

# Directional Couplers

**NEW!**

## DBTC-75-OHMS SERIES

6 to 20 dB Coupling 75Ω 5 to 1500 MHz

### Features

- very flat coupling
- very broadband, multi octave
- temperature stable, BLUE CELL™ base
- all welded construction
- leads attached for better solderability
- micro-miniature coupler
- protected by U.S. Patent 6,140,887 & 6,784,521



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)

### Applications

- cable TV

### Directional Coupler Electrical Specifications

MODEL NO.	FREQ. RANGE (MHz) $f_L$ - $f_U$	COUPLING (dB)		MAINLINE LOSS* (dB)								THEORETICAL LOSS (dB)	DIRECTIVITY (dB)								VSWR** (:1)	POWER INPUT, W	
		Nom.	Max. Flatness	L		M		U		U			L		M		U		Typ.	L		MU	
				Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.		Typ.	Min.	Typ.	Min.	Typ.	Min.					
DBTC-6-4-75	5-1250	6.8±0.3	±0.8	2.2	3.1	2.2	2.6	2.3	2.8	2.3	2.9	1.02	15	13	17	13	16	10	12	7	1.40	0.5	1.0
DBTC-10-4-75	5-1000	10.5±0.5	±0.7	1.5	2.2	1.4	2.0	1.5	2.0	—	—	0.40	21	16	20	13	16	—	—	—	1.30	0.5	1.0
DBTC-13-5-75	5-1000	13.2±0.5	±0.6	0.9	1.4	1.0	1.5	1.1	1.6	—	—	0.21	21	17	19	14	18	—	—	—	1.30	0.5	1.0
	1000-1500	13.6±0.5	±0.8	—	—	1.4	2.2	—	—	—	—	0.20	—	—	17	—	—	—	—	—	—	—	—
DBTC-16-5-75	5-1000	16.3±0.5	±0.7	1.2	2.0	1.0	1.5	1.1	1.6	—	—	0.10	22	16	21	13	20	—	—	—	1.30	1.0	1.0
	1000-1500	16.5±0.5	±0.7	—	—	1.3	1.9	—	—	—	—	0.10	—	—	19	—	—	—	—	—	—	—	—
DBTC-18-4-75	5-1000	18.2±0.5	±0.7	0.8	1.5	0.8	1.4	1.0	1.6	—	—	0.07	25	16	21	14	15	—	—	—	1.30	1.0	1.0
DBTC-20-4-75	5-1250	20.5±0.5	±0.9	0.4	0.7	0.6	0.9	0.8	1.2	1.1	1.5	0.04	20	16	19	13	11	7	9	6	1.40	0.5	1.0

\* Includes theoretical loss at coupled port

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

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  $f_U$ ]

U = 1000-1250 MHz

To order models with leads, add "L" suffix to model No.

### Pin Connections

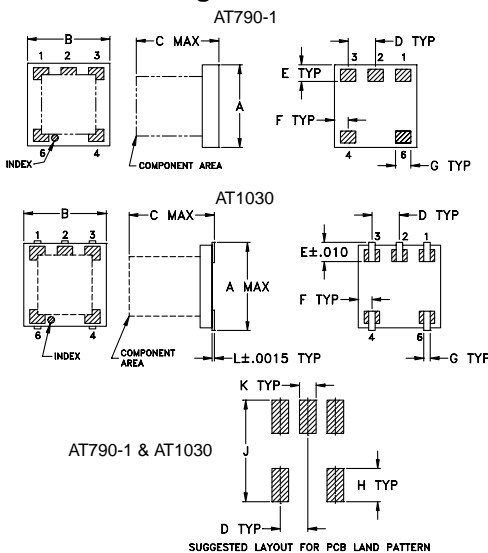
INPUT	3
OUTPUT	4
COUPLED	1
GROUND	2
NOT USED*	5,6

\*pins 5&6 must be isolated

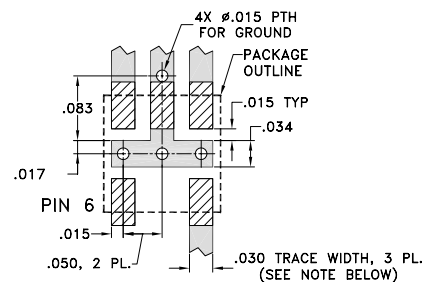
### Maximum Ratings

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

### Outline Drawing



### Demo Board MCL P/N: TB-279 Suggested PCB Layout (PL-151)



NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350 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
- ▨ DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

### Reflow Solder Assembly

Silver-bearing solder (Sn/Pb/Ag 62/36/2%) is recommended; however, tin-lead eutectic (Sn/Pb 63/37%) may be used. For temperature profiles, see Application Note AN-40-004

### Outline Dimensions (inch/mm)

Case Style	A	B	C	D	E	F	G	H	J	K	L	wt. grams
AT790-1	.150	.150	.150	.050	.030	.025	.028	.050	.160	.030	—	.10
	3.81	3.81	3.81	1.27	0.76	0.64	0.71	1.27	4.06	0.76	—	
AT1030	.166	.150	.155	.050	.037	.025	.012	.060	.184	.030	.004	.10
	4.22	3.81	3.94	1.27	0.94	0.64	0.30	1.52	4.67	0.76	0.10	



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REV. G  
M89618  
DBTC-6-4-75 ED-104888/1  
DBTC-6-4-75L ED-10488C/1  
DBTC-10-4-75 ED-8953/1  
DBTC-10-4-75L ED-8953A/1  
DBTC-13-5-75 ED-8967/1  
DBTC-13-5-75L ED-8967A/1  
DBTC-16-5-75 ED-8978/1  
DBTC-16-5-75L ED-8978A/1  
DBTC-18-4-75 ED-8956/1  
DBTC-18-4-75L ED-8956A/1  
DBTC-20-4-75 ED-10793/1  
DBTC-20-4-75L ED-10793A/1  
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