

# Bi-Directional Coupler

# SYBD-26-13HP+

## Typical Performance Data

TEST CONDITIONS: INPUT POWER =0 dBm @Temperature = +25°C

FREQ. (MHz)	INSERTION LOSS		COUPLING		DIRECTIVITY		RETURN LOSS			
	(dB)		(dB)		(dB)		(dB)			
	IN-OUT	FWD-REV	IN-FWD	OUT-REV	IN-REV	OUT-FWD	IN	OUT	FWD	REV
100	0.07	0.06	44.99	45.00	41.29	43.57	45.12	45.19	45.56	47.62
200	0.05	0.04	39.04	39.03	53.87	51.53	43.47	43.36	44.28	46.19
300	0.03	0.02	35.56	35.55	51.08	50.59	44.76	44.63	44.92	45.86
400	0.01	0.02	33.11	33.09	43.76	43.66	49.06	48.52	43.90	44.23
500	0.01	0.01	31.20	31.19	38.04	39.63	49.80	50.27	41.21	40.38
600	0.01	0.00	29.65	29.64	35.44	37.18	44.41	44.47	38.40	37.00
700	0.02	0.02	28.35	28.36	32.73	34.03	39.87	39.83	35.82	34.47
750	0.03	0.03	27.79	27.77	32.77	33.82	38.29	38.21	34.83	33.51
800	0.03	0.03	27.23	27.23	31.35	32.62	36.80	36.97	33.87	32.57
850	0.03	0.03	26.73	26.72	31.17	31.50	35.61	35.53	32.97	31.78
900	0.04	0.03	26.27	26.25	30.19	31.33	34.48	34.49	32.24	31.26
950	0.06	0.05	25.80	25.80	29.57	30.25	33.44	33.48	31.37	30.48
1000	0.06	0.06	25.43	25.42	27.96	28.40	33.00	32.89	30.81	30.22
1050	0.07	0.06	25.04	25.03	28.12	28.49	32.46	32.27	30.30	29.86
1100	0.07	0.07	24.67	24.64	28.08	28.09	32.02	31.85	29.86	29.54
1150	0.08	0.07	24.29	24.28	27.53	27.73	31.56	31.34	29.35	29.38
1200	0.08	0.08	23.96	23.94	26.28	27.10	31.45	31.05	29.13	29.30
1250	0.10	0.09	23.70	23.70	25.43	25.74	31.26	31.13	29.14	29.42
1300	0.10	0.10	23.37	23.35	25.76	26.14	31.21	31.07	29.14	29.39
1350	0.10	0.10	23.08	23.07	25.52	25.55	31.40	31.19	29.22	29.62
1400	0.11	0.10	22.80	22.79	25.53	25.65	31.63	31.40	29.40	29.83
1450	0.12	0.11	22.53	22.51	25.41	25.41	31.98	31.82	29.59	30.19
1500	0.12	0.12	22.29	22.26	25.03	25.35	32.60	32.24	30.11	30.79
1600	0.14	0.13	21.73	21.71	25.33	25.50	33.78	33.30	31.09	31.69
1700	0.15	0.14	21.44	21.39	23.76	23.60	36.47	35.78	33.03	33.96
1800	0.16	0.16	21.04	21.03	24.21	24.08	39.36	38.00	35.74	35.72
1900	0.17	0.17	20.66	20.64	24.98	24.55	43.62	39.50	38.77	37.58
2000	0.19	0.18	20.28	20.27	25.94	25.51	47.65	39.73	41.54	37.71
2100	0.22	0.20	19.99	19.99	25.29	25.01	47.76	39.60	41.27	37.99
2200	0.22	0.21	19.79	19.82	24.19	24.21	46.18	38.78	39.91	37.48
2300	0.23	0.23	19.57	19.60	23.79	23.75	42.44	39.09	38.46	37.62
2400	0.24	0.24	19.34	19.30	24.28	24.54	38.72	37.51	37.59	37.74
2500	0.27	0.24	19.04	19.07	24.72	25.91	34.70	35.08	37.12	36.77
2600	0.29	0.25	18.87	18.94	22.97	24.20	31.47	32.79	35.02	35.55
2700	0.29	0.26	18.75	18.79	21.53	22.74	29.54	30.03	33.39	33.61
2800	0.30	0.28	18.52	18.58	21.26	22.90	27.00	27.40	31.50	31.86
2900	0.32	0.29	18.36	18.39	19.99	22.07	25.05	25.34	29.82	29.72
3000	0.33	0.31	18.16	18.21	19.29	21.06	23.64	23.76	28.24	28.20
3250	0.36	0.34	17.74	17.85	17.27	18.61	21.51	21.61	26.00	26.30
3500	0.40	0.36	17.43	17.42	15.91	16.93	21.14	21.23	26.63	27.26
3750	0.42	0.38	17.12	17.05	15.11	15.60	22.65	22.85	31.53	32.84
4000	0.43	0.40	16.79	16.80	14.22	14.68	26.13	26.13	41.87	39.34
4250	0.46	0.45	16.57	16.58	14.06	14.31	33.05	32.31	26.99	27.16
4500	0.50	0.51	16.39	16.48	14.03	14.08	36.65	37.11	22.52	22.82
4750	0.54	0.57	16.37	16.47	13.68	13.61	30.59	32.74	20.20	20.77
5000	0.57	0.61	16.30	16.45	13.19	13.38	28.21	29.48	19.16	19.53
5250	0.60	0.65	16.27	16.32	12.91	13.12	26.21	26.78	18.51	18.63
5500	0.63	0.70	16.39	16.45	11.48	11.81	23.48	23.55	17.61	17.48
5750	0.69	0.75	16.38	16.43	10.46	11.06	20.01	20.19	16.31	16.23
6000	0.78	0.83	16.48	16.50	9.51	9.85	17.02	17.08	14.91	14.95
6250	0.87	0.91	16.56	16.51	8.70	8.94	14.73	14.69	13.71	13.80
6500	1.03	1.06	16.65	16.55	8.21	7.96	12.94	12.94	12.66	12.79
7000	1.49	1.42	16.95	16.72	8.12	7.12	10.22	10.38	11.01	11.19

