

Directional Coupler

50Ω

5 to 2000 MHz

Operating Temperature	-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.

INPUT	3
OUTPUT	4
COUPLED	1
GROUND	2
50Ω TERM EXTERNAL	6
NOT USED	5

Lead #1 identifier shall be located in the cross-hatched area shown. Identifier may be either a molded or marked feature.

D TYP

COMPONENT AREA

1 2 3

4 5 6

B

A

G TYP

C MAX

PICK & PLACE SURFACE AREA (.03X.075)MIN.

.008 .008

3 2 1

4 5 6

E +.005
-.005 TYP

PLASTIC SHAPE ADJACENT TO LEADS MAY VARY

F TYP

The diagram illustrates the suggested layout of three vertical bars. The top row shows three bars with a total height dimensioned as 'J'. The distance between the centerlines of the top two bars is dimensioned as 'D TYP', and the distance between the centerlines of the top two and bottom two bars is dimensioned as 'K TYP'. The bottom row shows three bars with a total height dimensioned as 'H TYP'. Below the diagram, the text reads: 'Suggested Layout, Tolerance to be within ± 0.002 '.

A	B	C	D	E	F
.160	.150	.160	.050	.040	.025
4.06	3.81	4.06	1.27	1.02	0.64
G	H	J	K	wt	
.028	.065	.190	.030	grams	
0.71	1.65	4.83	0.76	0.15	

RESISTOR R1: 49.9 $\pm$ 1% Ohm, 0805 SIZE

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

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- wideband, 5 to 2000 MHz
- low mainline loss, 1.2 dB typ. (5-1000 MHz)
- aqueous washable
- leads for excellent solderability
- protected by US Patent 6,140,887

- GPS
- cellular
- satellite distribution
- cable tv

FREQ. RANGE (MHz)	COUPLING (dB)		MAINLINE LOSS ¹ (dB)						DIRECTIVITY (dB)						VSWR (:1)	POWER INPUT, W	
			L		M		U		L		M		U				
	f _L -f _U	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.		Max.	Min.
5-1000	8.9±0.5	±0.6	1.2	2.1	1.2	1.8	1.5	2.1	21	17	17	10	13	—	1.30	0.5	1.0
1000-2000	8.9±0.5	±0.6	—	—	2.5	—	—	—	—	—	10	—	—	—	1.60	—	1.0

L = low range [f_L to $10 f_L$] M = mid range [$10 f_L$ to $f_U/2$] U= upper range [$f_U/2$ to f_U]
1. Mainline loss includes theoretical power loss at coupled port.

Frequency (MHz)	Mainline Loss (dB)	Coupling (dB)	Directivity (dB)	Return Loss		
	In-Out	In-Cpl		In	Out	Cpl
5.00	1.11	8.96	21.65	19.14	27.81	18.92
200.00	1.14	8.97	20.18	20.84	30.26	20.66
600.00	1.26	8.67	15.41	21.16	22.87	20.18
800.00	1.38	8.61	13.30	20.11	22.87	18.90
1000.00	1.54	8.48	11.72	18.37	22.07	17.30
1200.00	1.74	8.57	10.31	16.42	21.82	15.67
1400.00	2.04	8.57	9.19	14.49	22.16	14.29
1600.00	2.32	8.61	8.42	12.72	21.46	12.97
1800.00	2.72	8.75	7.63	11.17	23.19	11.93
2000.00	3.07	8.76	7.28	9.96	22.33	10.99

at RF level of -10 dBm

FREQUENCY (MHz)	MAINLINE LOSS (dB)
0	1.1
500	1.2
1000	1.5
1500	2.2
2000	3.0

Frequency (MHz)	Coupling (dB)	Directivity (dB)
0	9	22
500	9	16
1000	9	12
1500	9	9
2000	9	8

DATA ANALYSIS TECHNIQUES

s specification document.
 eria and measurement instructions.
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