



Mini-Circuits®

SURFACE MOUNT 

Directional Coupler TCD-10-122-75X+

75Ω 10 dB 5 to 1250 MHz

FEATURES

- Wideband, 5 to 1250 MHz
- Low mainline loss, 1.7 dB typ.
- Aqueous washable
- Leads for excellent solderability
- Protected by US Patent 6,140,887



Generic photo used for illustration purposes only

CASE STYLE: AT1521

APPLICATIONS

- DOCSIS® 3.1 Systems
- VHF/UHF
- CATV
- Cellular

+RoHS Compliant

The +Suffix identifies RoHS Compliance.
See our website for methodologies and qualifications

ELECTRICAL SPECIFICATIONS AT +25°C

Parameter	Condition (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		5		1250	MHz
Mainline Loss ¹ (above theoretical 0.1 dB)	5-50	—	1.1	1.5	dB
	50-1000	—	1.5	1.9	
	1000-1250	—	1.7	2.0	
Nominal Coupling	5-1250	—	10.0±0.5	—	dB
Coupling Flatness(±)	5-1250	—	0.3	0.6	dB
Directivity	5-250	16	21	—	dB
	250-1000	10	15	—	
	1000-1250	8	12	—	
Return Loss (Input)	5-50	17	20	—	dB
	50-1000	16	22	—	
	1000-1250	16	20	—	
Return Loss (Output)	5-50	20	25	—	dB
	50-1000	18	22	—	
	1000-1250	18	20	—	
Return Loss (Coupling)	5-50	17	18	—	dB
	50-1000	16	22	—	
	1000-1250	16	20	—	
Input Power	5-200	—	—	0.5	W
	200-1250	—	—	1.0	

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

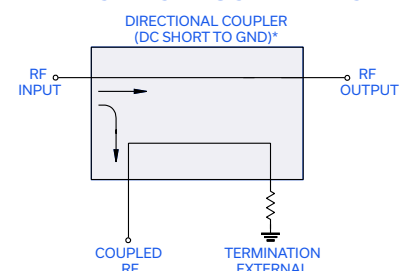
ABSOLUTE MAXIMUM RATINGS²

Parameter	Ratings
Operating Temperature	-40°C to +85°C ³
Storage Temperature	-55°C to +100°C

2. Permanent damage may occur if any of these limits are exceeded.

3. Case temperature is defined as temperature on ground leads.

ELECTRICAL SCHEMATIC



*Electrical schematic is for Directional coupler with internal transformer(s) and external termination

REV. A
ECO-026252
TCD-10-122-75X+
MCL NY
250716





Directional Coupler **TCD-10-122-75X+**

PIN CONNECTIONS

PRODUCT MARKING: DM

RESISTOR R1: 75 $\pm$ 1% 0hm, 0805 SIZE

 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Top-hat total thickness: .013 inches MAX.

Weight: 0.15 grams



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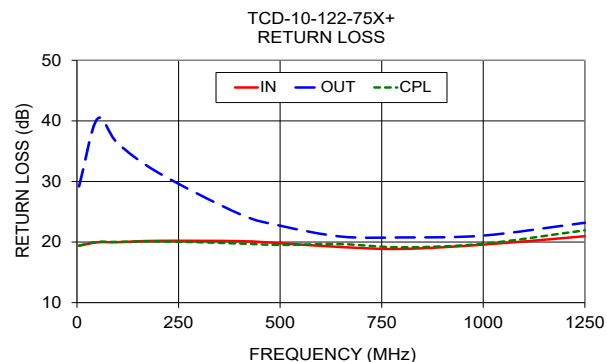
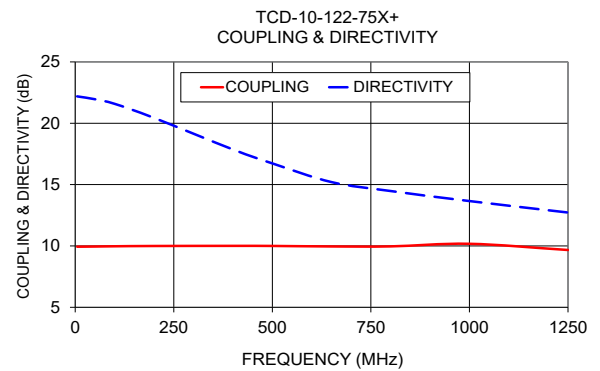
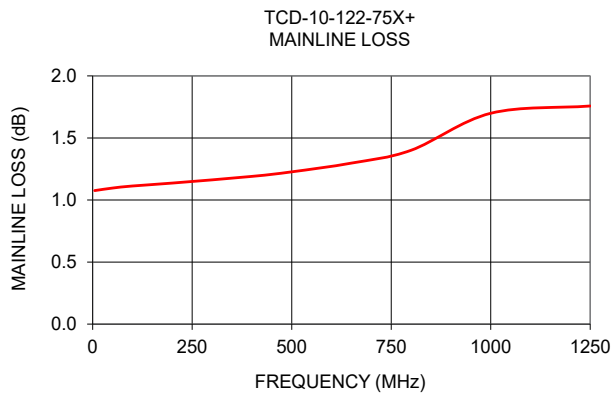
SURFACE MOUNT top hat

Directional Coupler TCD-10-122-75X+

75Ω 10 dB 5 to 1250 MHz

TYPICAL PERFORMANCE DATA

Frequency (MHz)	Mainline Loss (dB)	Coupling (dB)	Directivity (dB)	Return Loss (dB)		
	In-Out			In	Out	Cpl
5	1.08	9.94	22.19	19.41	29.19	19.41
50	1.10	9.95	21.96	19.96	40.31	20.02
100	1.11	9.97	21.58	19.99	36.32	20.02
200	1.14	10.00	20.43	20.21	31.46	20.13
400	1.19	10.01	17.86	20.16	24.64	19.76
500	1.23	10.00	16.73	19.82	22.71	19.53
650	1.30	9.96	15.21	19.18	20.91	19.66
800	1.40	9.97	14.48	18.87	20.77	19.14
1000	1.70	10.18	13.66	19.58	21.07	19.72
1250	1.76	9.67	12.72	20.97	23.18	21.94



- 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.
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