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# Bi-Directional Coupler

# SYBD-26-13HP+

## Typical Performance Data

TEST CONDITIONS: INPUT POWER =0 dBm @Temperature = -55°C

FREQ. (MHz)	INSERTION LOSS		COUPLING		DIRECTIVITY		RETURN LOSS			
	(dB)		(dB)		(dB)		(dB)			
	IN-OUT	FWD-REV	IN-FWD	OUT-REV	IN-REV	OUT-FWD	IN	OUT	FWD	REV
100	0.08	0.09	45.08	45.07	36.73	35.42	48.66	48.27	41.46	41.71
200	0.07	0.09	39.08	39.07	39.05	37.73	40.14	40.42	41.93	42.86
300	0.06	0.08	35.59	35.57	44.00	44.41	39.84	40.12	44.03	45.51
400	0.05	0.09	33.13	33.11	49.36	48.48	43.01	43.80	47.29	50.29
500	0.04	0.09	31.20	31.20	45.19	47.37	47.32	48.15	47.32	45.69
600	0.03	0.09	29.64	29.64	38.44	40.65	55.55	59.98	42.12	40.02
700	0.02	0.09	28.35	28.34	35.16	36.97	44.06	43.75	38.81	36.79
750	0.02	0.08	27.78	27.76	34.13	36.41	41.66	41.38	36.94	35.08
800	0.01	0.08	27.23	27.21	32.90	34.42	39.58	39.60	35.43	33.71
850	0.02	0.09	26.72	26.70	32.28	32.84	37.61	37.43	34.08	32.70
900	0.01	0.09	26.25	26.24	31.31	32.19	35.83	35.74	33.19	32.11
950	0.00	0.08	25.80	25.80	30.37	31.30	34.33	34.27	31.70	30.76
1000	0.00	0.07	25.36	25.35	30.11	30.33	33.34	33.21	30.79	30.35
1050	0.01	0.07	25.01	25.03	28.11	27.87	32.60	32.36	30.03	29.83
1100	0.01	0.07	24.60	24.58	28.48	27.99	31.83	31.56	29.18	29.21
1150	0.02	0.07	24.29	24.27	26.88	27.01	31.27	30.89	28.72	29.13
1200	0.02	0.07	23.92	23.89	27.23	27.21	30.85	30.45	28.57	28.98
1250	0.03	0.06	23.62	23.62	25.75	26.46	30.64	30.48	28.21	28.58
1300	0.03	0.06	23.34	23.34	25.01	25.58	30.61	30.55	28.13	28.55
1350	0.03	0.07	23.00	22.99	25.87	26.57	30.63	30.58	28.29	28.76
1400	0.03	0.06	22.70	22.68	25.48	26.29	30.82	30.77	28.02	28.52
1450	0.04	0.06	22.48	22.46	24.36	25.04	31.27	31.29	28.31	28.82
1500	0.04	0.06	22.18	22.16	25.26	25.64	31.75	31.46	29.01	29.52
1600	0.06	0.06	21.67	21.64	24.97	25.40	32.69	32.12	30.82	31.45
1700	0.07	0.05	21.37	21.34	23.48	23.38	34.11	33.32	32.95	34.23
1800	0.07	0.04	20.90	20.89	24.05	24.05	35.18	33.98	34.34	34.23
1900	0.09	0.03	20.38	20.35	26.65	26.06	38.62	36.13	39.82	37.74
2000	0.10	0.05	20.21	20.21	23.75	24.67	54.55	38.42	45.41	40.91
2100	0.14	0.02	19.94	19.94	22.59	24.47	42.43	38.19	61.61	44.60
2200	0.11	0.03	19.70	19.77	23.38	23.16	58.16	37.76	44.98	37.37
2300	0.12	0.02	19.46	19.63	23.98	22.39	46.73	37.22	38.48	35.65
2400	0.13	0.01	19.10	19.10	25.96	26.05	46.06	37.87	38.56	35.68
2500	0.16	0.01	18.78	18.87	26.69	28.20	37.31	36.15	36.07	34.66
2600	0.16	0.00	18.78	18.84	22.73	23.89	32.96	32.78	35.54	34.32
2700	0.18	0.01	18.74	18.69	20.92	21.05	30.51	31.64	32.70	32.45
2800	0.18	0.00	18.41	18.44	21.11	22.66	27.79	27.90	31.35	31.59
2900	0.19	0.00	18.22	18.21	19.91	22.13	26.00	25.90	28.78	29.28
3000	0.20	0.03	18.00	18.05	19.69	20.53	24.44	24.50	26.81	27.46
3250	0.24	0.02	17.60	17.65	17.63	18.94	21.40	21.55	26.03	26.27
3500	0.26	0.03	17.24	17.26	15.26	17.21	20.12	20.49	28.61	28.65
3750	0.26	0.04	16.87	16.86	15.16	16.24	22.64	23.18	33.51	34.96
4000	0.27	0.04	16.56	16.55	14.08	15.26	25.99	25.94	36.35	48.63
4250	0.29	0.07	16.37	16.37	13.74	14.53	31.88	30.82	27.13	27.89
4500	0.32	0.12	16.19	16.25	14.19	13.89	38.46	35.02	23.77	23.32
4750	0.35	0.13	16.12	16.18	13.59	13.37	31.43	31.43	21.37	21.45
5000	0.38	0.19	15.96	16.10	12.93	13.08	28.43	30.37	17.87	18.24
5250	0.39	0.20	16.00	16.13	13.19	12.49	26.44	26.76	17.06	17.15
5500	0.43	0.23	16.14	16.21	11.13	10.98	23.52	23.55	16.51	16.44
5750	0.47	0.28	16.07	16.07	10.24	11.49	19.71	20.15	15.61	15.75
6000	0.56	0.31	16.13	16.16	9.69	10.32	16.75	16.78	14.66	14.92
6250	0.65	0.33	16.24	16.13	8.92	9.17	14.72	14.49	14.52	14.39
6500	0.80	0.49	16.18	16.00	8.39	7.92	12.65	12.71	12.37	12.41
7000	1.19	0.87	16.96	16.57	8.21	5.99	9.96	10.15	9.67	9.81

