

Surface-Mount, Micro-Miniature

# Directional Couplers

## DBTC-SERIES

**NEW!**

50&75Ω 5 to 2000 MHz



AT790



### Features

- very flat coupling
- very broadband, multi octave
- temperature stable, BLUE CELL™ base
- all welded construction
- micro-miniature coupler, 0.15" x 0.15" x 0.15"
- protected by patent 6,140,887
- additional patent pending

### Applications

- instrumentation
- cable TV
- communication receivers and transmitters

### Electrical Specifications

MODEL NO.	FREQ. RANGE (MHz)	COUPLING (dB)	MAINLINE LOSS (dB)			DIRECTIVITY (dB)			VSWR <sup>1</sup> (:1)	POWER INPUT, W		CASE STYLE	COMMENTS	PRICE \$						
			Max. Nom.	Max. Flatness	Typ.	L	M	U		Typ. Min.	M				U	L	MU			
DBTC-9-4	5-1000	9.0±0.5 ±0.5	1.2	2.0	1.2	1.8	1.5	2.0	21	17	18	13	15	—	1.30	0.5	1.0	AT790	na	1.99
DBTC-10-4-75	5-1000	10.5±0.5 ±0.7	1.5	2.2	1.4	2.0	1.5	2.0	21	16	20	13	16	—	1.30	0.5	1.0	AT790	na	1.99
DBTC-12-4	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	—	1.30	0.5	1.0	AT790	na	1.99
DBTC-13-4	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	—	1.30	0.5	1.0	AT790	na	1.99
DBTC-13-5-75	5-1000	13.2±0.5 ±0.6	0.9	1.4	1.0	1.5	1.1	1.6	21	17	19	14	18	—	1.30	0.5	1.0	AT790	na	1.99
	1000-1500	13.6±0.5 ±0.8			1.4	2.2					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	22	16	21	13	20	—	1.30	1.0	1.0	AT790	na	1.99
	1000-1500	16.5±0.5 ±0.7			1.3	1.9					19	—			1.30	1.0	1.0			
DBTC-17-5	50-1000	17.0±0.7 ±0.9			0.9	1.4					20	13			1.30	—	2.0	AT790	na	1.99
	1000-1500	17.7±0.9 ±1.0			1.0	1.5					20	10			1.30	—	2.0			
	1500-2000	18.0±1.0 ±0.8			1.1	1.6					14	—			1.30	—	2.0			
DBTC-18-4-75	5-1000	18.2±0.5 ±0.7	0.8	1.5	0.8	1.4	1.0	1.6	25	16	21	14	15	—	1.30	1.0	1.0	AT790	na	1.99
DBTC-20-4	20-1000	20.4±0.6 ±0.8	0.3	1.0	0.4	1.0	0.7	1.3	21	13	21	14	16	—	1.20	1.0	1.0	AT790	na	1.99

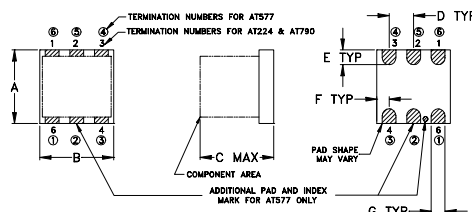
1. For coupled port VSWR above 500 MHz, 1.6:1 typ.

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  $f_U$ ]

### Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 150°C

### Outline Drawing



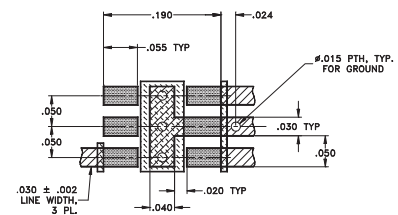
### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.150	.150	.150	.050	.030	.025	.028
3.81	3.81	3.81	1.27	0.76	0.64	0.71

H	J	K	wt.
.050	.160	.030	grams
1.27	4.06	0.76	.15

### Suggested PCB Layouts

PL-020 for 50 OHMS  
PL-018 for 75 OHMS (shown)



- ▨ DENOTES METALLIZATION
- ▤ DENOTES SOLDER MASK
- ▩ DENOTES METALLIZATION FOR DEVICE SOLDERING

RECOMMENDED MATERIAL: ROGERS RO4350, DIELECTRIC THICKNESS: .030 ± .002 COPPER: 1/2 OZ. EACH SIDE

### Pin Configuration

PORT	(na)
INPUT	3
OUTPUT	4
COUPLED	1
GND	2
NOT USED*	5,6
DEMO BOARD	TB-102 (50 ohms) TB-103 (75 ohms)

\* pins 5&6 must be isolated

designers kits available

KIT No.	No. of Units in KIT	Description	Price \$ per KIT
K1-DBTC	25	5 of each: DBTC-9-4, DBTC-12-4 DBTC-13-4, DBTC-17-5, DBTC-20-4	49.95
K2-DBTC	20	5 of each: DBTC-10-4-75, DBTC-13-5-75 DBTC-16-5-75, DBTC-18-4-75	39.95

REV. B  
M77388  
DBTC-9-4 ED-8958/1  
DBTC-10-4-75 ED-8953/1  
DBTC-12-4 ED-8954/1  
DBTC-13-4 ED-8955/1  
DBTC-13-5-75 ED-8967/1  
DBTC-16-5-75 ED-8978/1  
DBTC-17-5 ED-8785A/1  
DBTC-18-4-75 ED-8956/1  
DBTC-20-4 ED-8957/1  
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