Surface Mount

Directional Coupler

D20C+

50Ω 810 to 960 MHz

CASE STYLE: CA531
PRICE: $ 0.99 ea. QTY (20)

+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

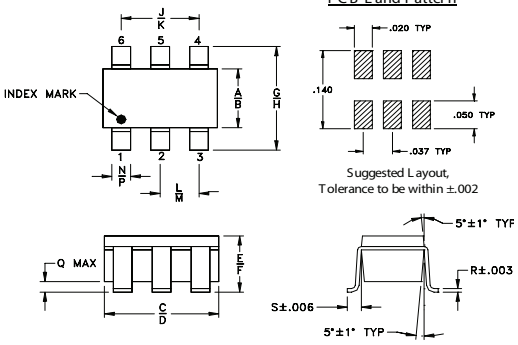
Features

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

Applications

- cellular
- PCS

Outline Drawing

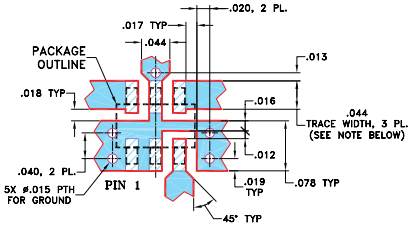


Outline Dimensions (inch / mm)

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

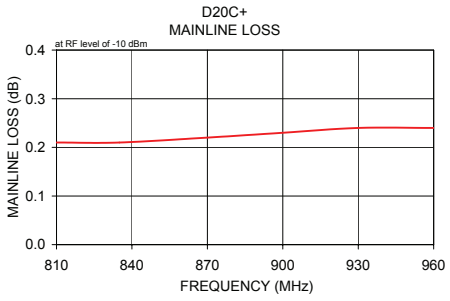
Directional Coupler Electrical Specifications

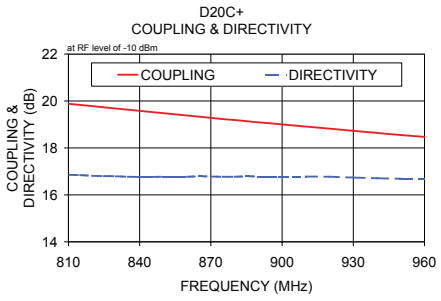
FREQ. RANGE (MHz)	COUPLING (dB)	MAINLINE LOSS[1] (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT[2] (W)
		Typ.	Max.	Typ.	Min.	Typ.	Max.
810-960	19.4±1.4	0.3	0.5	15	7	1.1	1.0

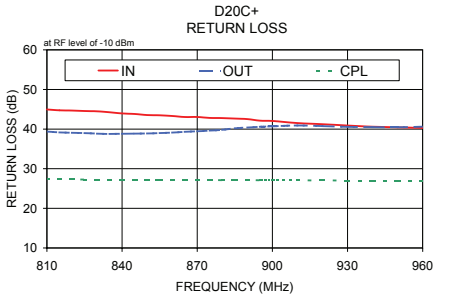
1. Mainline loss includes theoretical power loss at coupled port.
2. 4W CW when operating with a 2.0:1 maximum VSWR on all ports at 25°C.

Typical Performance Data

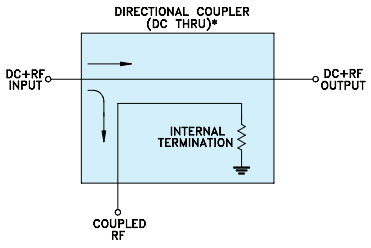
Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB) In	Return Loss (dB) Out	Return Loss (dB) Cpl
810.00	0.21	19.88	16.85	44.95	39.39	27.31
820.00	0.21	19.78	16.81	44.68	39.07	27.28
835.00	0.21	19.63	16.77	44.25	38.78	27.23
850.00	0.21	19.48	16.77	43.54	38.90	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







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

Notes
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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