

# Directional Couplers

50Ω, 13dB coupling, 5 to 1000 MHz

DBTC-13-4+

DBTC-13-4L+



No Leads

CASE STYLE:AT790-1  
PRICE:\$1.99 ea. QTY (25)  
\$1.69 ea. QTY (1000)



Leads

CASE STYLE:AT1030  
PRICE:\$2.14 ea. QTY (25)  
\$1.84 ea. QTY (1000)

## 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

## 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)						
	Nom.	Flatness	L Typ.	M Max.	U Typ.	Max.	L Typ.	M Min.	U Min.		L Max.	MU Max.					
5-1000	13.0±0.5	±0.6	0.7	1.3	0.7	1.3	1.1	1.6	21	17	18	13	13	—	1.2	0.5	1.0

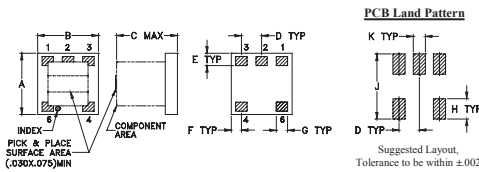
L = low range [f<sub>l</sub> to 10 f<sub>l</sub>] M = mid range [10 f<sub>l</sub> to f<sub>u</sub>/2] U = upper range [f<sub>u</sub>/2 to f<sub>u</sub>]  
\* Includes theoretical coupled power loss of 0.22 dB at 13 dB coupling  
\*\* For coupled port VSWR above 500 MHz, 1.4:1 typ.

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

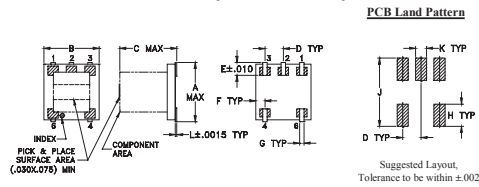
## Outline Drawing / Dimensions (inch/mm)

AT790-1 (DBTC-13-4)



A	B	C	D	E	F	G	H	J	K	wt
.150	.150	.150	.050	.030	.025	.028	.050	.160	.030	grams
3.81	3.81	3.81	1.27	0.76	0.64	0.71	1.27	4.06	0.76	0.10

AT1030 (DBTC-13-4L)

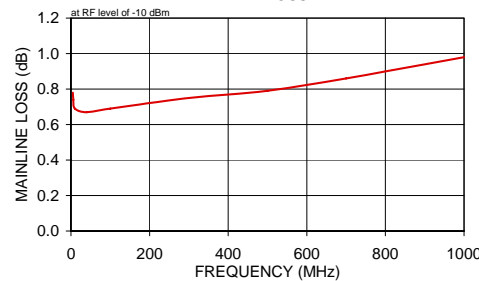


A	B	C	D	E	F	G	H	J	K	L	wt
.166	.150	.155	.050	.037	.025	.012	.060	.184	.030	.004	grams
4.22	3.81	3.94	1.27	0.94	0.64	0.30	1.52	4.67	0.76	0.10	0.10

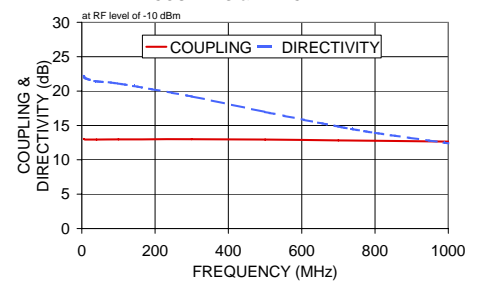
## Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
5.00	0.77	13.08	22.34	19.78	23.72	22.27
10.00	0.70	13.00	21.94	21.65	27.70	23.92
50.00	0.65	12.95	21.49	23.18	32.43	25.26
100.00	0.67	12.98	21.06	23.12	31.88	25.46
300.00	0.74	13.04	19.82	22.41	26.20	24.99
500.00	0.79	13.05	18.10	21.80	23.68	24.06
600.00	0.82	13.03	16.98	21.37	22.90	23.20
800.00	0.89	13.01	15.16	21.11	22.22	21.19
900.00	0.93	12.99	14.48	21.34	22.35	20.16
1000.00	0.98	12.97	13.82	21.62	22.42	19.03

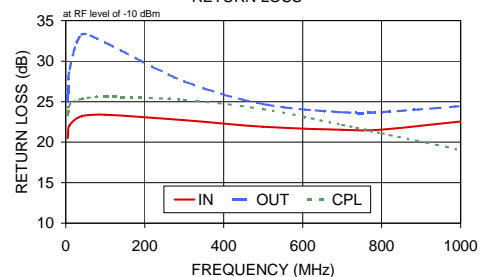
DBTC-13-4+ MAINLINE LOSS



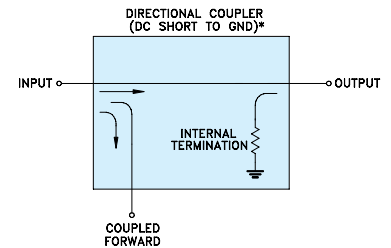
DBTC-13-4+ COUPLING & DIRECTIVITY



DBTC-13-4+ RETURN LOSS



## 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. J  
M119986  
DBTC-13-4+  
DBTC-13-4L+  
WZ/TDC/PIAM  
090903  
ED-8658/1  
ED-8658A

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