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# Bi-Directional Coupler

# SYBD-26-13HP+

## Typical Performance Data

TEST CONDITIONS: INPUT POWER =0 dBm @Temperature = +100°C

FREQ. (MHz)	INSERTION LOSS		COUPLING		DIRECTIVITY		RETURN LOSS			
	(dB)		(dB)		(dB)		(dB)			
	IN-OUT	FWD-REV	IN-FWD	OUT-REV	IN-REV	OUT-FWD	IN	OUT	FWD	REV
100	0.06	0.04	45.01	45.05	41.15	50.34	42.23	42.45	45.59	47.28
200	0.03	0.01	39.07	39.06	48.99	51.23	44.38	43.60	43.77	45.13
300	0.01	0.01	35.58	35.58	44.15	44.13	46.44	44.64	42.94	43.66
400	0.01	0.02	33.12	33.11	38.53	40.50	47.77	45.62	40.43	40.22
500	0.02	0.04	31.23	31.23	35.95	37.40	45.20	44.97	38.48	37.57
600	0.04	0.06	29.67	29.67	33.89	34.72	41.85	41.77	37.31	35.84
700	0.05	0.08	28.40	28.40	31.68	32.86	38.78	38.85	35.58	34.13
750	0.06	0.09	27.82	27.82	31.65	32.54	37.90	37.95	34.81	33.41
800	0.07	0.10	27.28	27.28	30.93	31.98	37.07	37.32	34.11	32.76
850	0.07	0.09	26.79	26.77	30.25	31.01	36.37	36.34	33.56	32.25
900	0.08	0.10	26.31	26.30	29.93	30.98	35.57	35.63	33.10	31.94
950	0.09	0.12	25.88	25.88	29.51	30.40	34.90	34.93	32.46	31.35
1000	0.10	0.13	25.44	25.43	29.25	30.44	34.51	34.39	32.10	31.34
1050	0.10	0.15	25.10	25.10	28.01	28.30	34.24	34.11	32.00	31.30
1100	0.11	0.16	24.67	24.65	28.66	28.08	33.85	33.78	31.56	31.01
1150	0.12	0.16	24.38	24.37	27.46	27.91	33.85	33.66	31.33	31.30
1200	0.13	0.17	24.04	24.00	27.27	27.35	33.79	33.54	31.24	31.31
1250	0.13	0.18	23.74	23.73	26.75	27.09	33.68	33.60	31.27	31.51
1300	0.14	0.18	23.45	23.44	26.68	26.52	33.67	33.52	31.40	31.69
1350	0.14	0.19	23.12	23.11	27.29	27.14	33.67	33.33	31.33	31.80
1400	0.15	0.19	22.83	22.81	27.32	27.22	33.83	33.43	31.37	32.01
1450	0.16	0.20	22.60	22.59	26.46	26.21	34.23	34.03	31.49	32.45
1500	0.17	0.22	22.30	22.28	27.19	27.39	34.72	34.31	31.60	32.53
1600	0.19	0.24	21.86	21.84	25.54	25.56	36.22	35.78	32.45	33.37
