

Surface Mount Directional Coupler

TCD-20-4-75+

75Ω 40 to 1200 MHz



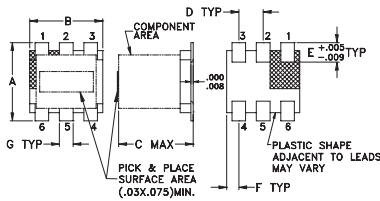
Maximum Ratings

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

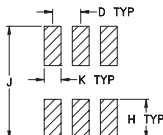
Pin Connections

INPUT	3
OUTPUT	4
COUPLED	1
GROUND	2
75Ω TERM EXTERNAL	6
NOT USED	5

Outline Drawing



PCB Land Pattern

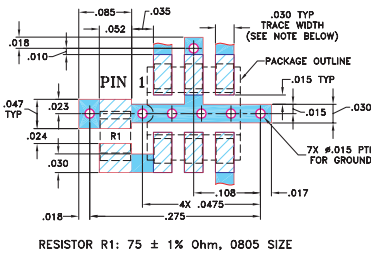


Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch/mm)

A	B	C	D	E	F
.160	.150	.160	.050	.040	.025
4.06	3.81	4.06	1.27	1.02	0.64
G	H	J	K		wt
.028	.065	.190	.030		grams
0.71	1.65	4.83	0.76		0.15

Demo Board MCL P/N: TB-72 Suggested PCB Layout (PL-010)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS 0.030" ± 0.002"; 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

Features

- wideband, 40-1200 MHz
- excellent flatness, ±0.5 dB typ. each band
- better performance than MA-COM EMDC-20-2-75
- footprint compatible to EMDC-10-1-75
- aqueous washable

Applications

- CATV

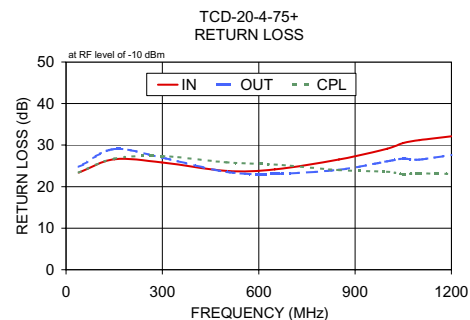
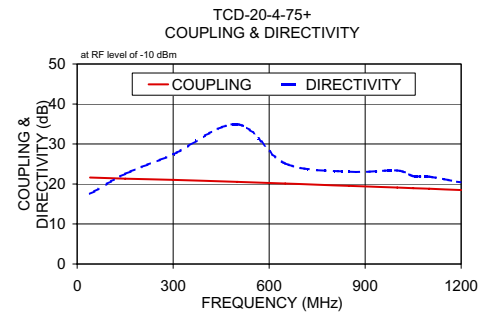
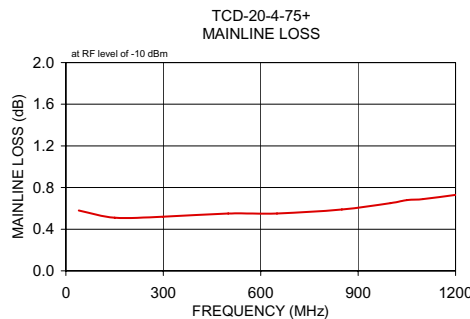
Directional Coupler Electrical Specifications

FREQ. RANGE (MHz)	COUPLING (dB)		MAINLINE LOSS ¹ (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT, W
	Nom.	Flatness	Typ.	Max.	Typ.	Min.		
f_L - f_U								
40-500	21±0.5	±0.8	0.5	0.9	20	15	1.15	1.0
500-870	20±0.6	±0.8	0.6	1.0	23	16	1.15	1.0
870-1200	19.5±0.7	±0.8	0.6	1.1	20	14	1.15	1.0

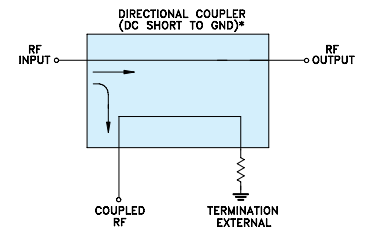
1. Mainline loss includes theoretical power loss at coupled port.

Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
40.00	0.58	21.64	17.52	23.40	24.77	23.38
150.00	0.51	21.32	22.55	26.56	29.03	26.72
300.00	0.52	21.04	27.40	25.81	26.94	27.36
500.00	0.55	20.52	34.93	23.79	23.55	25.86
650.00	0.55	20.11	25.14	24.15	23.07	25.34
850.00	0.59	19.53	23.06	26.52	24.05	24.00
1000.00	0.65	19.12	23.38	29.12	26.11	23.57
1050.00	0.68	18.96	21.95	30.51	26.75	22.99
1100.00	0.69	18.81	21.82	31.20	26.49	23.19
1200.00	0.73	18.51	20.42	32.12	27.62	23.06



Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) AND EXTERNAL TERMINATION.

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