

Directional Couplers

50Ω, 12dB coupling, 5 to 1000 MHz

DBTC-12-4+

DBTC-12-4L+

Maximum Ratings

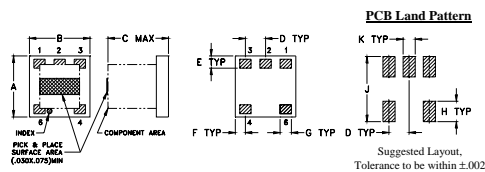
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C

Pin Connections

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

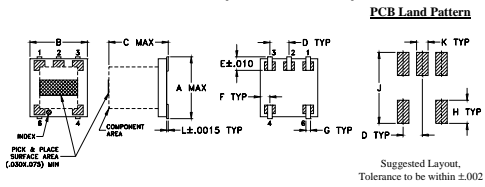
Outline Drawing / Dimensions (inch mm)

AT790-1 (DBTC-12-4)



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

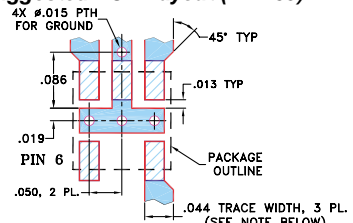
AT1030 (DBTC-12-4L)



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

Demo Board MCL P/N: TB-278

Suggested PCB Layout (PL-150)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015". 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

Features

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

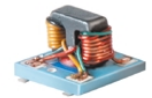
Applications

- VHF/UHF receivers/transmitters
- cellular



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)

+ 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.

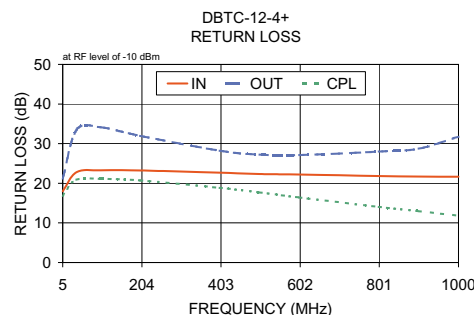
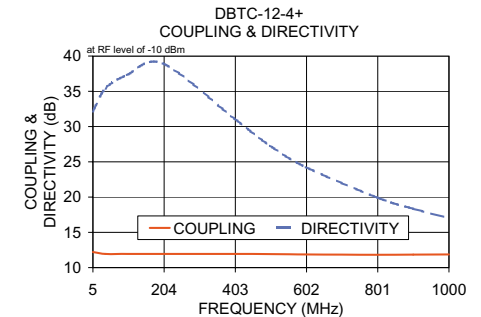
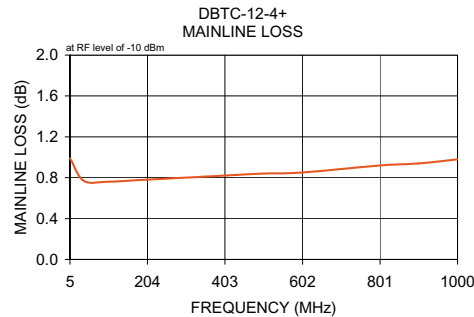
Electrical Specifications

FREQ. RANGE (MHz)	COUPLING (dB)		MAINLINE LOSS* (dB)			DIRECTIVITY (dB)			VSWR** (:1)	POWER INPUT (W)							
	Nom.	Max. Flatness	L Typ.	M Typ.	U Typ.	L Typ.	M Typ.	U Typ.		L Max.	MU Max.						
5-1000	12.2±0.5	±0.9	0.9	1.8	0.7	1.3	1.1	1.6	33	22	21	14	15	—	1.2	0.5	1.0

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 0.27 dB at 12 dB coupling
 ** For coupled port VSWR above 500 MHz, 1.5:1 MHz

Typical Performance Data

Frequency (MHz)	Mainline Loss (dB)		Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
	In-Out	In-Cpl			In	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	



electrical schematic

