.94
2740	0.20	25.50	25.69	27.14	36.04	33.12	33.23	34.97
2800	0.20	25.53	25.70	27.12	35.42	32.51	31.71	33.49
2860	0.21	25.58	25.73	26.63	34.55	31.62	31.28	33.15
2920	0.21	25.68	25.79	25.18	33.86	31.26	30.38	32.34
2980	0.22	25.83	25.88	25.84	33.11	31.12	30.14	32.08
3040	0.22	26.02	26.03	26.20	32.62	32.02	30.13	31.81
3100	0.21	26.24	26.31	23.92	32.97	32.21	29.92	31.76
3160	0.22	26.49	26.55	22.59	33.23	32.75	30.38	32.29
3220	0.22	26.87	26.91	21.62	33.57	33.28	30.48	32.64
3280	0.22	27.26	27.26	20.57	34.54	34.09	32.25	34.70
3340	0.23	27.66	27.70	19.94	34.71	34.79	33.83	36.44
3380	0.23	28.08	28.15	18.86	35.33	35.54	36.70	40.56
3420	0.24	28.41	28.39	18.15	34.83	35.50	39.59	46.10
3460	0.24	28.74	28.66	18.41	35.26	34.83	47.20	46.58
3500	0.24	29.30	29.18	17.02	34.61	35.04	50.31	40.97

(Note 1) Does not include theoretical loss. Nominal theoretical loss 0.01 dB.

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# Bi-Directional Coupler

# BDCH-25-33+

## Typical Performance Data

TEST CONDITIONS: INPUT POWER =+5 dBm @Temperature = -55°C, Configuration D

FREQ. (MHz)	INSERTION LOSS <sup>1</sup> (dB) In - Out	COUPLING (dB)		DIRECTIVITY (dB) In - Fwd	RETURN LOSS (dB)			
		In - Fwd	Out - Rev		In	Out	Rev	Fwd
500	0.11	29.70	29.67	27.90	29.48	29.83	29.23	29.08
550	0.12	29.03	29.00	27.80	30.23	30.42	29.85	29.66
600	0.12	28.44	28.41	27.84	31.35	31.48	31.37	30.96
650	0.12	27.93	27.90	27.69	31.81	31.94	32.48	32.16
700	0.12	27.48	27.45	27.75	32.98	33.04	34.44	33.79
750	0.12	27.10	27.06	27.93	34.18	34.39	35.81	34.83
800	0.12	26.77	26.73	27.57	35.50	35.24	38.14	36.84
850	0.12	26.48	26.44	27.68	37.07	36.22	42.19	40.65
900	0.13	26.25	26.20	27.59	38.80	37.39	46.68	51.91
950	0.13	26.05	26.01	27.99	41.70	37.88	41.45	52.19
1000	0.13	25.89	25.85	28.08	41.61	39.01	38.42	42.64
1060	0.13	25.75	25.70	28.39	39.53	36.31	35.44	38.82
1120	0.14	25.64	25.60	28.66	36.68	34.89	33.48	35.72
1180	0.14	25.59	25.56	28.81	34.11	32.74	31.52	33.16
1240	0.14	25.58	25.53	29.11	32.22	31.71	30.63	31.76
1300	0.15	25.60	25.56	29.56	30.97	30.66	30.13	30.75
1360	0.15	25.66	25.59	29.85	30.00	29.73	29.90	30.21
1420	0.15	25.73	25.65	30.33	29.83	29.37	29.82	29.92
1480	0.15	25.81	25.74	29.88	29.38	29.08	29.87	29.56
1540	0.16	25.90	25.85	29.67	29.68	29.52	30.55	29.79
1600	0.16	26.02	25.99	30.53	30.37	29.81	31.58	30.44
1660	0.16	26.17	26.08	30.48	31.01	30.60	32.76	31.34
1720	0.16	26.28	26.19	29.07	32.04	31.52	34.47	32.20
1780	0.16	26.36	26.29	28.29	33.36	32.60	36.32	33.19
1840	0.17	26.46	26.38	29.09	35.33	34.24	40.06	34.87
1900	0.17	26.55	26.40	28.15	37.10	35.70	43.90	36.38
1960	0.17	26.58	26.42	27.15	39.93	37.98	52.19	38.29
2020	0.17	26.59	26.43	26.64	42.71	40.15	54.64	39.62
2080	0.17	26.57	26.41	26.36	51.02	43.90	48.51	42.20
2140	0.17	26.51	26.35	26.15	61.00	45.94	42.38	40.92
2200	0.17	26.45	26.28	26.20	53.54	47.02	42.48	42.46
2260	0.18	26.34	26.15	25.96	46.09	43.55	41.00	41.53
2320	0.18	26.26	26.03	26.69	43.97	43.01	41.85	44.78
2380	0.18	26.14	25.92	27.08	41.14	42.18	43.11	43.84
2440	0.18	26.03	25.82	27.46	40.63	41.82	41.12	42.93
2500	0.19	25.94	25.70	27.76	38.82	40.64	40.60	40.48
2560	0.19	25.87	25.61	27.56	37.15	39.82	39.48	38.03
2620	0.19	25.76	25.55	27.74	35.30	39.46	38.01	35.79
2680	0.20	25.73	25.54	27.93	34.11	38.32	35.94	33.86
2740	0.20	25.69	25.50	27.78	33.12	36.04	34.97	33.23
2800	0.20	25.70	25.53	27.05	32.51	35.42	33.49	31.71
2860	0.20	25.73	25.58	26.09	31.62	34.55	33.15	31.28
2920	0.21	25.79	25.68	25.34	31.26	33.86	32.34	30.38
2980	0.21	25.88	25.83	26.15	31.12	33.11	32.08	30.14
3040	0.22	26.03	26.02	25.64	32.02	32.62	31.81	30.13
3100	0.21	26.31	26.24	24.96	32.21	32.97	31.76	29.92
3160	0.22	26.55	26.49	23.69	32.75	33.23	32.29	30.38
3220	0.22	26.91	26.87	22.42	33.28	33.57	32.64	30.48
3280	0.22	27.26	27.26	21.16	34.09	34.54	34.70	32.25
3340	0.23	27.70	27.66	20.51	34.79	34.71	36.44	33.83
3380	0.23	28.15	28.08	18.80	35.54	35.33	40.56	36.70
3420	0.24	28.39	28.41	18.35	35.50	34.83	46.10	39.59
3460	0.23	28.66	28.74	18.88	34.83	35.26	46.58	47.20
3500	0.24	29.18	29.30	17.68	35.04	34.61	40.97	50.31

(Note 1) Does not include theoretical loss. Nominal theoretical loss 0.01 dB.

