

# Surface Mount Directional Coupler

## D171+ D171

50Ω 2300 to 2600 MHz



### Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-65°C to 150°C

### Pin Connections

INPUT	4
OUTPUT	6
COUPLED	3
GROUND	1,2,5

### Features

- low mainline loss, 0.3 dB typ.
- excellent VSWR, 1.2:1 typ.
- excellent repeatability
- miniature low profile package
- aqueous washable

### Applications

- WLAN
- WiMAX
- Aeronautical

CASE STYLE: CA531-1  
PRICE: \$ 0.99 ea. QTY (25)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

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

### Directional Coupler Electrical Specifications

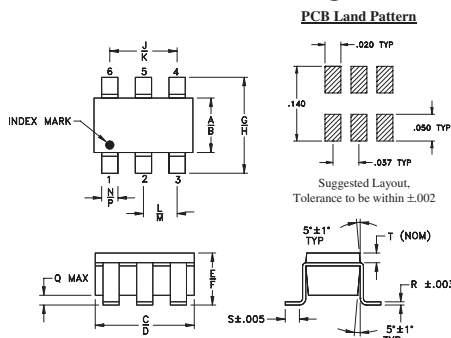
FREQ. RANGE (MHz)	COUPLING (dB)	MAINLINE LOSS <sup>1</sup> (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT <sup>2</sup>
		Typ.	Max.	Typ.	Min.		
2300-2600	18.2±1.3	0.5	0.8	14	9	1.3	1.0

1. Mainline loss includes theoretical power loss at coupled port.
2. 4W CW when operating with a 2.0:1 maximum VSWR on all ports.

### Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
2300.00	0.30	18.72	17.37	37.17	37.46	22.94
2400.00	0.32	18.40	17.11	35.65	36.45	22.12
2440.00	0.33	18.28	17.05	36.10	36.80	21.93
2460.00	0.33	18.23	17.08	35.73	37.51	21.74
2480.00	0.33	18.16	17.05	34.79	37.40	21.55
2500.00	0.33	18.10	16.93	34.49	36.89	21.39
2540.00	0.35	17.99	16.76	35.20	36.35	21.20
2560.00	0.35	17.94	16.81	35.68	36.80	21.06
2580.00	0.35	17.88	16.80	35.01	37.11	20.87
2600.00	0.35	17.82	16.70	34.48	36.62	20.68

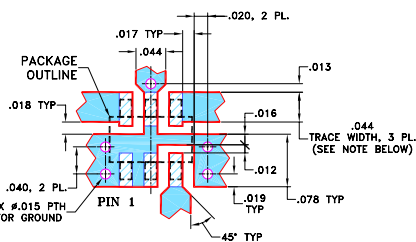
### Outline Drawing



### Outline Dimensions (inch/mm)

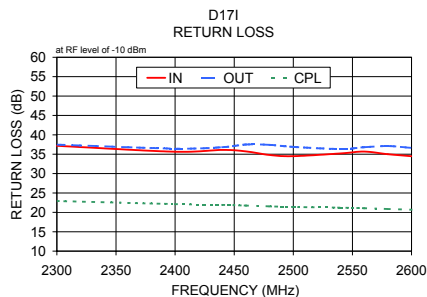
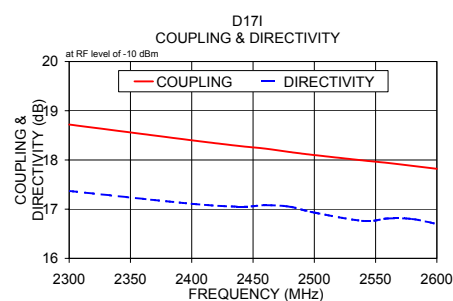
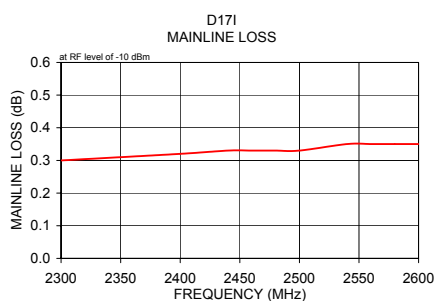
A	B	C	D	E	F	G	H	J
.052	.067	.106	.122	.035	.064	.087	.118	.067
1.32	1.70	2.69	3.10	0.89	1.63	2.21	3.00	1.70
K	L	M	N	P	Q	R	S	wt
.083	.033	.042	.012	.020	.012	.006	.018	grams
2.11	0.84	1.07	0.30	0.51	0.30	0.15	0.46	0.020

### Demo Board MCL P/N: TB-396+ Suggested PCB Layout (PL-270)

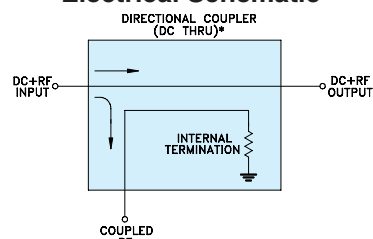


- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

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



### Electrical Schematic



\* ELECTRICAL SCHEMATIC FOR DIRECTIONAL COUPLER THAT IS DESIGNED WITHOUT INTERNAL TRANSFORMERS.

ESD Rating  
Human Body Model (HBM): Class 1A (250 v to <500 v) in accordance with ANSI/ESD STM 5.1 - 2001  
Machine Model (MM): Class M1 (< 100 v) in accordance with ANSI/ESD STM 5.2 - 1999 (pass 50V)

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