

# Surface Mount Directional Coupler

50Ω 810 to 960 MHz

## D20C+



Generic photo used for illustration purposes only

CASE STYLE: CA531

**+RoHS Compliant**

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



Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500, 1000

### Maximum Ratings

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

Permanent damage may occur if any of these limits are exceeded.

### Pin Connections

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

### Features

- low mainline loss, 0.3 dB typ.
- excellent VSWR, 1.1:1 typ.
- excellent repeatability
- miniature low profile package
- aqueous washable

### Applications

- cellular
- PCS

### Directional Coupler Electrical Specifications

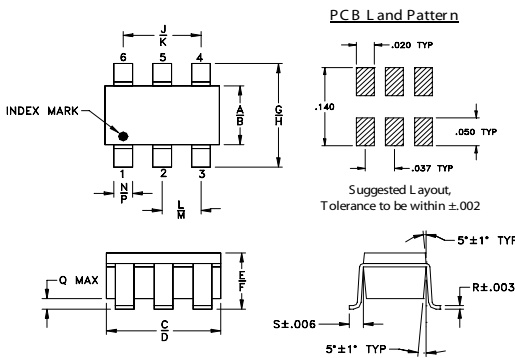
FREQ. RANGE (MHz)	COUPLING (dB)	MAINLINE LOSS <sup>1</sup> (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER <sub>3</sub> INPUT (W)
		Typ.	Max.	Typ.	Min.		
810-960	19.4±1.4	0.3	0.5	15	7	1.1	1.0

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 at 25°C.

### Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
810.00	0.21	19.88	16.85	44.95	39.39	27.31
820.00	0.21	19.78	16.81	44.68	39.07	27.28
835.00	0.21	19.63	16.77	44.25	38.78	27.23
850.00	0.21	19.48	16.77	43.54	38.90	27.18
860.00	0.22	19.38	16.77	43.31	39.11	27.16
875.00	0.22	19.23	16.77	42.82	39.62	27.12
885.00	0.22	19.14	16.79	42.66	40.18	27.11
900.00	0.23	19.00	16.78	42.05	40.70	27.08
930.00	0.24	18.73	16.74	40.89	40.57	27.02
960.00	0.24	18.47	16.69	40.28	40.62	26.90

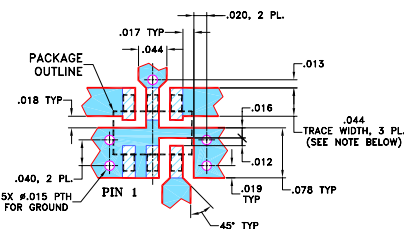
### Outline Drawing



### 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.

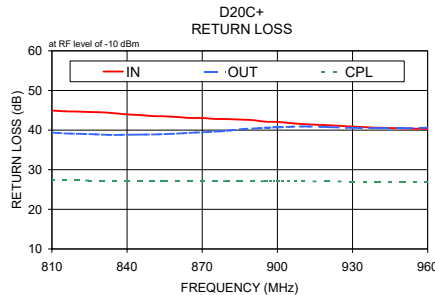
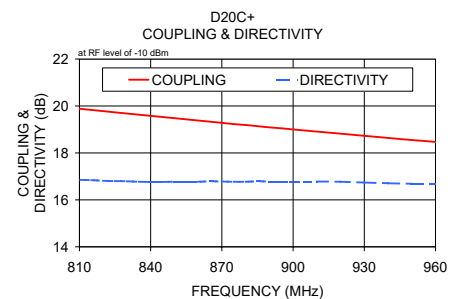
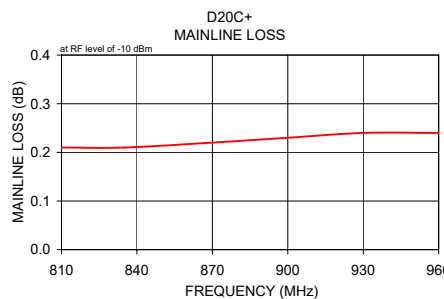
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

#### Notes

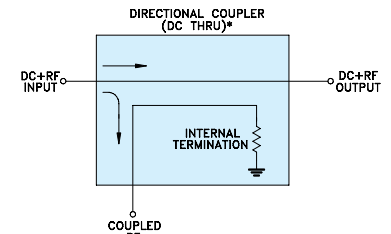
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### Electrical Schematic



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

#### ESD Rating

Human Body Model (HBM): Class 1B (500 v to <1000 v) in accordance with ANSI/ESD STM 5.1 - 2001  
Machine Model (MM): Class M3 (200 v to <400 v) in accordance with ANSI/ESD STM 5.2 - 1999

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