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# Bi-Directional Coupler

# BDCH-25-33+

## Typical Performance Data

TEST CONDITIONS: INPUT POWER =+5 dBm @Temperature = +25°C, Configuration A

FREQ. (MHz)	INSERTION LOSS <sup>1</sup> (dB) In - Out	COUPLING (dB)		DIRECTIVITY (dB) In - Fwd	RETURN LOSS (dB)			
		In - Fwd	Out - Rev		In	Out	Rev	Fwd
500	0.10	29.63	29.61	30.34	30.16	29.99	30.30	30.00
550	0.10	28.96	28.94	30.05	30.59	30.52	30.37	30.14
600	0.10	28.38	28.36	29.23	31.00	30.87	30.58	30.34
650	0.10	27.87	27.84	28.97	31.66	31.73	31.06	31.07
700	0.10	27.42	27.39	28.89	32.68	32.56	31.79	31.79
750	0.10	27.03	27.00	28.57	34.16	34.30	33.10	32.75
800	0.10	26.70	26.67	28.27	36.14	36.06	34.27	34.33
850	0.10	26.41	26.39	28.10	38.64	38.82	35.59	36.21
900	0.10	26.17	26.14	28.18	43.00	42.23	37.30	38.47
950	0.11	25.98	25.95	28.33	50.63	44.54	38.34	41.42
1000	0.11	25.82	25.78	28.10	48.38	42.98	39.27	43.39
1060	0.11	25.67	25.64	28.17	41.76	38.70	37.05	40.67
1120	0.11	25.57	25.54	28.46	37.69	36.23	35.66	37.52
1180	0.12	25.52	25.49	28.81	34.78	33.37	32.71	34.50
1240	0.12	25.50	25.46	28.85	33.37	32.41	32.19	32.76
1300	0.12	25.52	25.48	29.22	31.79	31.10	30.51	31.18
1360	0.12	25.57	25.53	29.60	31.39	30.53	30.02	30.35
1420	0.12	25.65	25.60	30.63	30.92	30.13	29.40	29.77
1480	0.13	25.74	25.69	30.43	30.45	29.83	28.90	29.10
1540	0.13	25.85	25.80	31.08	30.80	30.29	29.23	29.20
1600	0.13	25.97	25.92	31.99	31.00	30.43	28.84	29.02
1660	0.13	26.09	26.02	32.24	31.76	31.03	29.55	29.48
1720	0.13	26.20	26.14	32.45	32.39	32.09	29.89	29.83
1780	0.13	26.31	26.24	31.58	33.41	33.08	30.78	30.83
1840	0.13	26.40	26.32	31.54	34.73	35.33	32.20	31.89
1900	0.13	26.47	26.36	30.78	36.12	36.51	33.31	33.58
1960	0.14	26.52	26.37	29.27	37.19	39.70	35.47	35.58
2020	0.14	26.54	26.36	28.42	38.27	43.27	37.55	38.02
2080	0.14	26.52	26.33	27.37	40.06	48.05	40.85	42.55
2140	0.14	26.47	26.28	27.13	39.99	53.44	41.38	49.77
2200	0.14	26.39	26.19	26.77	42.12	54.55	43.08	49.36
2260	0.14	26.30	26.09	26.61	41.43	47.02	39.18	43.09
2320	0.15	26.19	25.96	26.18	45.12	47.41	39.06	40.79
2380	0.15	26.07	25.86	26.65	46.40	45.36	36.87	37.90
2440	0.15	25.96	25.72	26.42	51.00	43.95	36.26	37.02
2500	0.15	25.86	25.65	27.88	50.33	44.33	36.60	35.84
2560	0.15	25.75	25.53	27.04	47.41	41.35	35.23	35.66
2620	0.16	25.70	25.51	28.08	39.53	39.56	37.06	35.19
2680	0.16	25.63	25.45	27.65	38.01	38.39	36.36	34.86
2740	0.16	25.62	25.46	27.62	34.92	35.99	36.77	34.86
2800	0.16	25.61	25.46	27.19	33.23	34.78	37.42	33.91
2860	0.17	25.64	25.50	26.46	32.71	33.42	36.19	34.82
2920	0.17	25.71	25.61	25.91	30.88	32.50	36.44	33.01
2980	0.17	25.81	25.72	25.20	31.40	32.13	35.39	33.63
3040	0.18	25.99	25.94	25.04	30.59	30.84	33.11	32.22
3100	0.17	26.18	26.14	23.80	31.03	31.35	33.75	32.49
3160	0.19	26.49	26.47	23.19	31.34	30.96	32.20	31.40
3220	0.18	26.76	26.76	21.39	31.12	31.92	32.29	31.53
3280	0.19	27.16	27.17	20.41	32.99	32.91	32.81	31.53
3340	0.19	27.54	27.59	19.36	33.60	34.49	32.31	31.80
3380	0.19	27.86	27.90	18.82	36.50	36.76	33.43	32.64
3420	0.19	28.21	28.29	18.08	36.40	39.61	33.34	33.53
3460	0.20	28.59	28.70	17.71	39.21	39.94	34.63	33.64
3500	0.19	29.00	29.08	17.20	37.03	38.43	34.94	35.03

(Note 1) Does not include theoretical loss. Nominal theoretical loss 0.01 dB.

