

Directional Couplers

DBTC-20-4-75+ DBTC-20-4-75L+

75Ω, 20dB coupling, 5 to 1250 MHz

Maximum Ratings

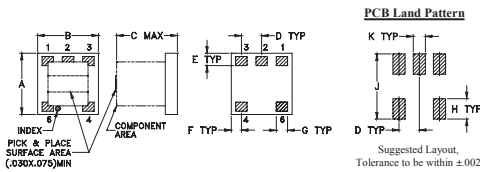
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Permanent damage may occur if any of these limits are exceeded.	

Pin Connections

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

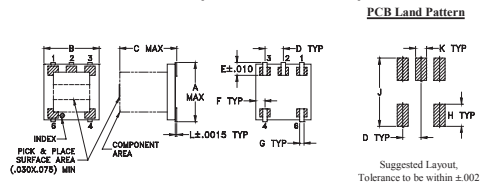
Outline Drawing / Dimensions (inch mm)

AT790-1 (DBTC-20-4-75)



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

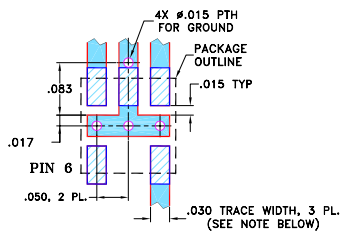
AT1030 (DBTC-20-4-75L)



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-279

Suggested PCB Layout (PL-151)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.030" ± 0.002"; 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
- aqueous washable
- protected by US Patents 6,140,887 & 6,784,521

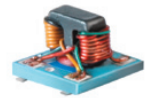
Applications

- CATV



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.

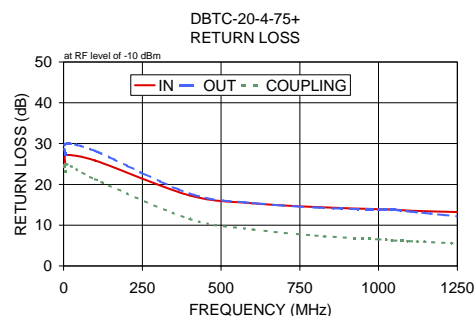
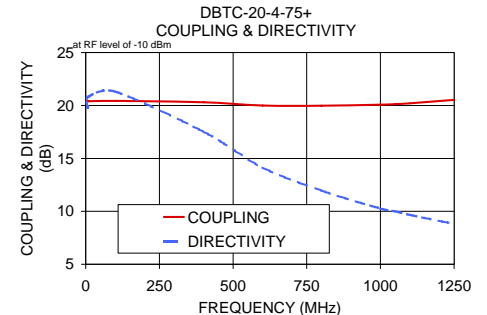
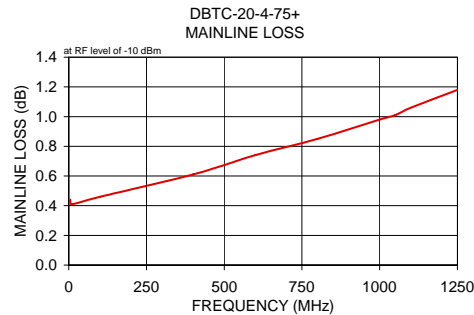
Electrical Specifications

FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS* (dB)				DIRECTIVITY (dB)				VSWR** (:1)	POWER INPUT (W)									
	Nom.	Flatness	L	M	U	U ¹	L	M	U	U ¹		L	MU ¹								
5-1250	20.5±0.5	±0.9	0.4	0.7	0.6	0.9	0.8	1.2	1.1	1.5	20	16	19	13	11	7	9	6	1.4	0.5	1.0

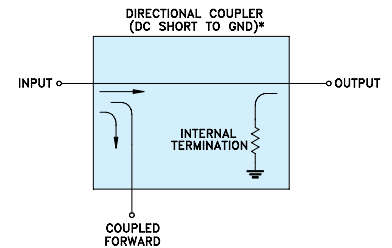
L = 5-50 MHz M = 50-500 MHz U = 500-1000 MHz U¹ = 1000 - 1250 MHz
* Includes theoretical coupled power loss of 0.04 dB at 20 dB coupling
** For coupled port VSWR above 500 MHz, 1.6:1 typ.

Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
5.00	0.44	20.47	19.75	25.31	27.17	23.11
10.00	0.41	20.40	20.84	27.21	29.99	24.93
100.00	0.46	20.44	21.31	25.84	28.18	21.27
400.00	0.61	20.30	17.52	17.30	17.77	11.54
600.00	0.74	19.99	14.13	15.36	15.44	8.94
800.00	0.85	19.98	11.96	14.44	14.31	7.43
1000.00	0.98	20.07	10.26	13.93	13.80	6.52
1050.00	1.01	20.13	10.01	13.85	13.76	6.23
1100.00	1.06	20.21	9.66	13.53	13.35	6.08
1250.00	1.18	20.53	8.81	13.22	12.20	5.55



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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DBTC-20-4-75+ ED-107931
DBTC-20-4-75L+ ED-107934/1
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