

Surface Mount Directional Coupler

TCD-10-4-75+

75Ω 5 to 1000 MHz



CASE STYLE: AT224-1A

+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
13"	1000, 2000

Maximum Ratings

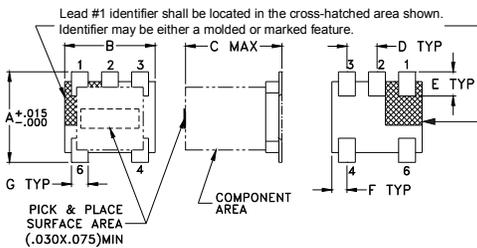
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C

* Case temperature is defined as temperature on ground leads. Permanent damage may occur if any of these limits are exceeded.

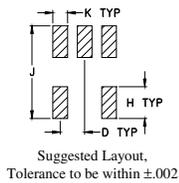
Pin Connections

INPUT	3
OUTPUT	4
COUPLED	1
GROUND	2
75Ω TERM EXTERNAL	6

Outline Drawing



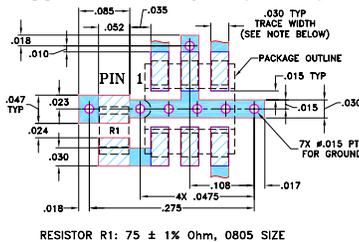
PCB Land Pattern



Outline Dimensions (inch/mm)

A	B	C	D	E	F
.150	.150	.160	.050	.040	.025
3.81	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 RO4350B 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

Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document are subject to Mini-Circuit's standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp

Features

- wideband, 5-1000 MHz
- excellent flatness, ±0.1 dB typ.
- better performance than MA-COM EMDC-10-1-75
- footprint compatible to EMDC-10-1-75
- aqueous washable

Applications

- CATV

Directional Coupler Electrical Specifications

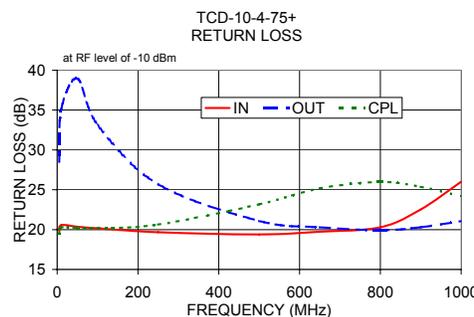
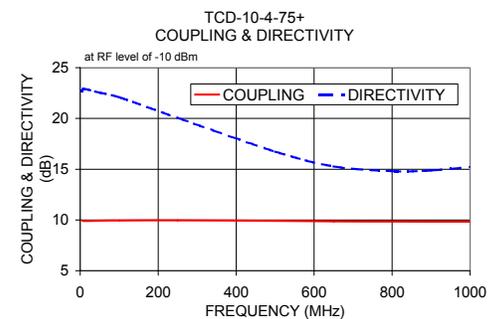
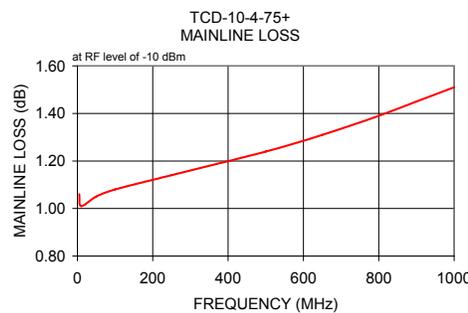
FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS ¹ (dB)						DIRECTIVITY (dB)			VSWR (:1)	POWER INPUT, W			
	Nom.	Flatness	L		M		U		L	M	U					
f _L -f _U			Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Max.		
5-1000	9.9±0.5	±0.3	1.0	1.5	1.1	1.5	1.3	1.9	22	19	20	13	15	11	1.25	1.0

L= 5-50 MHz M= 50-500 MHz U= 500-1000 MHz

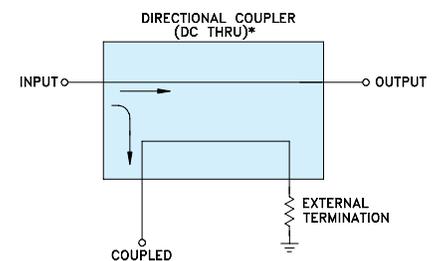
1. Mainline loss includes theoretical power loss at coupled port.

Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
5.00	1.06	9.94	22.66	19.73	28.50	19.46
10.00	1.01	9.90	22.91	20.57	35.13	20.26
50.00	1.05	9.93	22.54	20.35	38.95	20.20
100.00	1.08	9.95	22.09	20.17	33.10	20.18
250.00	1.14	9.96	20.05	19.68	25.68	20.63
500.00	1.24	9.92	16.74	19.39	21.07	23.17
650.00	1.31	9.86	15.28	19.74	20.28	25.18
800.00	1.39	9.85	14.81	20.28	19.92	25.99
900.00	1.45	9.82	14.88	22.54	20.29	25.37
1000.00	1.51	9.83	15.23	26.00	21.07	24.19



Electrical Schematic



* ELECTRICAL SCHEMATIC FOR DIRECTIONAL COUPLERS REQUIRING EXTERNAL TERMINATION THAT IS DESIGNED WITHOUT INTERNAL TRANSFORMERS.

Mini-Circuits®

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