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# Bi-Directional Coupler

# BDCH-25-33+

## Typical Performance Data

TEST CONDITIONS: INPUT POWER =+5 dBm @Temperature = +25°C, Configuration B

FREQ. (MHz)	INSERTION LOSS <sup>1</sup> (dB) In - Out	COUPLING (dB)		DIRECTIVITY (dB) In - Fwd	RETURN LOSS (dB)			
		In - Fwd	Out - Rev		In	Out	Rev	Fwd
500	0.10	29.61	29.63	29.78	29.99	30.16	30.00	30.30
550	0.10	28.94	28.96	29.62	30.52	30.59	30.14	30.37
600	0.10	28.36	28.38	29.01	30.87	31.00	30.34	30.58
650	0.10	27.84	27.87	28.85	31.73	31.66	31.07	31.06
700	0.10	27.39	27.42	28.43	32.56	32.68	31.79	31.79
750	0.10	27.00	27.03	28.09	34.30	34.16	32.75	33.10
800	0.10	26.67	26.70	28.09	36.06	36.14	34.33	34.27
850	0.11	26.39	26.41	27.80	38.82	38.64	36.21	35.59
900	0.11	26.14	26.17	27.66	42.23	43.00	38.47	37.30
950	0.11	25.95	25.98	27.63	44.54	50.63	41.42	38.34
1000	0.11	25.78	25.82	27.67	42.98	48.38	43.39	39.27
1060	0.11	25.64	25.67	27.62	38.70	41.76	40.67	37.05
1120	0.12	25.54	25.57	27.74	36.23	37.69	37.52	35.66
1180	0.12	25.49	25.52	27.75	33.37	34.78	34.50	32.71
1240	0.12	25.46	25.50	28.01	32.41	33.37	32.76	32.19
1300	0.13	25.48	25.52	28.37	31.10	31.79	31.18	30.51
1360	0.13	25.53	25.57	28.51	30.53	31.39	30.35	30.02
1420	0.13	25.60	25.65	29.34	30.13	30.92	29.77	29.40
1480	0.13	25.69	25.74	29.23	29.83	30.45	29.10	28.90
1540	0.13	25.80	25.85	29.49	30.29	30.80	29.20	29.23
1600	0.14	25.92	25.97	30.31	30.43	31.00	29.02	28.84
1660	0.14	26.02	26.09	30.29	31.03	31.76	29.48	29.55
1720	0.14	26.14	26.20	30.25	32.09	32.39	29.83	29.89
1780	0.14	26.24	26.31	29.60	33.08	33.41	30.83	30.78
1840	0.14	26.32	26.40	29.01	35.33	34.73	31.89	32.20
1900	0.14	26.36	26.47	28.46	36.51	36.12	33.58	33.31
1960	0.14	26.37	26.52	27.92	39.70	37.19	35.58	35.47
2020	0.14	26.36	26.54	27.13	43.27	38.27	38.02	37.55
2080	0.15	26.33	26.52	26.54	48.05	40.06	42.55	40.85
2140	0.15	26.28	26.47	26.12	53.44	39.99	49.77	41.38
2200	0.15	26.19	26.39	25.81	54.55	42.12	49.36	43.08
2260	0.15	26.09	26.30	25.97	47.02	41.43	43.09	39.18
2320	0.15	25.96	26.19	25.59	47.41	45.12	40.79	39.06
2380	0.16	25.86	26.07	25.85	45.36	46.40	37.90	36.87
2440	0.16	25.72	25.96	25.69	43.95	51.00	37.02	36.26
2500	0.16	25.65	25.86	26.84	44.33	50.33	35.84	36.60
2560	0.16	25.53	25.75	26.47	41.35	47.41	35.66	35.23
2620	0.17	25.51	25.70	27.68	39.56	39.53	35.19	37.06
2680	0.17	25.45	25.63	27.63	38.39	38.01	34.86	36.36
2740	0.17	25.46	25.62	28.30	35.99	34.92	34.86	36.77
2800	0.17	25.46	25.61	28.22	34.78	33.23	33.91	37.42
2860	0.18	25.50	25.64	27.49	33.42	32.71	34.82	36.19
2920	0.18	25.61	25.71	27.32	32.50	30.88	33.01	36.44
2980	0.18	25.72	25.81	26.45	32.13	31.40	33.63	35.39
3040	0.18	25.94	25.99	26.46	30.84	30.59	32.22	33.11
3100	0.19	26.14	26.18	25.03	31.35	31.03	32.49	33.75
3160	0.19	26.47	26.49	24.35	30.96	31.34	31.40	32.20
3220	0.19	26.76	26.76	22.95	31.92	31.12	31.53	32.29
3280	0.20	27.17	27.16	21.98	32.91	32.99	31.53	32.81
3340	0.19	27.59	27.54	21.11	34.49	33.60	31.80	32.31
3380	0.20	27.90	27.86	20.18	36.76	36.50	32.64	33.43
3420	0.20	28.29	28.21	19.47	39.61	36.40	33.53	33.34
3460	0.20	28.70	28.59	19.15	39.94	39.21	33.64	34.63
3500	0.20	29.08	29.00	18.59	38.43	37.03	35.03	34.94

(Note 1) Does not include theoretical loss. Nominal theoretical loss 0.01 dB.

