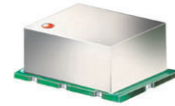


Surface Mount

Bi-Directional Coupler

SYDC-20-62HP+

50Ω 20 dB Coupling 10 to 540 MHz



CASE STYLE: AH202-1
PRICE: \$29.95 ea. QTY (1-9)

+ 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.

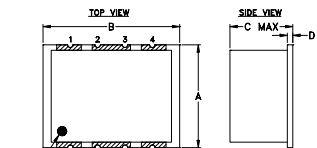
Maximum Ratings

*Operating Temperature, Case -40°C to 85°C
Storage Temperature -55°C to 100°C
* Case temperature is defined as temperature on ground leads. Permanent damage may occur if any of these limits are exceeded.

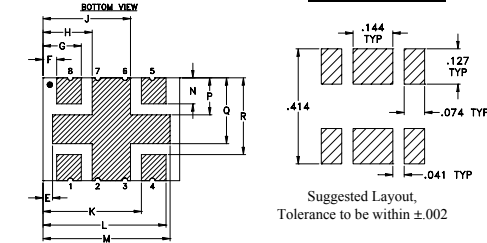
Pin Connections

INPUT	8
OUTPUT	1
COUPLED (forward)	5
COUPLED (reverse)	4
GROUND	2,3,6,7

Outline Drawing



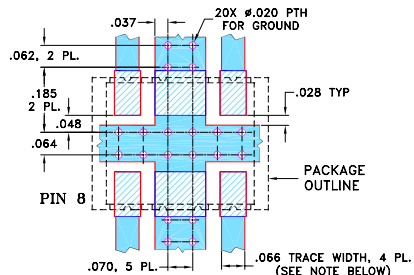
PCB Land Pattern



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	
.38	.50	.25	.020	.035	.140	.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-349 Suggested PCB Layout (PL-246)



NOTES:

- TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
 - BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Features

- high power, 25W max.
- wideband multioctave
- low mainline loss, 0.2 dB typ.

Applications

- signal monitoring
- military mobile

Bi-Directional Coupler Electrical Specifications

FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS ¹ (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER ² INPUT (W)
	Nom.	Flatness	Typ.	Max.	Typ.	Min.		
$f_L - f_U$								
10 - 540	19.8±0.5	±0.8	0.2	0.6	28	16	1.10	25

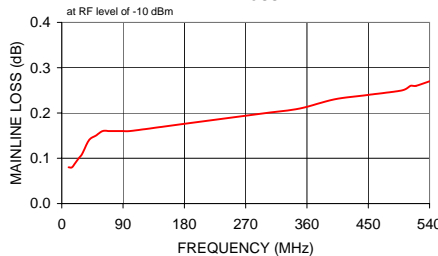
1. Mainline loss includes theoretical power loss at coupled port.

2. The user must provide adequate means of heat removal to limit the temperature of ground connections 2,3,6,7 to 85°C, in order to ensure proper performance. At 25°C ambient temperature this requires thermal resistance of the user's PC board heat sink to be 20°C/W or less when the unit is driven at maximum specified RF input power, 25W. At higher ambient temperature, with the same heat sink, input power in watts must not exceed $25W \times (85^\circ C - T_{AMBIENT}) \div 60^\circ C$.

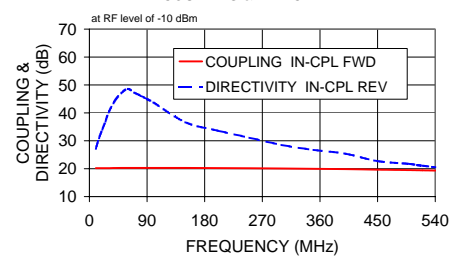
Typical Performance Data

Frequency (MHz)	Mainline Loss (dB)	Coupling (dB)		Directivity (dB)		Return Loss (dB)			
		In-Out	In-Cpl Fwd	Out-Cpl Rev	Out-Cpl Fwd	In-Cpl Rev	In	Out	Cpl Fwd
10.00	0.08	20.20	20.14	27.39	27.16	24.12	24.24	23.90	23.97
50.00	0.15	20.26	20.16	47.58	47.12	35.06	35.95	33.45	33.81
100.00	0.16	20.28	20.19	34.70	43.72	35.11	35.24	32.06	31.68
150.00	0.17	20.26	20.20	30.36	36.64	34.22	34.18	30.65	29.81
200.00	0.18	20.21	20.20	27.57	33.63	33.40	32.58	29.07	28.15
250.00	0.19	20.15	20.18	25.43	31.10	32.59	31.71	27.53	26.81
350.00	0.21	19.95	20.10	22.53	26.74	30.67	29.41	25.30	24.70
400.00	0.23	19.83	20.04	21.54	25.36	30.25	28.81	24.24	23.73
500.00	0.25	19.49	19.87	19.74	21.71	28.06	26.60	22.44	22.13
540.00	0.27	19.34	19.75	18.90	20.49	27.68	26.47	21.81	21.46

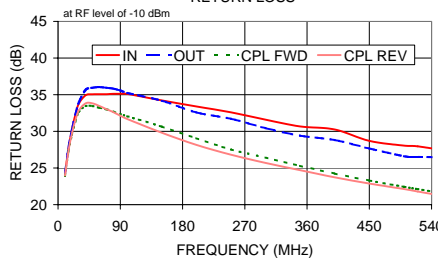
SYDC-20-62HP+
MAINLINE LOSS



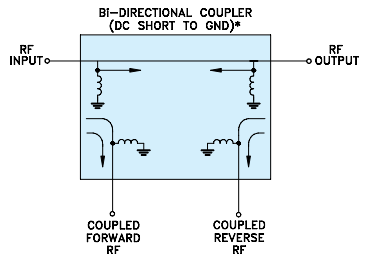
SYDC-20-62HP+
COUPLING & DIRECTIVITY



SYDC-20-62HP+
RETURN LOSS



Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR BI-DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMERS THAT ROUTES DC FROM RF PORTS TO GROUND.

For detailed performance specs & shipping online see web site

Mini-Circuits
ISO 9001 ISO 14001 AS 9100 CERTIFIED
The Design Engineers Search Engine Provides ACTUAL Data Instantly at minicircuits.com
IF/RF MICROWAVE COMPONENTS

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661

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