

Bi-Directional Coupler

50Ω 30 dB Coupling 20 to 100 MHz

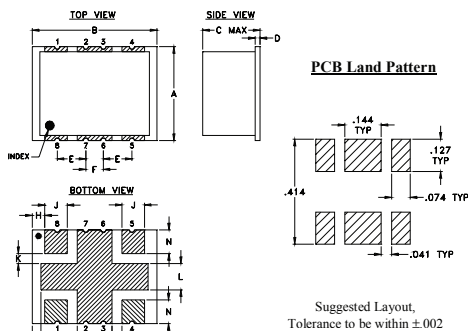
Maximum Ratings

*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

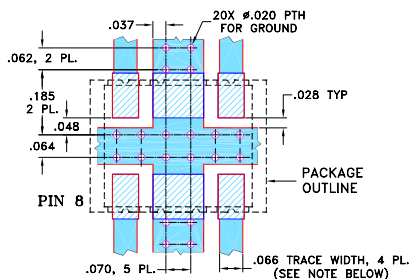
Outline Drawing



Outline Dimensions (inch mm)

A	B	C	D	E	F	G	H	J	K	L	M	N	wt
.38	.50	.25	.020	.115	.070	.035	.050	.090	.040	.105	.140	.095	grams
9.65	12.70	6.35	0.51	2.92	1.78	0.89	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 RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
- THE 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

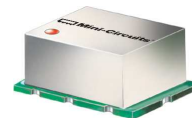
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Features

- high power, 55W max.
- low mainline loss, 0.06 dB typ.
- good VSWR, 1.03 typ.

Applications

- military mobile
- ISM



CASE STYLE: AH202-1
 PRICE: \$39.95 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.
20-100	29±1.0	±0.6	0.06	0.15	30	20	1.03	55

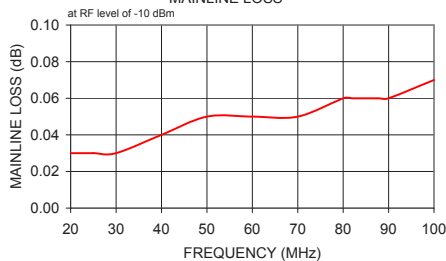
1. Mainline loss includes theoretical power loss at coupled port.

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 35°C/W or less when the unit is driven at maximum specified RF input power, 55W. At higher ambient temperature, with the same heat sink, input power in watts must not exceed 55W x (85°C - T_{AMBIENT}) ÷ 60°C.

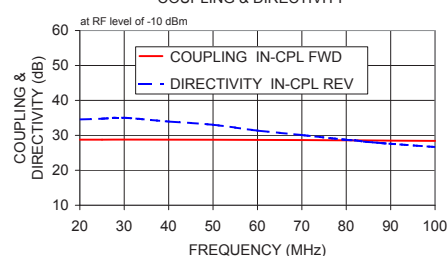
Typical Performance Data

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
20.00	0.03	28.77	28.68	34.36	34.57	43.29	43.43	42.84	42.98
30.00	0.03	28.78	28.63	34.45	35.02	42.72	42.67	42.24	42.38
40.00	0.04	28.77	28.59	33.21	33.96	41.56	41.51	41.32	41.40
50.00	0.05	28.74	28.54	31.95	33.03	40.43	40.34	40.52	40.52
60.00	0.05	28.70	28.50	30.23	31.37	39.42	39.36	39.72	39.67
70.00	0.05	28.64	28.43	29.23	30.09	38.43	38.41	38.95	38.91
80.00	0.06	28.58	28.33	28.40	28.71	37.54	37.56	38.12	38.12
84.00	0.06	28.55	28.29	27.70	28.22	37.17	37.24	37.80	37.82
86.00	0.06	28.54	28.27	27.56	28.01	37.01	37.07	37.61	37.62
88.00	0.06	28.52	28.26	27.50	27.77	36.83	36.92	37.45	37.47
90.00	0.06	28.50	28.23	27.11	27.58	36.66	36.78	37.28	37.30
100.00	0.07	28.42	28.11	26.17	26.65	35.84	36.02	36.37	36.45

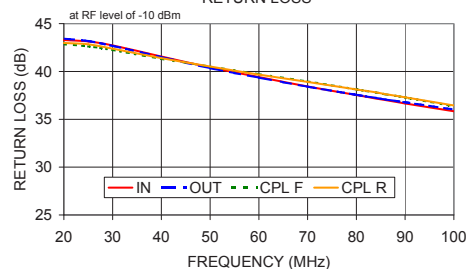
SYDC-30-12HP+
MAINLINE LOSS



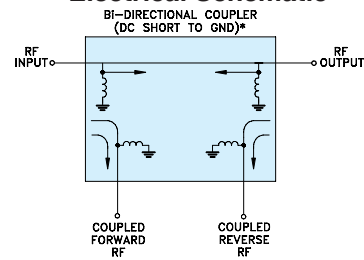
SYDC-30-12HP+
COUPLING & DIRECTIVITY



SYDC-30-12HP+
RETURN LOSS



Electrical Schematic



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