

Surface Mount Directional Coupler

50Ω 30 to 3000 MHz

SYD-20-33+



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

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications



Available Tape and Reel
at no extra cost

Reel Size Devices/Reel
13" 200

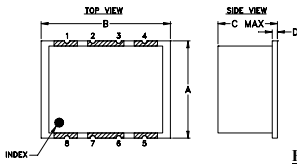
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Permanent damage may occur if any of these limits are exceeded.	

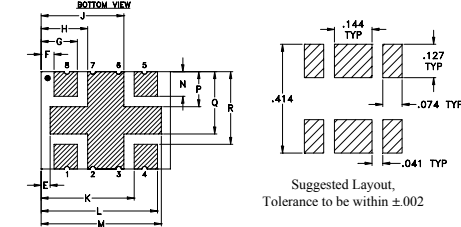
Pin Connections

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

Outline Drawing



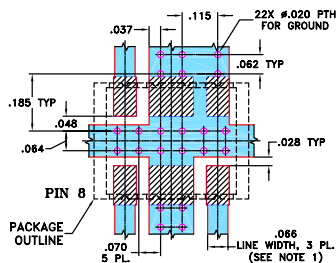
PCB Land Pattern



Outline Dimensions (inch)

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.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

Notes

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- 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

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

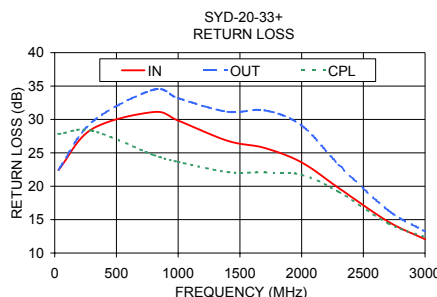
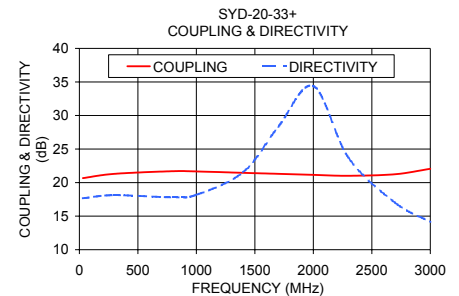
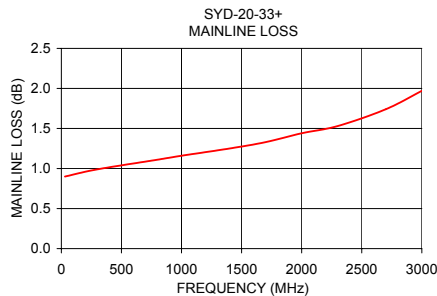
Directional Coupler Electrical Specifications

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

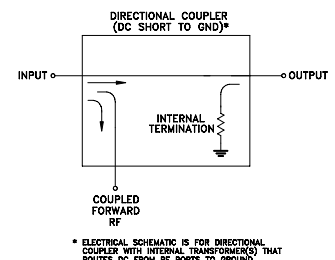
1. Mainline loss includes theoretical power loss at coupled port.

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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