

Dual-Directional Coupler

DDCH-50-521+

Typical Performance Data

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

FREQ. (MHz)	INSERTION LOSS ¹ (dB) In - Out	COUPLING (dB)		DIRECTIVITY (dB)		RETURN LOSS (dB)			
		In - Fwd	Out - Rev	In - Fwd	Out - Rev	In	Out	Fwd	Rev
10	0.02	56.12	56.11	41.06	49.11	52.07	54.99	12.32	12.41
20	0.02	51.90	51.96	38.72	48.04	47.80	49.64	8.73	8.79
30	0.02	50.72	50.82	38.14	46.53	45.30	46.37	7.91	8.00
40	0.01	50.54	50.66	37.18	43.58	43.89	44.58	8.18	8.30
50	0.01	50.63	50.76	36.17	40.90	43.60	44.10	8.80	8.93
60	0.01	50.73	50.87	35.11	38.84	43.91	44.53	9.48	9.62
70	0.02	50.79	50.92	34.12	37.65	44.75	45.62	10.12	10.28
80	0.02	50.80	50.92	33.34	36.72	45.93	47.50	10.70	10.88
100	0.02	50.74	50.84	32.26	34.77	48.52	53.88	11.63	11.86
120	0.02	50.66	50.73	31.00	32.76	49.71	55.91	12.36	12.64
140	0.02	50.59	50.65	29.43	31.00	44.61	42.56	12.94	13.24
160	0.03	50.57	50.62	28.22	29.51	40.41	38.28	13.42	13.69
180	0.04	50.58	50.62	27.67	29.53	38.75	37.87	13.79	13.99
200	0.04	50.60	50.63	26.79	28.84	37.49	36.58	14.05	14.17
220	0.05	50.63	50.64	26.17	28.25	37.26	36.20	14.24	14.26
240	0.05	50.64	50.65	25.59	27.83	37.78	36.60	14.37	14.31
260	0.05	50.65	50.65	24.92	27.48	38.43	37.41	14.47	14.35
280	0.06	50.67	50.67	24.47	27.02	39.57	38.35	14.54	14.36
300	0.06	50.68	50.67	24.15	26.64	40.69	39.50	14.57	14.36
320	0.07	50.70	50.68	24.12	26.54	42.39	41.78	14.58	14.37
340	0.07	50.68	50.65	23.92	26.69	43.13	44.26	14.58	14.40
360	0.08	50.68	50.64	23.68	26.27	42.85	47.81	14.60	14.46
380	0.09	50.67	50.63	23.52	26.17	41.43	51.41	14.63	14.54
400	0.09	50.66	50.62	23.46	25.99	40.66	56.07	14.65	14.61
420	0.10	50.65	50.61	23.54	26.02	40.25	55.66	14.65	14.68
440	0.10	50.64	50.59	23.61	25.95	39.61	49.79	14.64	14.74
460	0.11	50.63	50.59	23.53	26.05	39.18	45.82	14.65	14.80
480	0.12	50.65	50.59	23.52	25.87	38.69	43.53	14.68	14.89
500	0.12	50.64	50.58	23.54	25.88	38.62	42.98	14.72	14.96
520	0.13	50.63	50.59	23.50	26.07	38.35	42.22	14.76	15.03
540	0.13	50.63	50.58	23.72	26.36	38.18	41.41	14.78	15.09
560	0.14	50.62	50.57	23.94	26.60	38.14	40.16	14.81	15.14
580	0.15	50.63	50.56	24.06	26.67	37.85	39.10	14.88	15.20
600	0.16	50.63	50.57	24.30	26.60	37.84	38.84	14.97	15.25
620	0.16	50.62	50.58	24.50	26.54	37.67	38.86	15.07	15.30
640	0.17	50.63	50.63	23.77	26.74	37.66	39.09	15.17	15.35
660	0.18	50.64	50.62	23.87	26.58	37.89	39.33	15.27	15.41
680	0.19	50.66	50.63	24.03	26.44	38.16	39.87	15.38	15.48
700	0.19	50.68	50.67	23.41	25.86	39.02	41.99	15.49	15.58
720	0.20	50.72	50.71	22.70	25.59	40.07	45.13	15.59	15.67
740	0.20	50.77	50.73	22.67	25.34	41.14	49.69	15.66	15.76
760	0.21	50.82	50.80	22.49	25.15	41.47	49.20	15.72	15.84
780	0.22	50.83	50.81	22.75	25.32	41.14	45.10	15.77	15.92
800	0.23	50.79	50.75	22.98	24.65	39.98	41.54	15.82	15.98
820	0.24	50.75	50.71	22.19	23.31	38.65	39.23	15.86	16.02
840	0.24	50.76	50.72	21.13	22.39	37.80	38.01	15.89	16.04
860	0.25	50.80	50.74	20.39	21.65	37.41	37.37	15.91	16.05
880	0.26	50.84	50.75	19.97	21.12	37.46	37.18	15.93	16.06
900	0.26	50.85	50.76	19.61	20.75	37.23	36.75	15.95	16.07
920	0.27	50.82	50.75	19.03	20.09	36.85	36.30	15.96	16.09
940	0.28	50.80	50.76	18.35	19.34	36.63	36.03	15.98	16.11
960	0.28	50.82	50.76	17.84	18.70	36.21	35.52	15.98	16.12
980	0.29	50.87	50.77	17.47	18.18	35.78	34.94	15.99	16.13
1000	0.30	50.89	50.76	17.44	17.58	35.08	34.11	16.00	16.13

