SURFACE MOUNT

Directional Coupler

SYD-20-33+

50Ω 30 to 3000 MHz

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.

Generic photo used for illustration purposes only

CASE STYLE: AH202

+RoHS Compliant
The +Suffix identifies RoHS Compliance.
See our website for methodologies and qualifications

APPLICATIONS

- VHF/UHF receivers/transmitters
- Cellular, PCS, PCN, UMTS
- ISM
- GPS
- Instrumentation

ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Condition (MHz)	Min.	Typ.	Max.	Units
Frequency Range		30		3000	MHz
Mainline Loss[1]	30-3000	—	1.6	2.5	dB
	800-1000	—	1.1	1.5	
	1700-2000	—	1.3	1.8	
	2300-2700	—	1.5	2.1	
Coupling Nominal	30-3000	—	20.8±0.8	—	dB
	800-1000	—	21.5±0.5	—	
	1700-2000	—	21.1±0.6	—	
	2300-2700	—	20.8±0.7	—	
Coupling Flatness(±)	30-3000	—	1.4	—	dB
	800-1000	—	0.3	—	
	1700-2000	—	0.5	—	
	2300-2700	—	0.5	—	
Directivity	30-3000	9	15	—	dB
	800-1000	14	17	—	
	1700-2000	15	20	—	
	2300-2700	11	16	—	
VSWR	30-3000	—	1.20	—	:1
	800-1000	—	1.10	—	
	1700-2000	—	1.15	—	
	2300-2700	—	1.20	—	
Input Power	30-3000	—	—	1	W

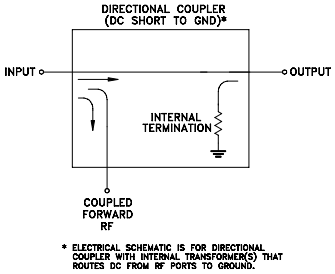
1. Mainline loss includes theoretical power loss at coupled port.

MAXIMUM RATINGS

Parameter	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.

ELECTRICAL SCHEMATIC



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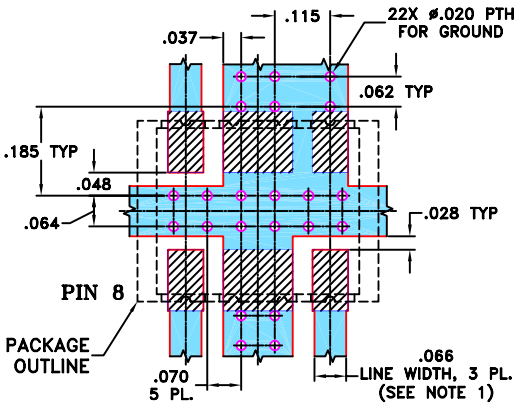
PAD CONNECTIONS

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

PRODUCT MARKING: N/A

SUGGESTED PCB LAYOUT (PL-160)

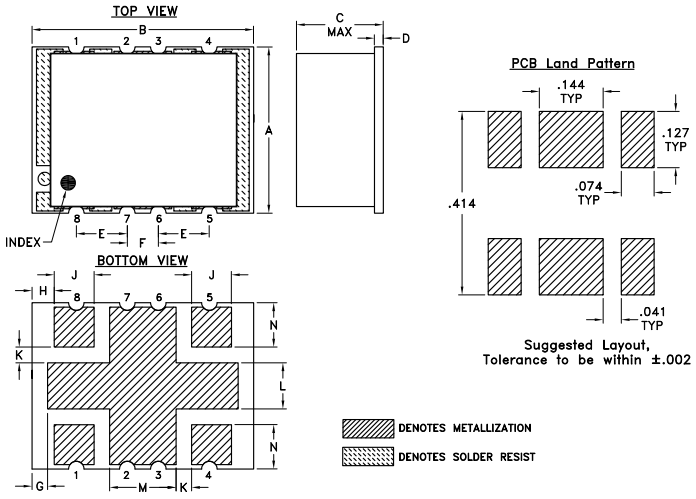


NOTE:
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS .030 ± .002. COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT

DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

OUTLINE DRAWING



OUTLINE DIMENSIONS (Inches / mm)

A	B	C	D	E	F	G	H
.38	.50	.25	.020	.115	.070	.035	.050
9.65	12.70	6.35	0.51	2.92	1.78	0.89	1.27

J	K	L	M	N			wt
.090	.040	.105	.140	.095			grams
2.29	1.02	2.67	3.56	2.41			0.80

TAPE & REEL INFORMATION: F61

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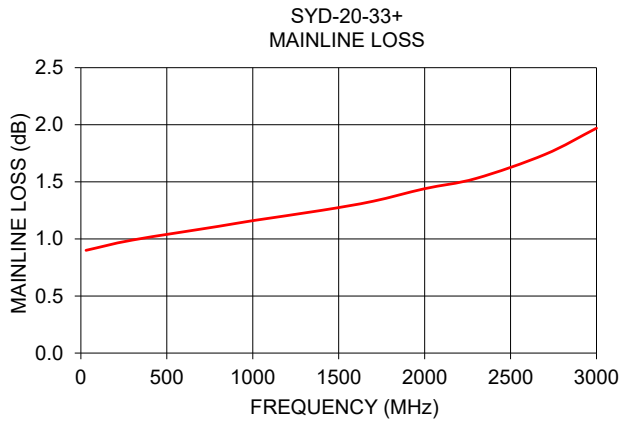
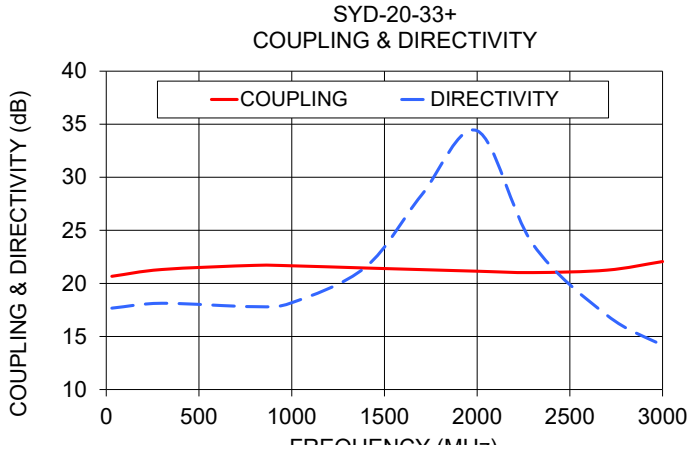
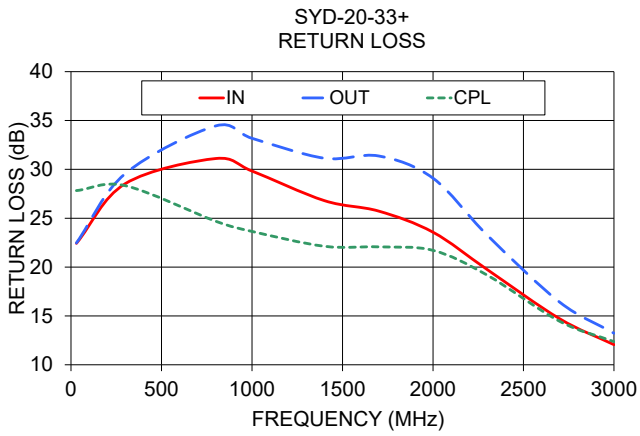
TYPICAL PERFORMANCE DATA

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB) In	Return Loss (dB) Out	Return Loss (dB) 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







NOTES

A. 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.

B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.

C. 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/terms/viewterm.html