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# Bi-Directional Coupler

# BDCH-25-33+

## Typical Performance Data

TEST CONDITIONS: INPUT POWER =+5 dBm @Temperature = +25°C, Configuration C

FREQ. (MHz)	INSERTION LOSS <sup>1</sup> (dB) In - Out	COUPLING (dB)		DIRECTIVITY (dB) In - Fwd	RETURN LOSS (dB)			
		In - Fwd	Out - Rev		In	Out	Rev	Fwd
500	0.09	29.62	29.64	30.31	30.30	30.00	30.16	29.99
550	0.09	28.94	28.96	30.02	30.37	30.14	30.59	30.52
600	0.09	28.36	28.38	29.37	30.58	30.34	31.00	30.87
650	0.09	27.85	27.87	29.06	31.06	31.07	31.66	31.73
700	0.09	27.40	27.42	29.00	31.79	31.79	32.68	32.56
750	0.09	27.01	27.03	28.73	33.10	32.75	34.16	34.30
800	0.09	26.68	26.70	28.36	34.27	34.33	36.14	36.06
850	0.09	26.39	26.42	28.26	35.59	36.21	38.64	38.82
900	0.10	26.15	26.18	28.26	37.30	38.47	43.00	42.23
950	0.10	25.95	25.98	28.35	38.34	41.42	50.63	44.54
1000	0.10	25.79	25.82	28.20	39.27	43.39	48.38	42.98
1060	0.10	25.64	25.68	28.20	37.05	40.67	41.76	38.70
1120	0.10	25.54	25.58	28.31	35.66	37.52	37.69	36.23
1180	0.11	25.49	25.52	28.48	32.71	34.50	34.78	33.37
1240	0.11	25.47	25.51	28.56	32.19	32.76	33.37	32.41
1300	0.11	25.49	25.52	29.11	30.51	31.18	31.79	31.10
1360	0.11	25.54	25.57	29.41	30.02	30.35	31.39	30.53
1420	0.12	25.61	25.65	30.40	29.40	29.77	30.92	30.13
1480	0.12	25.70	25.74	30.46	28.90	29.10	30.45	29.83
1540	0.12	25.81	25.86	31.10	29.23	29.20	30.80	30.29
1600	0.12	25.92	25.97	32.22	28.84	29.02	31.00	30.43
1660	0.12	26.03	26.09	32.33	29.55	29.48	31.76	31.03
1720	0.12	26.14	26.21	32.67	29.89	29.83	32.39	32.09
1780	0.12	26.25	26.32	32.27	30.78	30.83	33.41	33.08
1840	0.12	26.33	26.41	32.23	32.20	31.89	34.73	35.33
1900	0.12	26.37	26.48	31.45	33.31	33.58	36.12	36.51
1960	0.12	26.38	26.53	30.43	35.47	35.58	37.19	39.70
2020	0.12	26.37	26.55	29.54	37.55	38.02	38.27	43.27
2080	0.13	26.34	26.52	28.66	40.85	42.55	40.06	48.05
2140	0.13	26.29	26.47	28.10	41.38	49.77	39.99	53.44
2200	0.13	26.20	26.39	27.66	43.08	49.36	42.12	54.55
2260	0.13	26.10	26.30	27.78	39.18	43.09	41.43	47.02
2320	0.13	25.97	26.20	27.01	39.06	40.79	45.12	47.41
2380	0.14	25.86	26.08	27.45	36.87	37.90	46.40	45.36
2440	0.14	25.73	25.96	26.97	36.26	37.02	51.00	43.95
2500	0.14	25.66	25.87	28.21	36.60	35.84	50.33	44.33
2560	0.14	25.54	25.76	27.61	35.23	35.66	47.41	41.35
2620	0.15	25.52	25.70	28.12	37.06	35.19	39.53	39.56
2680	0.15	25.46	25.63	27.52	36.36	34.86	38.01	38.39
2740	0.15	25.47	25.62	27.61	36.77	34.86	34.92	35.99
2800	0.15	25.47	25.62	27.00	37.42	33.91	33.23	34.78
2860	0.16	25.51	25.65	26.43	36.19	34.82	32.71	33.42
2920	0.16	25.62	25.72	25.66	36.44	33.01	30.88	32.50
2980	0.16	25.72	25.81	24.98	35.39	33.63	31.40	32.13
3040	0.16	25.95	26.00	25.00	33.11	32.22	30.59	30.84
3100	0.16	26.14	26.18	23.70	33.75	32.49	31.03	31.35
3160	0.17	26.48	26.49	23.04	32.20	31.40	31.34	30.96
3220	0.17	26.76	26.76	21.28	32.29	31.53	31.12	31.92
3280	0.17	27.17	27.16	20.46	32.81	31.53	32.99	32.91
3340	0.18	27.60	27.55	19.53	32.31	31.80	33.60	34.49
3380	0.18	27.91	27.86	19.03	33.43	32.64	36.50	36.76
3420	0.18	28.30	28.20	18.28	33.34	33.53	36.40	39.61
3460	0.18	28.71	28.58	17.81	34.63	33.64	39.21	39.94
3500	0.18	29.08	29.00	17.47	34.94	35.03	37.03	38.43

(Note 1) Does not include theoretical loss. Nominal theoretical loss 0.01 dB.