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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Dual-Directional Coupler

DDCH-50-521+

Typical Performance Data

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

FREQ. (MHz)	INSERTION LOSS ¹ (dB) In - Out	COUPLING (dB)		DIRECTIVITY (dB)		RETURN LOSS (dB)			
		In - Fwd	Out - Rev	In - Fwd	Out - Rev	In	Out	Fwd	Rev
10	0.03	56.10	56.07	44.20	38.27	62.44	64.36	12.22	12.29
20	0.02	51.84	51.89	46.06	39.13	61.82	62.73	8.78	8.85
30	0.02	50.61	50.70	48.99	39.79	55.77	56.28	7.98	8.08
40	0.02	50.40	50.53	53.89	41.47	54.52	55.58	8.25	8.39
50	0.02	50.48	50.62	53.55	43.27	55.08	57.66	8.87	9.02
60	0.02	50.59	50.72	48.63	45.08	56.99	59.75	9.55	9.71
70	0.02	50.65	50.78	44.95	45.42	57.75	58.55	10.18	10.34
80	0.02	50.66	50.79	42.60	44.33	55.74	55.04	10.74	10.89
100	0.02	50.61	50.72	39.49	42.96	51.58	51.50	11.62	11.76
120	0.02	50.53	50.62	36.85	40.62	49.24	51.10	12.28	12.41
140	0.02	50.47	50.54	34.32	37.02	51.20	59.72	12.77	12.88
160	0.03	50.44	50.50	32.66	34.57	52.39	60.67	13.14	13.23
180	0.03	50.45	50.50	31.71	34.56	47.49	48.96	13.43	13.51
200	0.04	50.47	50.51	30.51	33.09	47.02	47.99	13.64	13.72
220	0.05	50.48	50.51	29.42	31.74	46.38	48.42	13.82	13.89
240	0.05	50.49	50.50	28.62	30.75	45.35	47.98	13.96	14.03
260	0.05	50.50	50.50	27.64	29.75	45.10	47.89	14.09	14.16
280	0.06	50.51	50.52	26.77	29.07	43.71	46.34	14.20	14.26
300	0.06	50.51	50.52	26.25	28.50	42.96	45.61	14.29	14.35
320	0.07	50.52	50.52	25.80	27.83	42.23	44.62	14.38	14.44
340	0.07	50.51	50.50	25.40	27.57	41.70	44.43	14.45	14.52
360	0.08	50.50	50.49	24.97	27.16	41.70	44.99	14.53	14.60
380	0.09	50.50	50.48	24.56	26.83	41.27	44.97	14.61	14.69
400	0.10	50.50	50.48	24.58	26.73	41.29	45.35	14.68	14.76
