

Bi-Directional Coupler

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RF-2C-SYDC-10-62HP

50Ω 10 dB Coupling 10 to 600 MHz



The Big Deal

- High power handling, 20 W
- Multi-octave bandwidth
- Very low mainline loss, 0.5 dB
- Excellent VSWR, 1.10:1

Applications

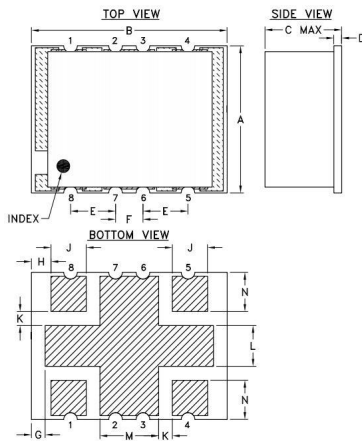
- VHF/UHF
- signal monitoring
- communications
- military mobile

Electrical Specifications at 25°C

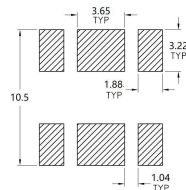
Parameter	Condition (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		10	—	600	MHz
Mainline Loss (above theoretical 0.5 dB)	10	—	0.2	0.8	dB
	50	—	0.2	0.6	
	340	—	0.3	0.7	
	600	—	0.5	0.9	
Coupling	10 - 600	—	9.6	—	dB
	10	9.2	9.7	10.2	
	50	9.3	9.8	10.5	
	340	9.2	9.7	10.2	
	600	8.6	9.4	10.4	
Coupling Flatness(±)	10 - 340	—	0.2	0.4	dB
	340 - 600	—	0.3	0.5	
Directivity	10	15	21	—	dB
	50	18	22.8	—	
	340	16	24.5	—	
	600	14	25.6	—	
Return Loss (Input)	10	12	15	—	dB
	50	20	23	—	
	340	19	25	—	
	600	13	17	—	
Return Loss (Output)	10	12	15	—	dB
	50	20	26	—	
	340	19	28	—	
	600	15	19	—	
Return Loss (Coupling)	10	12	15	—	dB
	50	20	23	—	
	340	19	27	—	
	600	15	30	—	
Input Power**	10 - 600	—	—	20	W

**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, 20W. At higher ambient temperature, with the same heat sink, input power in watts must not exceed 20W x (85°C - T_{AMBIENT}) / 60°C.

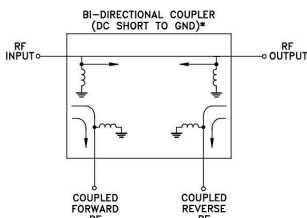
Outline Drawing



PCB Land Pattern



Suggested Layout, Tolerance to be within ± 0.05 mm



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

Maximum Ratings

Operating Temperature	-20 °C to 85 °C
Storage Temperature	-55 °C to 100 °C
Power Input (as a splitter)	20 W max.

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

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	0.64	9.66	9.81	21.07	21.37	17.37	16.72	17.18	16.46
30.00	0.73	9.75	9.89	23.34	23.55	22.96	26.98	22.68	25.93
100.00	0.77	9.81	9.91	23.17	23.76	24.86	30.56	23.95	28.23
220.00	0.78	9.76	9.81	23.33	24.25	27.52	30.01	25.41	28.47
260.00	0.79	9.74	9.77	23.47	24.44	27.47	28.89	25.83	28.73
300.00	0.81	9.70	9.72	23.60	24.43	27.05	28.11	26.16	29.10
420.00	0.88	9.58	9.55	23.76	25.83	22.81	23.61	27.89	31.16
500.00	0.95	9.47	9.43	23.62	26.73	20.12	21.09	29.87	33.58
550.00	1.01	9.39	9.34	23.15	27.81	18.62	19.71	31.45	36.30
600.00	1.07	9.31	9.23	22.30	28.25	16.96	18.25	32.64	38.36

