

Bi-Directional Coupler

SYDC-20-62HP+

50Ω 20 dB Coupling 10 to 540 MHz

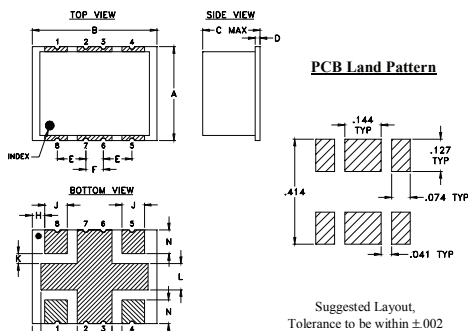
Maximum Ratings

*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

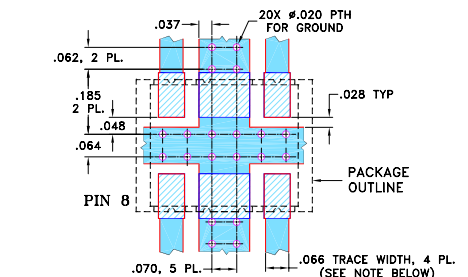
Outline Drawing



Outline Dimensions (inch mm)

A	B	C	D	E	F	G
.38	.50	.25	.020	.115	.070	.035
9.65	12.70	6.35	0.51	2.92	1.78	0.89
H	J	K	L	M	N	wt
.050	.090	.040	.105	.140	.095	grams
1.27	2.29	1.02	2.67	3.56	2.41	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

Notes

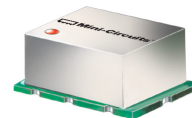
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Features

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

Applications

- signal monitoring
- military mobile



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

+RoHS Compliant

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

Bi-Directional Coupler Electrical Specifications

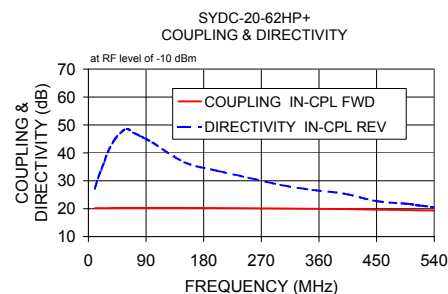
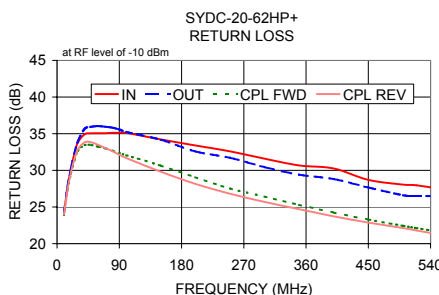
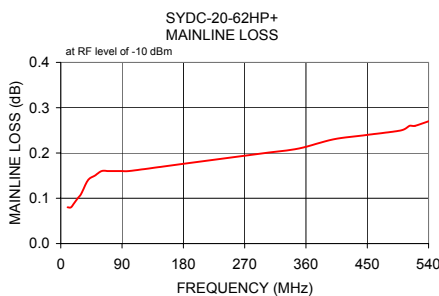
FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS ¹ (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER ² INPUT (W)
f_L - f_U	Nom.	Flatness	Typ.	Max.	Typ.	Min.	Typ.	Max.
10 - 540	19.8±0.5	±0.8	0.2	0.6	28	16	1.10	25

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

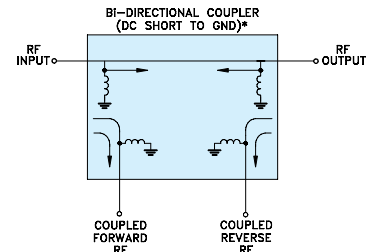
2. The user must provide adequate means of heat removal to limit the temperature of ground connections 2,3,6,7 to 85°C, in order to ensure proper performance. At 25°C ambient temperature this requires thermal resistance of the user's PC board heat sink to be 20°C/W or less when the unit is driven at 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	Cpl Rev
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	43.72	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



Electrical Schematic



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