

# Surface Mount Directional Coupler

## SCDC-11-2

50Ω 500 to 1100 MHz



CASE STYLE: YY161  
PRICE: \$10.90 ea. QTY (25-49)

### Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C

### Pin Connections

INPUT	1
OUTPUT	2
COUPLED	5
GROUND	4,7,8
ISOLATE (DO NOT USE)	3,6

### Features

- low mainline loss, 1.1 dB typ.
- high directivity, 20 dB typ.
- excellent solderability

### Applications

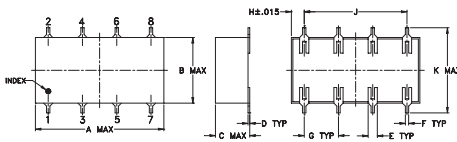
- communication
- cellular

### Directional Coupler Electrical Specifications

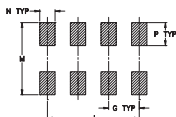
FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS <sup>1</sup> (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT, W	
	Nom.	Flatness	Typ.	Max.	Typ.	Min.		Typ.	Max.
500-1100	11.3±0.5	±0.6	1.1	1.8	17	10	1.4	2	

1. Mainline loss includes theoretical power loss at coupled port.

### Outline Drawing



### PCB Land Pattern



Suggested Layout,  
Tolerance to be within ±.002

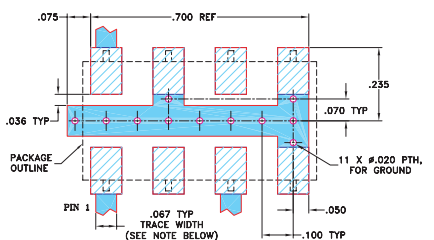
### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
0.75	0.38	0.28	0.01	0.05	0.02	0.2
19.05	9.65	7.11	0.25	1.27	0.51	5.08

H	J	K	M	N	P	wt
0.075	0.6	0.45	0.47	0.1	0.15	grams
1.91	15.24	11.43	11.94	2.54	3.81	1.60

### Demo Board MCL P/N: TB-35 Suggested PCB Layout (PL-096)



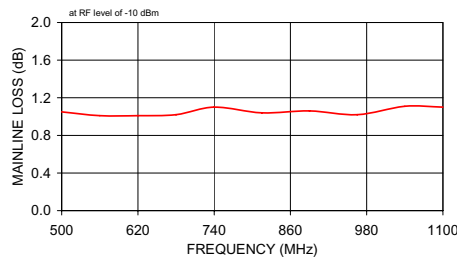
NOTE: TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS .030" ± .002".  
COPPER: 1/2 OZ. EACH SIDE.  
FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

- DENOTES PCB COPPER LAYOUT
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

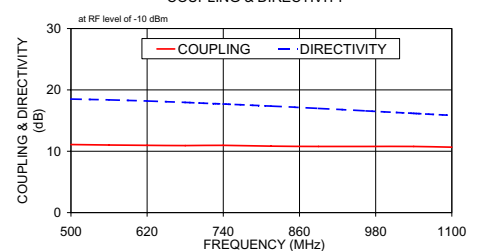
### Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
500.00	1.05	11.09	18.51	27.31	28.87	25.33
560.00	1.01	11.02	18.38	28.98	31.53	27.85
620.00	1.01	10.96	18.20	27.86	28.16	28.56
680.00	1.02	10.92	17.97	25.86	24.69	27.35
740.00	1.10	10.96	17.70	24.17	22.15	25.73
815.00	1.04	10.83	17.36	22.57	19.92	24.01
890.00	1.06	10.78	16.99	21.50	18.29	22.80
965.00	1.02	10.78	16.58	20.76	17.06	21.98
1040.00	1.11	10.78	16.18	20.30	16.11	21.48
1100.00	1.10	10.66	15.86	20.10	15.49	21.26

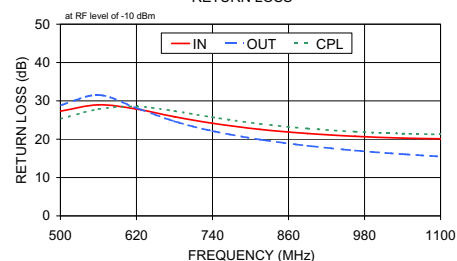
SCDC-11-2  
MAINLINE LOSS



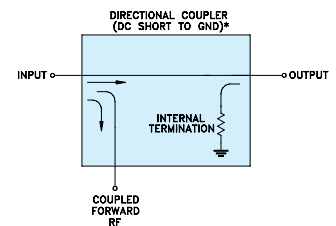
SCDC-11-2  
COUPLING & DIRECTIVITY



SCDC-11-2  
RETURN LOSS



### Electrical Schematic



\* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) THAT ROUTES DC FROM RF PORTS TO GROUND.

**Mini-Circuits**  
ISO 9001 ISO 14001 AS 9100 CERTIFIED

minicircuits.com

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: [www.minicircuits.com](http://www.minicircuits.com)

IF/RF MICROWAVE COMPONENTS

REV. B  
M119986  
SCDC-11-2  
WZ/TD/CP/AM  
081111