

Surface Mount Directional Coupler

50Ω 12 dB 5 to 1000 MHz

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

DBTC-12-4LX+



Generic photo used for illustration purposes only

CASE STYLE: AT1642

+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

Electrical Specifications at 25°C

Parameter	Condition (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		5		1000	MHz
Mainline Loss ¹	5-50		0.9	1.8	dB
	50-500		0.7	1.3	
	500-1000		1.1	1.6	
Nominal Coupling	5-1000		12.2±0.5		dB
Coupling Flatness(±)	5-1000			±0.9	dB
Directivity	5-50	22	33		dB
	50-500	14	21		
	500-1000	—	15		
VSWR ²	5-1000		1.2		dB
Input Power	5-50			0.5	W
	50-500			1.0	
	500-1000			1.0	

1. Includes theoretical coupled power loss of 0.27 dB at 12 dB coupling.

2. For coupled port VSWR above 500 MHz, 1.5:1 typ.

Maximum Ratings

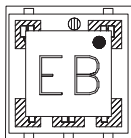
Parameter	Ratings
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C

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

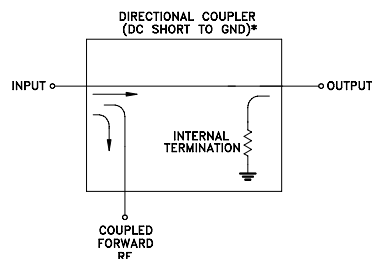
Pin Connections

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

Product Marking



Electrical Schematic



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



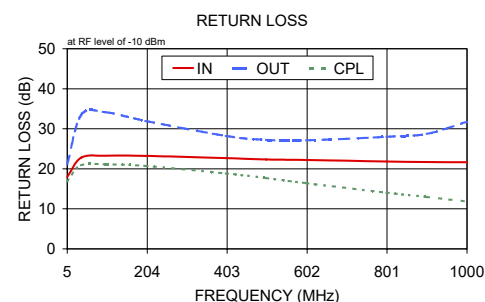
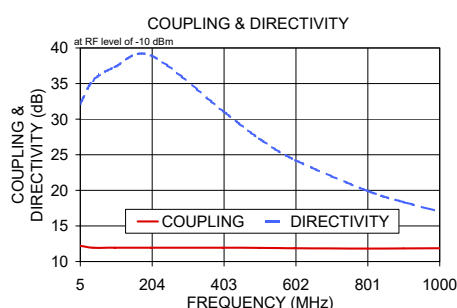
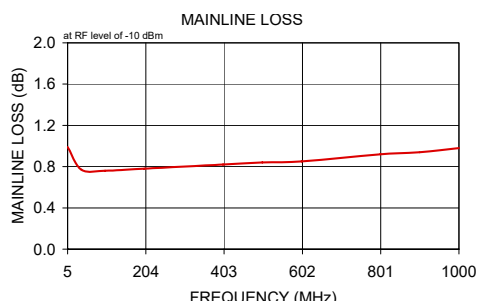
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REV. A
M151107
ED-8954A
DBTC-12-4LX+
WZ/CP/AM
200204
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Demo Board MCL P/N: TB-278
Suggested PCB Layout (PL-150)

A	B	C	D	E	F
.166	.150	.155	.050	.037	.025
4.22	3.81	3.94	1.27	0.94	0.64
G	H	J	K	L	wt
.012	.060	.184	.030	.004	grams
0.30	1.52	4.67	0.76	0.10	0.10

Frequency (MHz)	Mainline Loss	Coupling	Directivity	Return Loss		
	(dB) In-Out	(dB) In-Cpl	(dB)	In	(dB) Out	Cpl
5.00	0.88	12.07	34.34	19.19	23.31	17.81
10.00	0.79	11.96	34.86	21.25	27.96	19.68
50.00	0.73	11.90	35.53	22.99	35.09	21.01
100.00	0.75	11.93	37.41	22.94	34.58	21.11
500.00	0.85	11.99	25.82	22.00	26.19	18.96
600.00	0.88	11.99	22.32	21.56	25.58	17.94
800.00	0.95	12.03	17.75	20.94	25.46	15.62
900.00	1.00	12.07	16.15	20.79	26.14	14.55
1000.00	1.06	12.13	14.74	20.48	26.70	13.43



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