1700	0.21	0.25	21.46	21.43	25.95	25.42	38.33	37.76	33.54	34.56
1800	0.21	0.27	21.01	20.99	27.76	27.05	39.43	38.61	34.48	34.62
1900	0.26	0.30	20.69	20.65	24.76	23.76	39.49	40.02	35.86	35.91
2000	0.25	0.30	20.39	20.39	26.33	25.41	41.45	39.60	36.15	35.25
2100	0.28	0.33	20.14	20.18	23.42	23.63	41.88	40.71	36.06	35.87
2200	0.29	0.34	19.91	19.96	22.61	23.70	39.25	37.81	35.84	35.03
2300	0.29	0.36	19.67	19.72	23.15	22.76	36.20	36.14	35.20	35.31
2400	0.31	0.39	19.36	19.29	23.22	25.07	33.30	33.72	34.15	34.92
2500	0.36	0.41	19.10	19.04	22.90	23.63	31.17	32.48	33.94	34.45
2600	0.36	0.42	18.96	18.97	21.85	23.07	29.35	30.30	33.93	34.99
2700	0.36	0.43	18.90	18.97	20.12	21.17	28.48	28.80	33.49	33.80
2800	0.39	0.45	18.65	18.66	19.96	22.32	26.77	26.86	32.43	32.31
2900	0.40	0.46	18.53	18.54	19.04	21.19	25.64	25.63	31.34	31.20
3000	0.42	0.50	18.25	18.28	19.68	22.01	24.26	24.17	30.61	29.96
3250	0.45	0.54	17.89	17.96	17.30	18.68	22.71	22.73	28.22	28.40
3500	0.49	0.57	17.54	17.58	16.69	17.47	22.98	22.99	28.04	29.07
3750	0.53	0.61	17.20	17.24	15.41	16.38	23.26	23.35	32.66	34.53
4000	0.55	0.65	16.98	17.00	14.46	14.75	25.97	26.56	43.29	37.51
4250	0.59	0.71	16.72	16.80	14.15	14.03	31.76	32.22	28.22	28.68
4500	0.63	0.78	16.59	16.70	13.35	13.59	34.34	38.12	23.34	24.36
4750	0.67	0.85	16.51	16.66	12.86	13.38	30.82	34.85	20.22	20.99
5000	0.73	0.93	16.49	16.60	12.84	13.05	27.50	29.52	19.52	20.22
5250	0.76	0.99	16.52	16.69	12.16	12.34	25.09	25.03	18.53	18.88
5500	0.80	1.05	16.61	16.69	11.13	12.01	22.16	21.80	17.35	17.34
5750	0.87	1.13	16.67	16.66	10.69	11.07	18.92	18.84	16.21	15.89
6000	0.94	1.18	16.82	16.74	9.66	9.98	16.98	16.80	15.02	14.93
6250	1.04	1.30	16.88	16.74	9.30	9.04	14.99	14.95	13.75	13.71
6500	1.19	1.45	17.00	16.75	8.05	7.71	13.50	13.30	13.03	13.27
7000	1.70	1.81	17.11	17.02	8.02	6.83	10.40	10.67	11.71	12.12

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