

Directional Coupler

SYD-20-33+

50Ω 30 to 3000 MHz

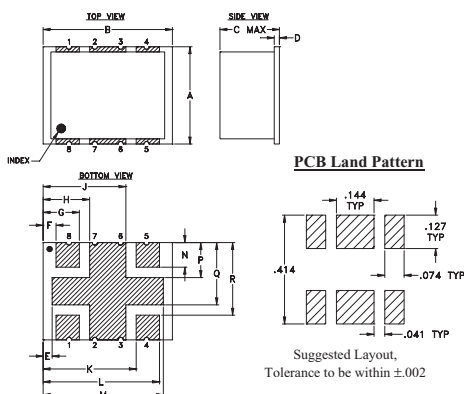
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C

Pin Connections

INPUT	8
OUTPUT	1
COUPLED	5
GROUND	2,3,4,6,7

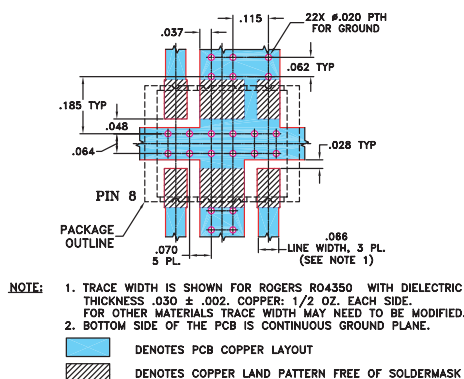
Outline Drawing



Outline Dimensions (inch mm)

A	B	C	D	E	F	G	H	
.38	.50	.25	.020	.035	.050	.140	.180	
9.65	12.70	6.35	0.51	0.89	1.27	3.56	4.57	
J	K	L	M	N	P	Q	R	wt
.320	.360	.450	.465	.095	.135	.240	.280	grams
8.13	9.14	11.43	11.81	2.41	3.43	6.10	7.11	0.80

Demo Board MCL P/N: TB-296 Suggested PCB Layout (PL-160)



Features

- wideband, 30-3000 MHz
- low mainline loss, 1.6 dB typ.
- excellent VSWR, 1.15:1 typ; all ports
- good flatness, ±0.6 dB typ.

Applications

- VHF/UHF receivers/transmitters
- cellular, PCS, PCN, UMTS
- ISM
- GPS
- instrumentation

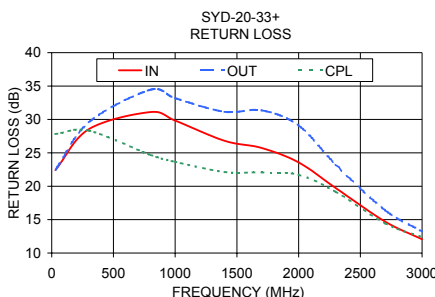
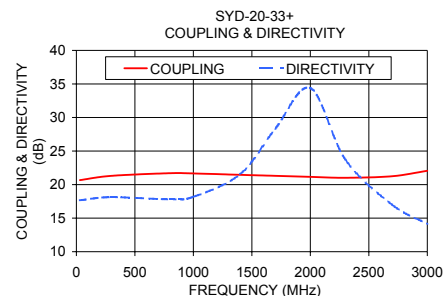
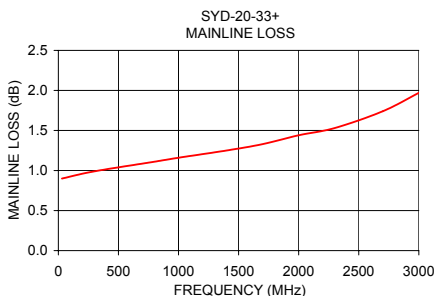
Directional Coupler Electrical Specifications

FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS ¹ (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT (W)
f_L - f_U	Nom.	Flatness	Typ.	Max.	Typ.	Min.	Typ.	Max.
30-3000	20.8±0.8	±1.4	1.6	2.5	15	9	1.20	1
800-1000	21.5±0.5	±0.3	1.1	1.5	17	14	1.10	1
1700-2000	21.1±0.6	±0.5	1.3	1.8	20	15	1.15	1
2300-2700	20.8±0.7	±0.5	1.5	2.1	16	11	1.20	1

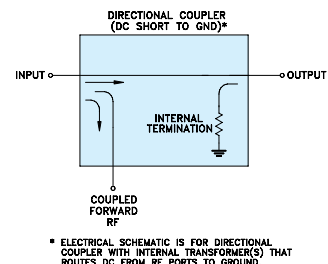
1. Mainline loss includes theoretical power loss at coupled port.

Typical Performance Data

Frequency (MHz)	Mainline Loss (dB)		Coupling (dB)	Directivity (dB)	Return Loss (dB)		
	In-Out	In-Cpl			In	Out	Cpl
30.00	0.90	20.67	17.67	22.43	22.47	28.33	27.83
300.00	0.99	21.31	18.13	28.54	29.57	28.33	28.33
800.00	1.11	21.70	17.81	31.11	34.45	24.69	24.69
1000.00	1.16	21.66	18.18	29.83	33.18	23.65	23.65
1400.00	1.25	21.45	21.56	26.80	31.14	22.13	22.13
1700.00	1.33	21.30	28.32	25.73	31.37	22.07	22.07
2000.00	1.44	21.15	34.38	23.57	29.10	21.71	21.71
2300.00	1.53	21.02	23.71	19.74	23.26	19.17	19.17
2700.00	1.74	21.25	17.00	14.71	16.41	14.45	14.45
3000.00	1.97	22.06	14.14	12.06	13.23	12.37	12.37



Electrical Schematic



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