High Power

Bi-Directional Coupler

SYBD-16-53HP+

50Ω 16dB Coupling DC Pass 2700 to 5000 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

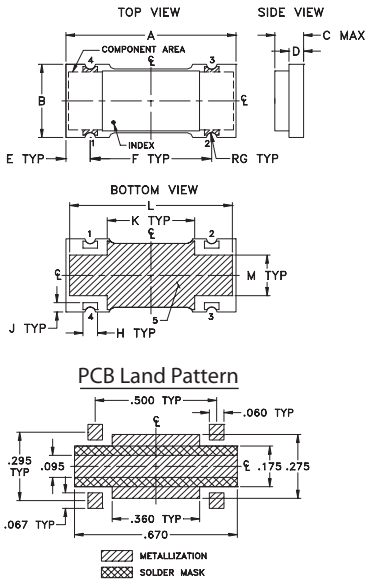
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
DC Current	2A

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



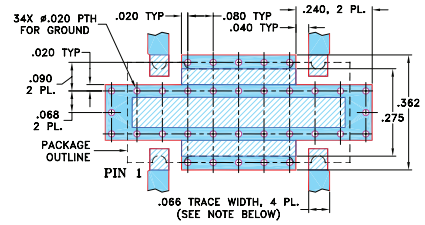
Suggested Layout,
Tolerance to be within ±.002

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, 25 watts typ.
- low mainline loss, 0.2 dB typ.
- excellent VSWR, 1.2:1 typ.
- good directivity 20 dB typ.
- wideband frequency, 2700 to 5000 MHz

Applications

- instrumentation
- ISM
- defense communications
- federal communications
- fixed satellite

Bi-Directional Coupler Electrical Specifications

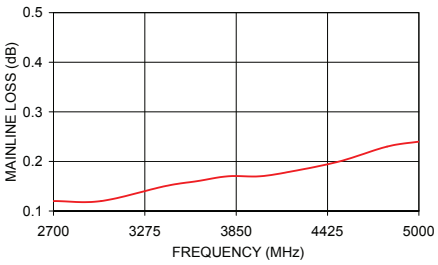
FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS[1] (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT (W)
f_L-f_U	Nom.	Flatness	Typ.	Max.	Typ.	Min.	Typ.	Max.
2700-5000			**0.20**	**0.70**	**18**	**10**	**1.20**	
2700-3000	18.1±0.8	±0.5	0.12	0.40	20	13	1.15	25
3000-3600	17.4±0.8	±0.7	0.15	0.45	18	13	1.15	25
3600-4500	16.3±0.7	±0.7	0.20	0.60	16	11	1.25	20
4500-5000	16.0±0.7	±0.4	0.24	0.70	15	10	1.30	20

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

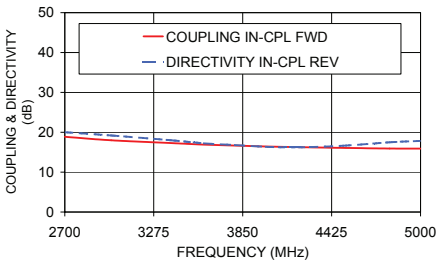
Typical Performance Data

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
2700.00	0.12	18.87	18.56	20.62	20.02	24.50	25.16	27.41	27.68
3000.00	0.12	17.99	17.98	20.06	19.20	24.97	25.28	24.97	25.23
3400.00	0.15	17.27	17.29	18.87	17.96	27.86	26.90	23.35	22.99
3600.00	0.16	16.91	17.01	18.20	17.23	31.91	30.03	23.99	23.80
3800.00	0.17	16.66	16.70	17.69	16.80	41.81	36.07	25.52	25.46
4000.00	0.17	16.44	16.44	16.92	16.36	37.46	38.04	28.89	28.82
4200.00	0.18	16.27	16.24	16.62	16.21	31.72	31.57	34.93	36.47
4500.00	0.20	16.08	16.05	16.76	16.62	28.61	27.86	34.67	36.13
4800.00	0.23	15.93	15.91	17.53	17.49	27.69	26.78	28.61	28.44
5000.00	0.24	15.90	15.87	17.58	17.84	27.32	26.23	26.99	26.29

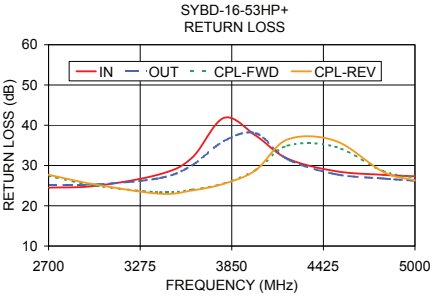
SYBD-16-53HP+
MAINLINE LOSS



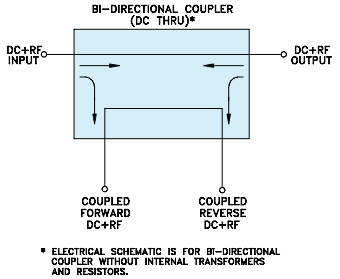
SYBD-16-53HP+
COUPLING & DIRECTIVITY



SYBD-16-53HP+
RETURN LOSS



Electrical Schematic



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.
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