

Bi-Directional Coupler

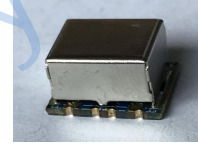
Features

- high power, 30W max.
- wideband multi-octave
- excellent VSWR, 1.10:1 typ.

Applications

- VHF/UHF
- signal monitoring
- communications
- military mobile

HT-SYDC-20-22HP+



50Ω 20 dB Coupling 3 to 200 MHz

Electrical Specifications at 25°C					
Parameter	Condition (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		3		200	MHz
Mainline Loss (above theoretical loss, 0.04 dB)	3	-	0.1	0.2	dB
	30		0.1	0.2	
	100		0.15	0.3	
	200		0.30	0.5	
Nominal Coupling	3-200	-	20.3	-	dB
Coupling Flatness (±)	3-30	-	0.2	0.4	dB
	30-100		0.3	0.5	
	100-200		0.3	0.5	
Directivity	3	16	27	-	dB
	30	20	30		
	100	19	24		
	200	11	15		
Unbalance Return Loss	3	20	26	-	dB
	30	23	31		
	100	18	22		
	200	13	17		
Return Loss (Input)	3	20	27	-	dB
	30	23	31		
	100	15	22		
	200	12	16		
Return Loss (Coupling)	3	20	27	-	dB
	30	23	30		
	100	18	22		
	200	12	16		
Input Power	3-30	-	-	25	W
	30-100			30	
	100-200			25	

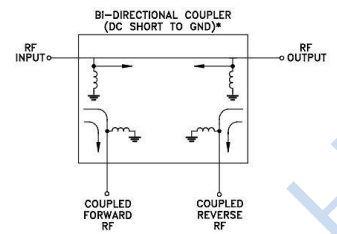
Maximum Ratings

*Operating Temperature, Case -40°C to 65°C

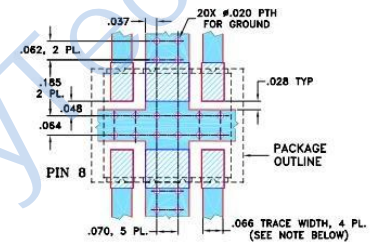
Storage Temperature -55°C to 100°C

*Case temperature is defined as temperature on ground leads.
Permanent damage may occur if any of these limits are exceeded.

Electrical Schematic



Demo Board P/N: TB-349 Suggested PCB Layout (PL-246)

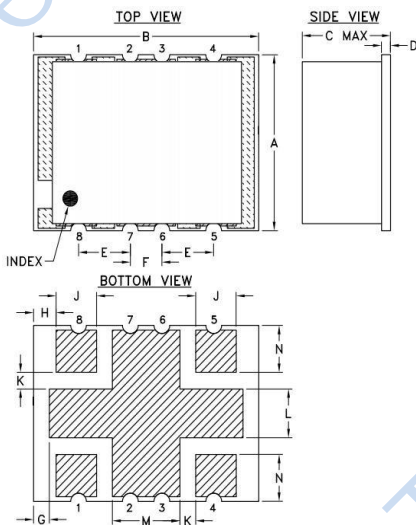


NOTES:

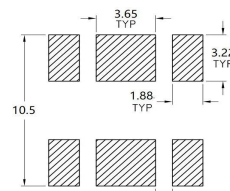
1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .030" ± .002". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Outline Drawing



PCB Land Pattern



Suggested L layout, Tolerance to be within ±0.05mm

Outline Dimensions: Unit (mm)			
A	9.65	H	1.27
B	12.70	N	2.41
C	6.93	M	3.56
D	1.00	J	2.29
E	2.92	K	1.02
F	1.78	L	2.67
G	0.89	WT	0.8g

Pin Connections

Input	8
Output	1
Forward	5
Reverse	4
Ground	2,3,6,7

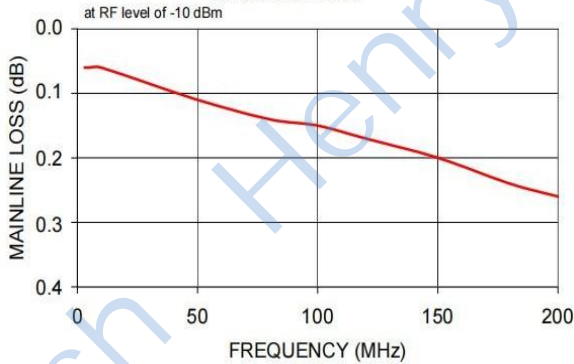
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Typical Performance Data

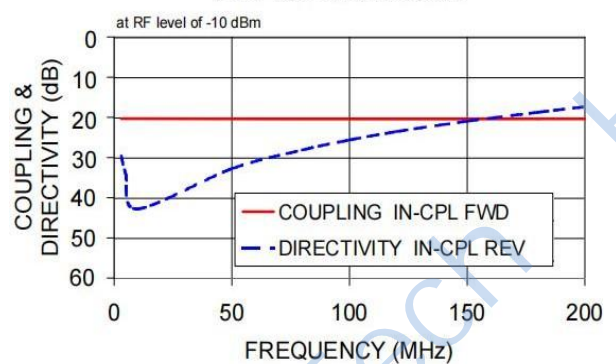
(TEST CONDITIONS: INPUT POWER = 0dBm @Temperature = +25°C)

Freq.(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
3	0.06	20.21	20.15	29.46	29.32	26.44	26.52	26.48	26.54
5	0.06	20.18	20.16	34.16	33.65	33.65	30.12	29.98	30.02
10	0.06	20.18	20.16	42.60	38.34	38.34	33.36	32.87	32.68
50	0.11	20.22	20.18	32.63	34.35	34.35	28.64	27.32	27.00
80	0.14	20.25	20.26	27.99	28.98	28.98	25.15	23.79	23.50
100	0.15	20.25	20.31	25.49	26.11	26.11	23.42	21.97	21.72
120	0.17	20.26	20.36	23.39	23.61	23.61	21.99	20.51	20.29
150	0.20	20.25	20.44	20.80	20.50	20.50	20.31	18.81	18.57
180	0.24	20.24	20.53	18.58	17.78	17.78	18.88	17.32	17.10
200	0.26	20.24	20.60	17.21	16.08	16.08	18.03	16.42	16.23

MAINLINE LOSS



COUPLING & DIRECTIVITY



RETURN LOSS