420	0.10	50.49	50.46	24.40	26.93	40.56	44.61	14.74	14.83
440	0.11	50.46	50.45	24.32	27.15	39.86	44.37	14.79	14.88
460	0.11	50.44	50.42	24.34	26.78	39.63	44.11	14.84	14.93
480	0.12	50.44	50.41	23.99	26.69	39.43	43.61	14.90	14.99
500	0.13	50.42	50.41	23.48	26.38	39.48	43.84	14.95	15.05
520	0.13	50.43	50.43	23.08	26.02	39.16	43.77	15.01	15.11
540	0.14	50.46	50.46	22.94	25.04	38.98	44.01	15.05	15.15
560	0.15	50.50	50.47	23.48	25.74	39.15	43.78	15.09	15.19
580	0.16	50.50	50.46	23.66	26.07	39.09	43.53	15.14	15.24
600	0.16	50.52	50.48	23.67	26.44	39.11	43.98	15.19	15.29
620	0.17	50.51	50.53	23.96	26.48	38.77	44.60	15.25	15.35
640	0.18	50.51	50.53	24.69	26.79	38.68	45.36	15.30	15.40
660	0.19	50.51	50.53	24.87	26.68	38.95	45.70	15.34	15.45
680	0.19	50.53	50.51	25.15	26.67	39.17	45.48	15.39	15.51
700	0.20	50.55	50.52	25.14	26.22	39.42	46.32	15.44	15.56
720	0.21	50.56	50.54	24.98	25.98	39.69	47.16	15.49	15.60
740	0.21	50.58	50.54	24.90	25.64	40.37	48.35	15.53	15.64
760	0.22	50.58	50.54	24.97	25.07	41.31	49.64	15.55	15.67
780	0.23	50.61	50.58	23.78	24.49	42.24	50.98	15.58	15.72
800	0.24	50.62	50.60	23.05	24.00	42.97	54.25	15.62	15.75
820	0.25	50.61	50.60	22.91	23.32	43.84	58.32	15.65	15.79
840	0.25	50.62	50.61	22.58	22.69	45.01	57.74	15.68	15.82
860	0.26	50.66	50.64	21.76	22.09	46.03	55.85	15.72	15.84
880	0.27	50.71	50.65	21.07	21.15	46.94	53.84	15.75	15.88
900	0.28	50.71	50.65	20.50	20.24	47.17	50.66	15.78	15.93
920	0.28	50.71	50.68	19.66	19.38	47.33	47.75	15.81	15.96
940	0.29	50.70	50.68	19.10	18.73	47.84	46.19	15.84	15.99
960	0.30	50.70	50.68	18.43	18.15	46.68	44.44	15.86	16.00
980	0.31	50.73	50.69	17.77	17.73	44.94	42.94	15.89	16.03
1000	0.31	50.76	50.69	17.15	17.25	42.79	41.29	15.92	16.05