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# Bi-Directional Coupler

# BDCH-25-33+

## Typical Performance Data

TEST CONDITIONS: INPUT POWER =+5 dBm @Temperature = +25°C, Configuration D

FREQ. (MHz)	INSERTION LOSS <sup>1</sup> (dB) In - Out	COUPLING (dB)		DIRECTIVITY (dB) In - Fwd	RETURN LOSS (dB)			
		In - Fwd	Out - Rev		In	Out	Rev	Fwd
500	0.08	29.64	29.62	29.83	30.00	30.30	29.99	30.16
550	0.08	28.96	28.94	29.47	30.14	30.37	30.52	30.59
600	0.09	28.38	28.36	29.02	30.34	30.58	30.87	31.00
650	0.09	27.87	27.85	28.68	31.07	31.06	31.73	31.66
700	0.09	27.42	27.40	28.29	31.79	31.79	32.56	32.68
750	0.09	27.03	27.01	27.94	32.75	33.10	34.30	34.16
800	0.09	26.70	26.68	27.92	34.33	34.27	36.06	36.14
850	0.09	26.42	26.39	27.70	36.21	35.59	38.82	38.64
900	0.09	26.18	26.15	27.50	38.47	37.30	42.23	43.00
950	0.09	25.98	25.95	27.65	41.42	38.34	44.54	50.63
1000	0.09	25.82	25.79	27.60	43.39	39.27	42.98	48.38
1060	0.10	25.68	25.64	27.57	40.67	37.05	38.70	41.76
1120	0.10	25.58	25.54	27.90	37.52	35.66	36.23	37.69
1180	0.10	25.52	25.49	27.93	34.50	32.71	33.37	34.78
1240	0.10	25.51	25.47	28.06	32.76	32.19	32.41	33.37
1300	0.11	25.52	25.49	28.27	31.18	30.51	31.10	31.79
1360	0.11	25.57	25.54	28.49	30.35	30.02	30.53	31.39
1420	0.11	25.65	25.61	29.30	29.77	29.40	30.13	30.92
1480	0.11	25.74	25.70	28.99	29.10	28.90	29.83	30.45
1540	0.11	25.86	25.81	29.39	29.20	29.23	30.29	30.80
1600	0.11	25.97	25.92	29.93	29.02	28.84	30.43	31.00
1660	0.12	26.09	26.03	29.66	29.48	29.55	31.03	31.76
1720	0.12	26.21	26.14	29.65	29.83	29.89	32.09	32.39
1780	0.12	26.32	26.25	28.95	30.83	30.78	33.08	33.41
1840	0.12	26.41	26.33	28.54	31.89	32.20	35.33	34.73
1900	0.12	26.48	26.37	27.83	33.58	33.31	36.51	36.12
1960	0.12	26.53	26.38	27.20	35.58	35.47	39.70	37.19
2020	0.12	26.55	26.37	26.43	38.02	37.55	43.27	38.27
2080	0.12	26.52	26.34	25.86	42.55	40.85	48.05	40.06
2140	0.12	26.47	26.29	25.53	49.77	41.38	53.44	39.99
2200	0.13	26.39	26.20	25.40	49.36	43.08	54.55	42.12
2260	0.13	26.30	26.10	25.25	43.09	39.18	47.02	41.43
2320	0.13	26.20	25.97	25.06	40.79	39.06	47.41	45.12
2380	0.13	26.08	25.86	25.54	37.90	36.87	45.36	46.40
2440	0.13	25.96	25.73	25.29	37.02	36.26	43.95	51.00
2500	0.14	25.87	25.66	26.61	35.84	36.60	44.33	50.33
2560	0.14	25.76	25.54	26.27	35.66	35.23	41.35	47.41
2620	0.14	25.70	25.52	27.67	35.19	37.06	39.56	39.53
2680	0.14	25.63	25.46	27.77	34.86	36.36	38.39	38.01
2740	0.15	25.62	25.47	28.22	34.86	36.77	35.99	34.92
2800	0.15	25.62	25.47	28.26	33.91	37.42	34.78	33.23
2860	0.15	25.65	25.51	27.52	34.82	36.19	33.42	32.71
2920	0.15	25.72	25.62	27.53	33.01	36.44	32.50	30.88
2980	0.16	25.81	25.72	26.57	33.63	35.39	32.13	31.40
3040	0.16	26.00	25.95	26.62	32.22	33.11	30.84	30.59
3100	0.16	26.18	26.14	25.24	32.49	33.75	31.35	31.03
3160	0.16	26.49	26.48	24.57	31.40	32.20	30.96	31.34
3220	0.17	26.76	26.76	23.11	31.53	32.29	31.92	31.12
3280	0.17	27.16	27.17	22.13	31.53	32.81	32.91	32.99
3340	0.18	27.55	27.60	21.23	31.80	32.31	34.49	33.60
3380	0.18	27.86	27.91	20.28	32.64	33.43	36.76	36.50
3420	0.18	28.20	28.30	19.64	33.53	33.34	39.61	36.40
3460	0.18	28.58	28.71	19.25	33.64	34.63	39.94	39.21
3500	0.18	29.00	29.08	18.74	35.03	34.94	38.43	37.03

(Note 1) Does not include theoretical loss. Nominal theoretical loss 0.01 dB.

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- C. The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"). Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)





# Bi-Directional Coupler

# BDCH-25-33+

## Typical Performance Data

TEST CONDITIONS: INPUT POWER =+5 dBm @Temperature = +105°C, Configuration A

FREQ. (MHz)	INSERTION LOSS <sup>1</sup> (dB) In - Out	COUPLING (dB)		DIRECTIVITY (dB) In - Fwd	RETURN LOSS (dB)			
		In - Fwd	Out - Rev		In	Out	Rev	Fwd
500	0.11	29.58	29.56	32.34	31.75	31.69	31.65	31.28
550	0.11	28.92	28.90	31.94	31.46	31.61	31.94	31.53
600	0.11	28.33	28.31	30.91	31.75	31.71	31.64	31.36
650	0.12	27.82	27.80	30.65	32.19	32.39	31.88	31.59
700	0.11	27.37	27.35	29.95	33.26	33.16	31.60	31.51
750	0.12	26.99	26.96	29.79	34.37	34.95	32.57	32.48
800	0.12	26.67	26.63	29.25	34.98	35.20	32.96	33.17
850	0.12	26.38	26.34	29.19	37.28	37.97	34.14	35.07
900	0.12	26.14	26.11	29.30	38.17	37.81	35.64	36.75
950	0.12	25.94	25.91	28.89	41.25	40.77	36.35	39.30
1000	0.12	25.79	25.75	29.13	44.54	41.88	38.11	42.11
1060	0.13	25.64	25.60	28.54	56.53	41.93	37.51	45.66
1120	0.13	25.54	25.51	28.58	50.39	39.25	36.76	42.28
1180	0.13	25.49	25.46	28.37	40.85	36.60	35.14	38.00
1240	0.13	25.47	25.44	28.23	38.18	34.88	33.89	35.23
1300	0.14	25.49	25.47	28.59	34.77	33.10	32.19	33.02
1360	0.14	25.55	25.52	28.84	33.71	32.14	31.30	31.97
1420	0.14	25.62	25.58	28.70	31.97	30.85	30.15	30.69
1480	0.15	25.71	25.70	28.27	31.08	30.48	29.56	29.86
1540	0.15	25.82	25.80	28.89	30.25	29.95	28.98	29.17
1600	0.15	25.94	25.92	29.45	30.13	30.08	28.86	29.36
1660	0.15	26.09	26.03	30.10	29.94	30.02	28.66	29.09
1720	0.16	26.20	26.14	29.34	30.05	30.47	28.93	29.45
1780	0.16	26.29	26.27	30.48	30.68	31.57	29.25	29.74
1840	0.16	26.41	26.30	30.55	31.36	32.65	30.34	31.08
1900	0.16	26.48	26.35	29.91	32.70	34.78	31.32	32.18
1960	0.16	26.53	26.35	28.48	33.72	36.59	33.33	34.26
2020	0.16	26.54	26.35	27.77	35.85	41.13	35.90	37.49
2080	0.16	26.52	26.30	26.61	37.76	44.99	39.15	43.16
2140	0.16	26.46	26.24	25.99	39.48	55.38	42.98	55.43
2200	0.16	26.39	26.16	25.55	43.09	53.98	41.94	47.49
2260	0.17	26.29	26.04	25.71	42.63	43.83	39.91	41.88
2320	0.17	26.20	25.92	25.37	48.93	43.35	39.02	39.04
2380	0.17	26.10	25.81	25.48	46.54	42.68	37.66	37.38
2440	0.17	25.98	25.71	25.56	47.77	42.46	36.51	36.17
2500	0.18	25.86	25.61	25.79	44.81	42.74	36.49	35.21
2560	0.18	25.78	25.52	25.49	42.35	42.00	35.51	35.27
2620	0.18	25.69	25.45	26.02	38.50	42.02	38.17	34.71
2680	0.19	25.66	25.43	26.16	36.86	38.63	38.73	35.57
2740	0.19	25.60	25.42	26.13	34.80	36.68	38.31	34.33
2800	0.19	25.64	25.46	26.21	33.25	34.86	38.88	35.01
2860	0.20	25.68	25.54	26.69	32.37	33.39	36.70	33.41
2920	0.20	25.73	25.61	25.35	30.92	32.09	35.90	33.03
2980	0.20	25.85	25.75	25.51	30.76	31.06	34.00	32.13
3040	0.20	25.98	25.90	24.70	30.25	30.58	33.02	32.27
3100	0.20	26.23	26.16	24.26	30.15	30.23	31.53	31.11
3160	0.21	26.44	26.40	23.14	30.62	30.57	30.56	30.63
3220	0.21	26.75	26.74	21.96	30.85	30.97	30.03	29.98
3280	0.21	27.09	27.10	21.22	32.86	32.46	30.59	30.40
3340	0.21	27.50	27.55	20.24	33.82	33.61	30.02	30.20
3380	0.22	27.82	27.88	20.00	37.15	35.65	31.08	31.17
3420	0.22	28.17	28.20	19.28	37.39	37.86	31.75	31.51
3460	0.22	28.55	28.60	18.57	40.44	37.69	33.09	32.22
3500	0.22	28.97	29.06	17.92	37.58	37.25	35.44	34.67

