

# Surface Mount Directional Coupler

50Ω 5 to 1000 MHz

## JDC-10-4+ JDC-10-4



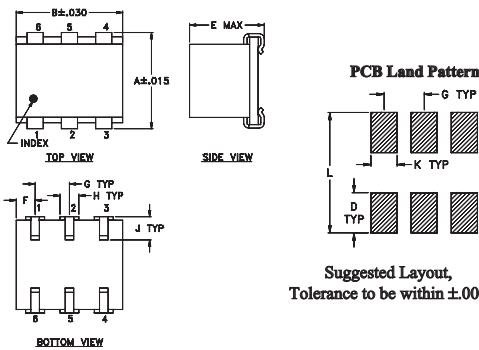
### Maximum Ratings

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

### Pin Connections

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

### Outline Drawing



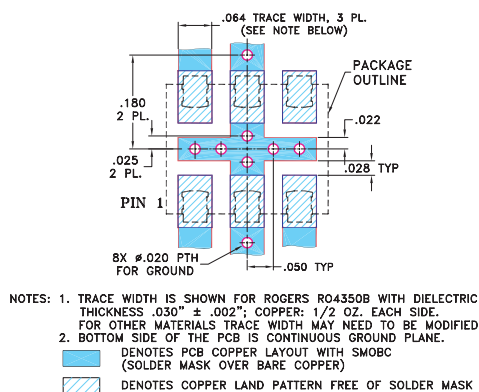
### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.280	.310	--	.100	.225	.055	.100
7.11	7.87	--	2.54	5.72	1.40	2.54

H	J	K	L	wt
.047	.065	.065	.300	grams
1.19	1.65	1.65	7.62	0.45

### Demo Board MCL P/N: TB-185 Suggested PCB Layout (PL-046)



### Features

- wideband, 5 to 1000 MHz
- low mainline loss, 1.0 dB typ.
- high directivity, 23 dB typ.
- good VSWR, 1.15 typ.
- excellent solderability

### Applications

- communications
- VHF/UHF

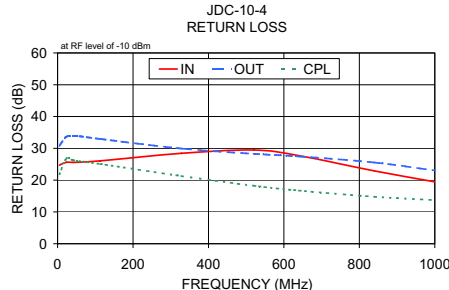
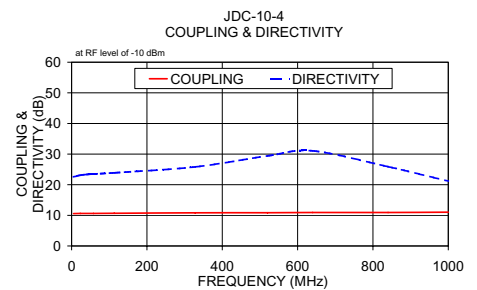
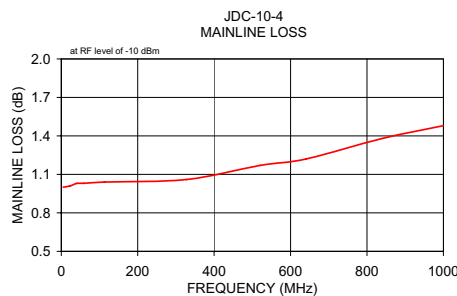
### Directional Coupler Electrical Specifications

FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS <sup>1</sup> (dB)						DIRECTIVITY (dB)						VSWR (:1)	POWER INPUT, W		
	Nom.	Flatness	L		M		U		L		M		U			Typ.	Max.	Max.
			Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.				
5-1000	10.5±0.5	±0.6	1.0	1.5	1.0	1.5	1.3	1.8	23	18	23	18	24	15	1.15	1.0	1.0	

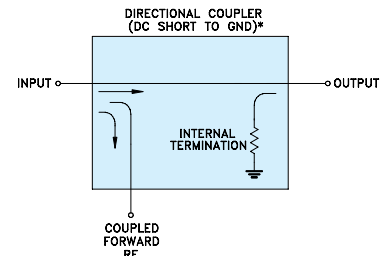
L = 5-50 MHz M = 50-500 MHz U = 500-1000 MHz  
1. Mainline loss includes theoretical power loss at coupled port.

### Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
5.00	1.00	10.57	22.57	24.73	30.83	21.85
23.00	1.01	10.63	23.10	25.60	33.61	26.74
41.00	1.03	10.63	23.37	25.58	33.93	26.28
58.00	1.03	10.63	23.51	25.65	33.82	25.95
113.00	1.04	10.66	23.89	26.05	32.96	25.10
328.00	1.06	10.82	25.82	28.44	29.96	21.30
520.00	1.17	10.85	29.42	29.47	28.27	18.25
640.00	1.22	10.92	31.06	27.71	27.46	16.72
840.00	1.38	10.92	25.91	22.90	25.56	14.79
1000.00	1.48	11.04	21.18	19.46	23.05	13.72



### 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. D  
M119986  
ED-5640  
JDC-10-4  
WZ/TD/CP/AM  
081111