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Dual-Directional Coupler

DDCH-50-521+

Typical Performance Data

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

FREQ. (MHz)	INSERTION LOSS ¹ (dB) In - Out	COUPLING (dB)		DIRECTIVITY (dB)		RETURN LOSS (dB)			
		In - Fwd	Out - Rev	In - Fwd	Out - Rev	In	Out	Fwd	Rev
10	0.04	56.04	56.03	32.03	29.59	58.12	54.32	12.11	12.18
20	0.03	51.76	51.79	32.73	30.86	51.76	49.51	8.82	8.90
30	0.03	50.50	50.57	33.22	31.14	47.90	46.55	8.04	8.17
40	0.03	50.28	50.37	33.83	31.38	46.24	45.29	8.33	8.50
50	0.02	50.35	50.45	34.20	31.81	45.07	44.58	8.96	9.17
60	0.03	50.45	50.56	34.59	32.02	44.51	44.01	9.65	9.87
70	0.03	50.52	50.62	34.90	31.97	44.38	43.63	10.29	10.50
80	0.03	50.53	50.63	34.82	31.73	44.86	43.30	10.85	11.04
100	0.03	50.49	50.58	34.15	31.47	48.53	43.68	11.71	11.82
120	0.03	50.42	50.50	33.44	31.76	54.09	45.47	12.32	12.34
140	0.03	50.37	50.43	33.01	31.79	47.64	46.19	12.72	12.67
160	0.04	50.35	50.41	32.46	32.16	41.89	44.02	12.99	12.91
180	0.04	50.36	50.41	31.86	32.72	37.70	37.53	13.20	13.11
200	0.05	50.39	50.43	31.27	33.08	35.49	35.49	13.36	13.29
220	0.06	50.41	50.43	30.61	33.11	33.98	34.23	13.50	13.48
240	0.06	50.42	50.43	29.93	32.83	32.86	33.18	13.61	13.65
260	0.06	50.43	50.43	29.31	32.34	32.20	32.47	13.73	13.84
280	0.07	50.44	50.44	28.80	31.47	31.69	31.98	13.84	14.02
300	0.08	50.45	50.44	28.14	30.28	31.59	31.89	13.96	14.18
320	0.08	50.46	50.44	27.75	29.41	31.66	31.93	14.09	14.34
340	0.09	50.44	50.41	27.55	28.97	32.03	32.25	14.20	14.47
360	0.09	50.43	50.40	26.86	28.22	32.55	32.67	14.32	14.59
380	0.10	50.42	50.40	26.44	27.65	32.98	32.94	14.44	14.69
400	0.11	50.41	50.39	26.22	27.40	33.41	33.21	14.56	14.76
420	0.11	50.40	50.37	25.95	27.36	33.39	33.22	14.68	14.83
440	0.12	50.39	50.36	25.76	27.30	33.41	33.40	14.78	14.89
460	0.13	50.38	50.35	25.36	27.13	33.60	33.57	14.87	14.95
480	0.13	50.39	50.35	25.23	27.06	33.86	33.65	14.96	15.00
500	0.14	50.39	50.35	25.10	27.16	34.23	33.87	15.04	15.06
520	0.14	50.38	50.35	24.92	27.17	34.30	34.01	15.13	15.12
540	0.15	50.39	50.35	24.94	27.51	34.58	34.40	15.20	15.18
560	0.16	50.38	50.34	25.04	27.88	34.98	34.85	15.26	15.24
580	0.17	50.38	50.34	25.02	27.91	35.33	35.32	15.33	15.32
600	0.18	50.39	50.35	25.04	27.99	35.77	35.96	15.39	15.39
620	0.18	50.40	50.35	25.11	27.81	35.96	36.56	15.46	15.48
640	0.19	50.41	50.38	24.78	27.98	36.30	37.31	15.52	15.57
660	0.20	50.42	50.37	24.79	27.84	36.84	38.13	15.58	15.67
680	0.21	50.44	50.39	24.65	27.80	37.32	38.92	15.65	15.77
700	0.22	50.46	50.41	24.50	27.68	37.97	40.20	15.70	15.85
720	0.22	50.49	50.44	24.08	27.35	38.68	41.15	15.75	15.91
740	0.23	50.53	50.46	23.95	26.92	39.75	42.20	15.80	15.96
760	0.24	50.59	50.51	23.77	27.17	41.02	43.58	15.84	16.01
780	0.25	50.63	50.52	23.64	27.24	42.23	45.62	15.89	16.08
800	0.26	50.59	50.49	23.78	25.93	43.43	49.70	15.94	16.13
820	0.26	50.57	50.47	23.24	24.50	44.72	56.96	15.99	16.17
840	0.27	50.58	50.48	22.28	23.31	46.18	68.68	16.03	16.20
860	0.28	50.60	50.49	21.48	22.43	46.89	55.60	16.07	16.23
880	0.29	50.64	50.50	20.96	21.79	46.27	49.61	16.13	16.28
900	0.29	50.67	50.51	20.42	21.04	43.92	44.91	16.19	16.33
920	0.30	50.67	50.52	19.70	20.22	41.90	41.91	16.24	16.37
940	0.31	50.68	50.52	19.05	19.47	40.71	40.26	16.28	16.40
960	0.32	50.70	50.53	18.43	18.72	39.36	38.73	16.31	16.42
980	0.33	50.73	50.56	17.98	18.14	38.05	37.46	16.35	16.44
1000	0.33	50.72	50.55	17.73	17.53	36.62	36.04	16.39	16.48

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