(Note 1) Does not include theoretical loss. Nominal theoretical loss 0.01 dB.

**Notes**

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# Bi-Directional Coupler

# BDCH-25-33+

## Typical Performance Data

TEST CONDITIONS: INPUT POWER =+5 dBm @Temperature = +105°C, Configuration B

FREQ. (MHz)	INSERTION LOSS <sup>1</sup> (dB) In - Out	COUPLING (dB)		DIRECTIVITY (dB) In - Fwd	RETURN LOSS (dB)			
		In - Fwd	Out - Rev		In	Out	Rev	Fwd
500	0.10	29.56	29.58	31.36	31.69	31.75	31.28	31.65
550	0.10	28.90	28.92	31.39	31.61	31.46	31.53	31.94
600	0.10	28.31	28.33	30.35	31.71	31.75	31.36	31.64
650	0.11	27.80	27.82	30.18	32.39	32.19	31.59	31.88
700	0.11	27.35	27.37	29.75	33.16	33.26	31.51	31.60
750	0.11	26.96	26.99	29.60	34.95	34.37	32.48	32.57
800	0.11	26.63	26.67	29.03	35.20	34.98	33.17	32.96
850	0.11	26.34	26.38	28.82	37.97	37.28	35.07	34.14
900	0.11	26.11	26.14	28.44	37.81	38.17	36.75	35.64
950	0.11	25.91	25.94	28.23	40.77	41.25	39.30	36.35
1000	0.12	25.75	25.79	28.18	41.88	44.54	42.11	38.11
1060	0.12	25.60	25.64	27.83	41.93	56.53	45.66	37.51
1120	0.12	25.51	25.54	27.64	39.25	50.39	42.28	36.76
1180	0.12	25.46	25.49	27.29	36.60	40.85	38.00	35.14
1240	0.13	25.44	25.47	27.11	34.88	38.18	35.23	33.89
1300	0.13	25.47	25.49	27.25	33.10	34.77	33.02	32.19
1360	0.13	25.52	25.55	27.69	32.14	33.71	31.97	31.30
1420	0.14	25.58	25.62	27.70	30.85	31.97	30.69	30.15
1480	0.14	25.70	25.71	27.50	30.48	31.08	29.86	29.56
1540	0.14	25.80	25.82	27.94	29.95	30.25	29.17	28.98
1600	0.14	25.92	25.94	28.36	30.08	30.13	29.36	28.86
1660	0.15	26.03	26.09	29.17	30.02	29.94	29.09	28.66
1720	0.15	26.14	26.20	28.58	30.47	30.05	29.45	28.93
1780	0.15	26.27	26.29	28.66	31.57	30.68	29.74	29.25
1840	0.15	26.30	26.41	28.92	32.65	31.36	31.08	30.34
1900	0.15	26.35	26.48	28.51	34.78	32.70	32.18	31.32
1960	0.15	26.35	26.53	27.92	36.59	33.72	34.26	33.33
2020	0.16	26.35	26.54	27.10	41.13	35.85	37.49	35.90
2080	0.15	26.30	26.52	26.21	44.99	37.76	43.16	39.15
2140	0.16	26.24	26.46	25.63	55.38	39.48	55.43	42.98
2200	0.16	26.16	26.39	25.38	53.98	43.09	47.49	41.94
2260	0.16	26.04	26.29	25.01	43.83	42.63	41.88	39.91
2320	0.16	25.92	26.20	25.07	43.35	48.93	39.04	39.02
2380	0.16	25.81	26.10	25.27	42.68	46.54	37.38	37.66
2440	0.16	25.71	25.98	25.52	42.46	47.77	36.17	36.51
2500	0.16	25.61	25.86	25.64	42.74	44.81	35.21	36.49
2560	0.17	25.52	25.78	25.56	42.00	42.35	35.27	35.51
2620	0.17	25.45	25.69	26.17	42.02	38.50	34.71	38.17
2680	0.18	25.43	25.66	26.68	38.63	36.86	35.57	38.73
2740	0.18	25.42	25.60	26.89	36.68	34.80	34.33	38.31
2800	0.19	25.46	25.64	26.88	34.86	33.25	35.01	38.88
2860	0.19	25.54	25.68	27.34	33.39	32.37	33.41	36.70
2920	0.19	25.61	25.73	26.70	32.09	30.92	33.03	35.90
2980	0.19	25.75	25.85	26.97	31.06	30.76	32.13	34.00
3040	0.19	25.90	25.98	26.74	30.58	30.25	32.27	33.02
3100	0.20	26.16	26.23	25.74	30.23	30.15	31.11	31.53
3160	0.20	26.40	26.44	24.69	30.57	30.62	30.63	30.56
3220	0.20	26.74	26.75	23.14	30.97	30.85	29.98	30.03
3280	0.21	27.10	27.09	22.55	32.46	32.86	30.40	30.59
3340	0.21	27.55	27.50	21.50	33.61	33.82	30.20	30.02
3380	0.21	27.88	27.82	20.99	35.65	37.15	31.17	31.08
3420	0.21	28.20	28.17	20.31	37.86	37.39	31.51	31.75
3460	0.21	28.60	28.55	19.68	37.69	40.44	32.22	33.09
3500	0.21	29.06	28.97	18.84	37.25	37.58	34.67	35.44

