High Power
Bi-Directional Coupler

SYBD-18-142HP+

50Ω 18dB Coupling DC Pass 960 to 1400 MHz

CASE STYLE: JB1233
PRICE: $29.95 ea. QTY (1-9)

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

Maximum Ratings

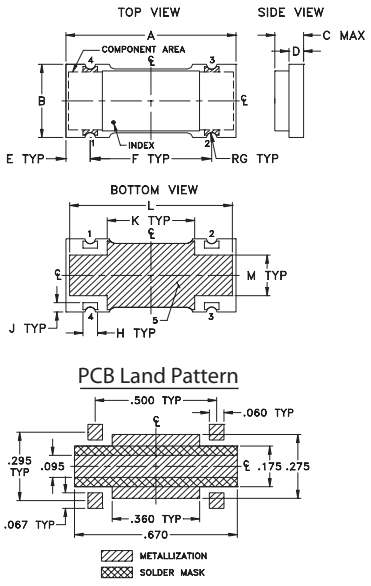
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
DC Current	2A

Permanent damage may occur if any of these limits are exceeded.

Pin Connections

INPUT	1
OUTPUT	2
COUPLED (forward)	4
COUPLED (reverse)	3
GROUND	5

Outline Drawing



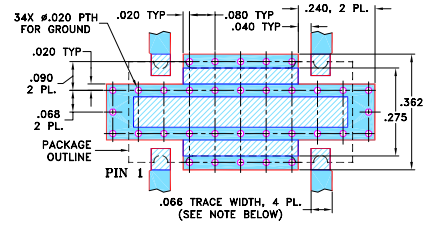
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.70	.32	.13	.060	.100	.500	.022
17.78	8.13	3.30	1.52	2.54	12.70	0.56

H	J	K	L	M	wt
.060	.040	.360	.670	.175	grams
1.52	1.02	9.14	17.02	4.45	0.68

Demo Board MCL P/N: TB-398
Suggested PCB Layout (PL-260)



NOTES: 1. 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.
2. 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 handling, 100 watts at room temp.
- low mainline loss, 0.15 dB typ.
- excellent VSWR, 1.10:1 typ.
- excellent directivity 26 dB typ.
- wideband frequency, 960 to 1400 MHz

Applications

- GPS
- defense communications

Bi-Directional Coupler Electrical Specifications

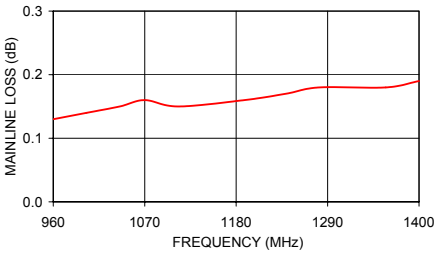
FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS[1] (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT (W)
f_L-f_U	Nom.	Flatness	Typ.	Max.	Typ.	Min.	Typ.	Max.
960-1400			**0.15**	**0.40**	**26**	**18**	**1.10**	
960-1240	19.5±0.8	±1.3	0.10	0.35	26	18	1.10	50
1240-1400	18.0±0.8	±0.7	0.15	0.40	25	18	1.10	50

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

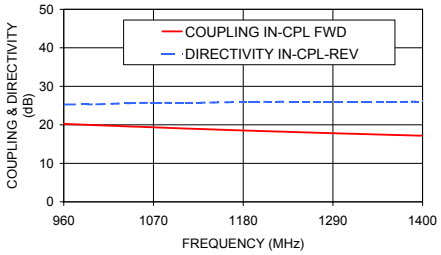
Typical Performance Data

Frequency (MHz)	Mainline Loss (dB)	Coupling (dB)		Directivity (dB)		Return Loss (dB)			
	In-Out	In-Cpl Fwd	Out-Cpl Rev	Out-Cpl Fwd	In-Cpl Rev	In	Out	Cpl Fwd	Cpl Rev
960.00	0.13	20.24	20.20	24.19	25.28	27.52	25.70	28.30	28.89
1000.00	0.14	19.91	19.86	24.02	25.34	27.10	25.29	28.16	28.91
1040.00	0.15	19.59	19.54	24.16	25.61	26.96	25.17	28.24	28.87
1070.00	0.16	19.35	19.31	24.28	25.76	27.06	25.22	28.29	28.91
1110.00	0.15	19.04	19.00	24.28	25.70	26.93	25.07	28.30	28.94
1190.00	0.16	18.47	18.42	24.49	25.96	27.08	25.16	28.92	29.59
1240.00	0.17	18.14	18.09	24.46	26.01	27.10	25.22	29.35	30.08
1280.00	0.18	17.89	17.84	24.76	26.03	27.61	25.61	30.08	30.82
1360.00	0.18	17.41	17.35	24.81	25.96	28.43	26.12	31.57	32.33
1400.00	0.19	17.18	17.13	24.96	26.06	29.33	26.82	32.71	33.70

SYBD-18-142HP+
MAINLINE LOSS



SYBD-18-142HP+
COUPLING & DIRECTIVITY



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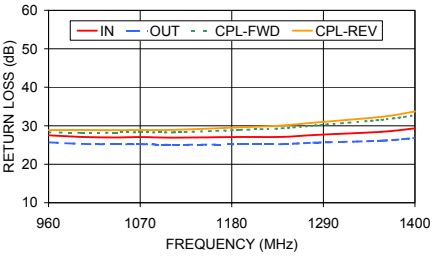
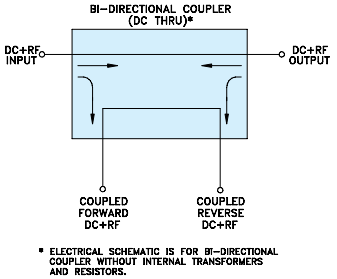
RETURN LOSS



Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR BI-DIRECTIONAL COUPLER WITHOUT INTERNAL TRANSFORMERS AND RESISTORS.

For detailed performance specs & shopping online see web site

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. **2.** Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. **3.** The parts covered by this specification sheet 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.

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