

Directional Couplers

50Ω 10 dB coupling 5 to 1000 MHz

Maximum Ratings

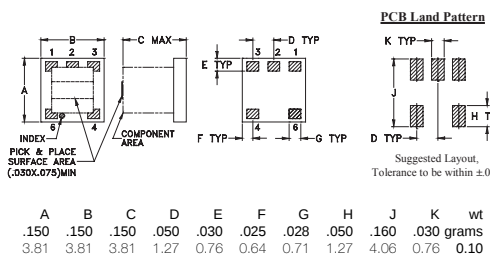
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Permanent damage may occur if any of these limits are exceeded.	

Pin Connections

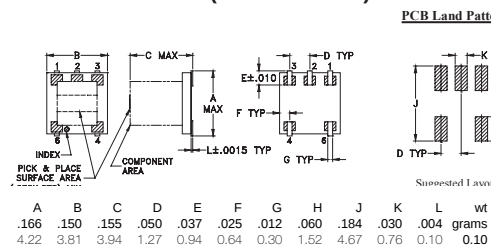
INPUT	3
OUTPUT	4
COUPLED	1
GROUND	2
ISOLATE (DO NOT USE)	6

Outline Drawing / Dimensions (inch)

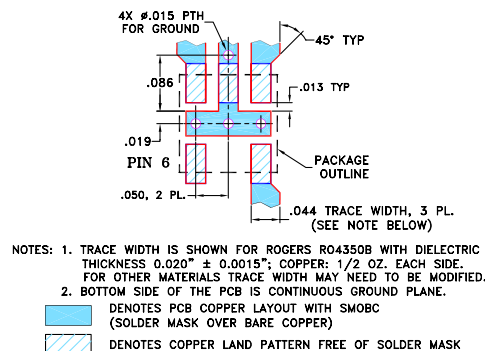
AT790-1 (DBTC-10-13+)



AT1030 (DBTC-10-13L+)



Demo Board MCL P/N: TB-278 Suggested PCB Layout (PL-150)



Features

- very flat coupling
- very broadband, multi octave
- temperature stable, LTCC base
- all welded construction
- leads attached for better solderability
- micro miniature coupler
- aqueous washable
- protected by US Patents 6,140,887 & 6,784,521

Applications

- VHF/UHF receivers/transmitters
- cellular

Electrical Specifications

FREQ. RANGE (MHz)	COUPLING (dB)		MAINLINE LOSS* (dB)			DIRECTIVITY (dB)			VSWR** (:1)	POWER INPUT (W)	
f_L - f_U	Nom.	Flatness	L	M	U	L	M	U	Typ.	L	MU
			Typ.	Max.	Typ.	Max.	Typ.	Max.		Max.	Max.
5-1000	10.3±0.5	±0.8	1.3	2.0	1.4	1.8	1.6	2.0	21 17	18 13	15 10

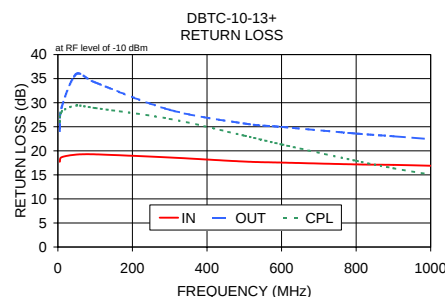
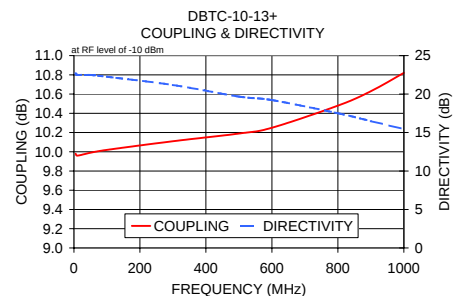
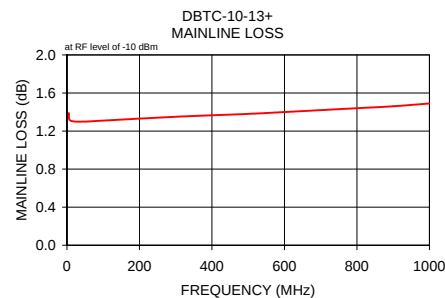
L = low range [f_L to 10 f_L] M = mid range [10 f_L to $f_U/2$] U = upper range [$f_U/2$ to f_U]

* Includes theoretical coupled power loss of 0.4 dB at 10 dB coupling

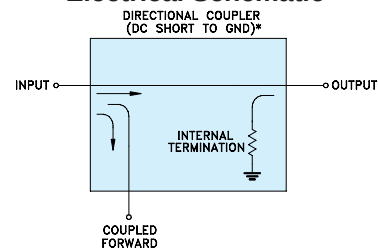
** For coupled port VSWR above 500 MHz, 1.6:1 typ.

Typical Performance Data

Frequency (MHz)	Mainline Loss (dB)		Coupling (dB)	Directivity (dB)	Return Loss (dB)	
	In-Out	In-Cpl			In	Cpl
5.00	1.39	9.98	22.65	17.72	24.12	25.96
10.00	1.31	9.96	22.50	18.66	28.97	28.11
50.00	1.30	9.99	22.49	19.21	35.99	29.42
100.00	1.31	10.02	22.25	19.27	34.22	28.89
300.00	1.35	10.11	21.18	18.61	28.51	26.63
500.00	1.38	10.19	19.67	17.76	25.67	23.15
600.00	1.40	10.25	19.22	17.56	24.97	21.33
800.00	1.44	10.48	17.51	17.17	23.59	17.92
900.00	1.46	10.63	16.49	17.08	23.03	16.39
1000.00	1.49	10.82	15.45	16.89	22.42	15.06



Electrical Schematic



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

For detailed performance specs & shopping online see web site

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REV. B
M119986
ED-12884/1
DBTC-10-13+_13L+
WZ/TD/CP/AM
090903