(Note 1) Does not include theoretical loss. Nominal theoretical loss 0.01 dB.

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# Bi-Directional Coupler

# BDCH-25-33+

## Typical Performance Data

TEST CONDITIONS: INPUT POWER =+5 dBm @Temperature = +105°C, Configuration C

FREQ. (MHz)	INSERTION LOSS <sup>1</sup> (dB) In - Out	COUPLING (dB)		DIRECTIVITY (dB) In - Fwd	RETURN LOSS (dB)			
		In - Fwd	Out - Rev		In	Out	Rev	Fwd
500	0.10	29.57	29.58	32.51	31.65	31.28	31.75	31.69
550	0.10	28.90	28.91	32.22	31.94	31.53	31.46	31.61
600	0.10	28.31	28.33	31.19	31.64	31.36	31.75	31.71
650	0.10	27.80	27.82	30.85	31.88	31.59	32.19	32.39
700	0.10	27.36	27.37	30.01	31.60	31.51	33.26	33.16
750	0.11	26.97	26.99	29.89	32.57	32.48	34.37	34.95
800	0.11	26.64	26.66	29.50	32.96	33.17	34.98	35.20
850	0.11	26.34	26.38	29.37	34.14	35.07	37.28	37.97
900	0.11	26.11	26.14	29.15	35.64	36.75	38.17	37.81
950	0.11	25.91	25.94	28.97	36.35	39.30	41.25	40.77
1000	0.11	25.76	25.79	28.87	38.11	42.11	44.54	41.88
1060	0.11	25.61	25.64	28.65	37.51	45.66	56.53	41.93
1120	0.12	25.51	25.53	28.51	36.76	42.28	50.39	39.25
1180	0.12	25.47	25.49	28.28	35.14	38.00	40.85	36.60
1240	0.12	25.44	25.46	28.18	33.89	35.23	38.18	34.88
1300	0.13	25.48	25.49	28.49	32.19	33.02	34.77	33.10
1360	0.13	25.53	25.55	28.80	31.30	31.97	33.71	32.14
1420	0.13	25.59	25.62	28.73	30.15	30.69	31.97	30.85
1480	0.14	25.70	25.70	28.34	29.56	29.86	31.08	30.48
1540	0.14	25.81	25.82	29.04	28.98	29.17	30.25	29.95
1600	0.14	25.92	25.94	29.54	28.86	29.36	30.13	30.08
1660	0.14	26.03	26.09	30.28	28.66	29.09	29.94	30.02
1720	0.15	26.14	26.19	29.56	28.93	29.45	30.05	30.47
1780	0.15	26.28	26.29	30.70	29.25	29.74	30.68	31.57
1840	0.15	26.30	26.40	30.78	30.34	31.08	31.36	32.65
1900	0.15	26.35	26.48	30.21	31.32	32.18	32.70	34.78
1960	0.15	26.35	26.53	28.85	33.33	34.26	33.72	36.59
2020	0.15	26.36	26.54	28.03	35.90	37.49	35.85	41.13
2080	0.15	26.31	26.52	26.92	39.15	43.16	37.76	44.99
2140	0.15	26.24	26.46	26.18	42.98	55.43	39.48	55.38
2200	0.15	26.16	26.39	25.77	41.94	47.49	43.09	53.98
2260	0.16	26.04	26.29	25.90	39.91	41.88	42.63	43.83
2320	0.16	25.92	26.20	25.66	39.02	39.04	48.93	43.35
2380	0.17	25.82	26.09	25.68	37.66	37.38	46.54	42.68
2440	0.16	25.71	25.98	25.81	36.51	36.17	47.77	42.46
2500	0.17	25.62	25.85	25.87	36.49	35.21	44.81	42.74
2560	0.18	25.52	25.78	25.61	35.51	35.27	42.35	42.00
2620	0.17	25.46	25.68	26.17	38.17	34.71	38.50	42.02
2680	0.18	25.43	25.65	26.19	38.73	35.57	36.86	38.63
2740	0.18	25.42	25.59	26.36	38.31	34.33	34.80	36.68
2800	0.19	25.46	25.64	26.42	38.88	35.01	33.25	34.86
2860	0.19	25.54	25.67	26.60	36.70	33.41	32.37	33.39
2920	0.19	25.61	25.72	25.57	35.90	33.03	30.92	32.09
2980	0.19	25.75	25.85	25.62	34.00	32.13	30.76	31.06
3040	0.20	25.90	25.98	24.77	33.02	32.27	30.25	30.58
3100	0.20	26.16	26.22	24.48	31.53	31.11	30.15	30.23
3160	0.20	26.40	26.44	23.22	30.56	30.63	30.62	30.57
3220	0.21	26.74	26.75	22.10	30.03	29.98	30.85	30.97
3280	0.21	27.10	27.08	21.32	30.59	30.40	32.86	32.46
3340	0.21	27.55	27.49	20.30	30.02	30.20	33.82	33.61
3380	0.21	27.88	27.81	20.09	31.08	31.17	37.15	35.65
3420	0.21	28.20	28.16	19.39	31.75	31.51	37.39	37.86
3460	0.22	28.60	28.54	18.61	33.09	32.22	40.44	37.69
3500	0.22	29.06	28.97	17.99	35.44	34.67	37.58	37.25

(Note 1) Does not include theoretical loss. Nominal theoretical loss 0.01 dB.

