

Surface Mount Directional Coupler

SYD-20-33+

50Ω 30 to 3000 MHz

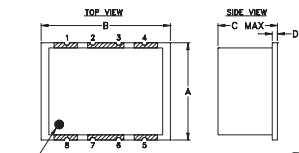
Maximum Ratings

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

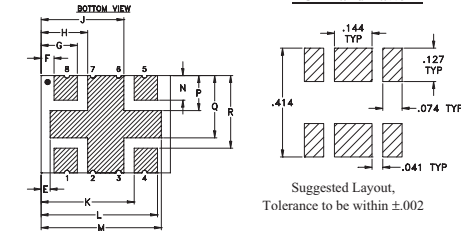
Pin Connections

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

Outline Drawing



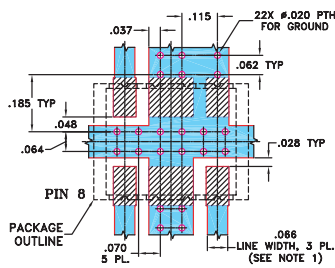
PCB Land Pattern



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)



NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS .030 ± .002. COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED. 2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT
- DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

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



CASE STYLE: AH202
PRICE: \$16.95 ea. QTY. (10-49)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

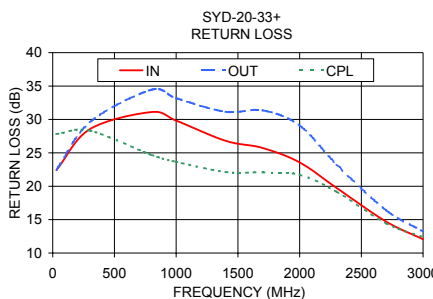
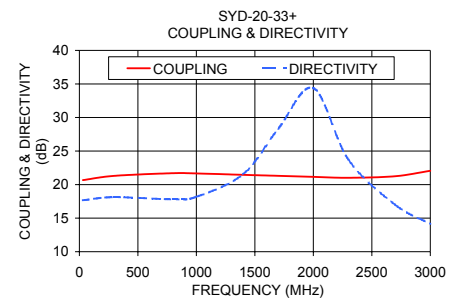
Directional Coupler Electrical Specifications

FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS ¹ (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT (W)
	Nom.	Flatness	Typ.	Max.	Typ.	Min.		
f_c - f_u								
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

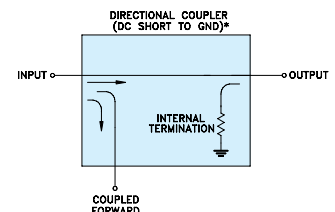
1. Mainline loss includes theoretical power loss at coupled port.

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	27.83	
300.00	0.99	21.31	18.13	28.54	29.57	28.33	
800.00	1.11	21.70	17.81	31.11	34.45	24.69	
1000.00	1.16	21.66	18.18	29.83	33.18	23.65	
1400.00	1.25	21.45	21.56	26.80	31.14	22.13	
1700.00	1.33	21.30	28.32	25.73	31.37	22.07	
2000.00	1.44	21.15	34.38	23.57	29.10	21.71	
2300.00	1.53	21.02	23.71	19.74	23.26	19.17	
2700.00	1.74	21.25	17.00	14.71	16.41	14.45	
3000.00	1.97	22.06	14.14	12.06	13.23	12.37	



Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) THAT ROUTES DC FROM RF PORTS TO GROUND.

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IF/RF MICROWAVE COMPONENTS

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WP/OL/AM
081111