**Notes**

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- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"). Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)



# Bi-Directional Coupler

# BDCH-25-33+

## Typical Performance Data

TEST CONDITIONS: INPUT POWER =+5 dBm @Temperature = +105°C, Configuration D

FREQ. (MHz)	INSERTION LOSS <sup>1</sup> (dB) In - Out	COUPLING (dB)		DIRECTIVITY (dB) In - Fwd	RETURN LOSS (dB)			
		In - Fwd	Out - Rev		In	Out	Rev	Fwd
500	0.10	29.58	29.57	31.32	31.28	31.65	31.69	31.75
550	0.10	28.91	28.90	31.17	31.53	31.94	31.61	31.46
600	0.10	28.33	28.31	30.14	31.36	31.64	31.71	31.75
650	0.10	27.82	27.80	29.94	31.59	31.88	32.39	32.19
700	0.10	27.37	27.36	29.51	31.51	31.60	33.16	33.26
750	0.11	26.99	26.97	29.40	32.48	32.57	34.95	34.37
800	0.11	26.66	26.64	28.75	33.17	32.96	35.20	34.98
850	0.11	26.38	26.34	28.64	35.07	34.14	37.97	37.28
900	0.11	26.14	26.11	28.24	36.75	35.64	37.81	38.17
950	0.11	25.94	25.91	28.21	39.30	36.35	40.77	41.25
1000	0.11	25.79	25.76	28.08	42.11	38.11	41.88	44.54
1060	0.11	25.64	25.61	27.67	45.66	37.51	41.93	56.53
1120	0.12	25.53	25.51	27.63	42.28	36.76	39.25	50.39
1180	0.12	25.49	25.47	27.31	38.00	35.14	36.60	40.85
1240	0.12	25.46	25.44	27.12	35.23	33.89	34.88	38.18
1300	0.13	25.49	25.48	27.36	33.02	32.19	33.10	34.77
1360	0.13	25.55	25.53	27.67	31.97	31.30	32.14	33.71
1420	0.14	25.62	25.59	27.73	30.69	30.15	30.85	31.97
1480	0.14	25.70	25.70	27.62	29.86	29.56	30.48	31.08
1540	0.14	25.82	25.81	28.05	29.17	28.98	29.95	30.25
1600	0.14	25.94	25.92	28.59	29.36	28.86	30.08	30.13
1660	0.14	26.09	26.03	29.25	29.09	28.66	30.02	29.94
1720	0.15	26.19	26.14	28.68	29.45	28.93	30.47	30.05
1780	0.15	26.29	26.28	28.83	29.74	29.25	31.57	30.68
1840	0.15	26.40	26.30	28.91	31.08	30.34	32.65	31.36
1900	0.15	26.48	26.35	28.40	32.18	31.32	34.78	32.70
1960	0.15	26.53	26.35	27.72	34.26	33.33	36.59	33.72
2020	0.15	26.54	26.36	26.99	37.49	35.90	41.13	35.85
2080	0.15	26.52	26.31	25.94	43.16	39.15	44.99	37.76
2140	0.16	26.46	26.24	25.29	55.43	42.98	55.38	39.48
2200	0.16	26.39	26.16	25.04	47.49	41.94	53.98	43.09
2260	0.16	26.29	26.04	24.67	41.88	39.91	43.83	42.63
2320	0.16	26.20	25.92	24.78	39.04	39.02	43.35	48.93
2380	0.16	26.09	25.82	24.93	37.38	37.66	42.68	46.54
2440	0.16	25.98	25.71	25.24	36.17	36.51	42.46	47.77
2500	0.17	25.85	25.62	25.51	35.21	36.49	42.74	44.81
2560	0.17	25.78	25.52	25.39	35.27	35.51	42.00	42.35
2620	0.17	25.68	25.46	26.09	34.71	38.17	42.02	38.50
2680	0.18	25.65	25.43	26.70	35.57	38.73	38.63	36.86
2740	0.18	25.59	25.42	26.98	34.33	38.31	36.68	34.80
2800	0.19	25.64	25.46	27.09	35.01	38.88	34.86	33.25
2860	0.19	25.67	25.54	27.53	33.41	36.70	33.39	32.37
2920	0.19	25.72	25.61	27.17	33.03	35.90	32.09	30.92
2980	0.19	25.85	25.75	27.32	32.13	34.00	31.06	30.76
3040	0.20	25.98	25.90	26.89	32.27	33.02	30.58	30.25
3100	0.20	26.22	26.16	26.02	31.11	31.53	30.23	30.15
3160	0.20	26.44	26.40	24.86	30.63	30.56	30.57	30.62
3220	0.21	26.75	26.74	23.28	29.98	30.03	30.97	30.85
3280	0.21	27.08	27.10	22.62	30.40	30.59	32.46	32.86
3340	0.21	27.49	27.55	21.54	30.20	30.02	33.61	33.82
3380	0.21	27.81	27.88	21.01	31.17	31.08	35.65	37.15
3420	0.21	28.16	28.20	20.32	31.51	31.75	37.86	37.39
3460	0.21	28.54	28.60	19.58	32.22	33.09	37.69	40.44
3500	0.22	28.97	29.06	18.81	34.67	35.44	37.25	37.58

(Note 1) Does not include theoretical loss. Nominal theoretical loss 0.01 dB.

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