

Surface Mount Directional Couplers

50Ω

20 to 1000 MHz

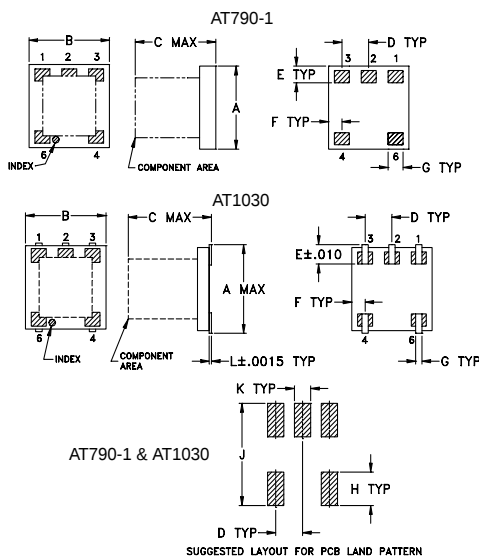
Maximum Ratings

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

Pin Connections

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

Outline Drawing



Outline Dimensions (inch/mm)

AT790-1	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	.10

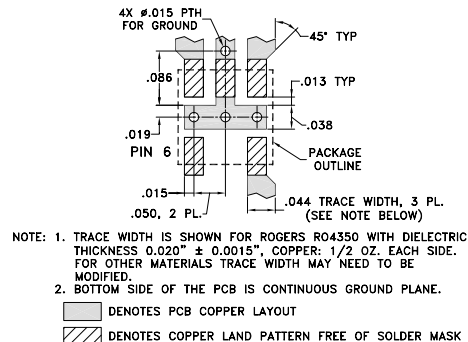
AT1030	A	B	C	D	E	F	G	H	J	K	L	wt.
	.166	.150	.155	.050	.037	.025	.012	.060	.184	.030	.004	grams
	4.22	3.81	3.94	1.27	0.94	0.64	0.30	1.52	4.67	0.76	0.10	.10

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

Demo Board MCL P/N: TB-278

Suggested PCB Layout (PL-150)



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 patent 6,140,887
- additional patent pending

Applications

- VHF/UHF receivers/transmitters
- cellular

NEW!
DBTC-20-4 DBTC-20-4L



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)

Directional Coupler Electrical Specifications

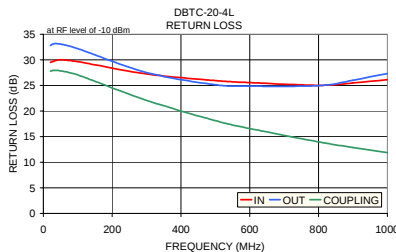
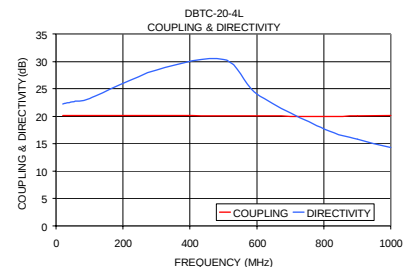
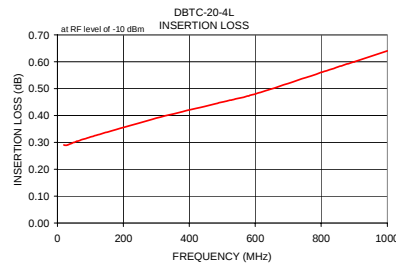
FREQ. RANGE (MHz)	COUPLING (dB)		MAINLINE LOSS* (dB)						DIRECTIVITY (dB)			VSWR** (:1)	POWER INPUT, W				
	f _L -f _U	Nom. Max. Flatness	L Typ.	1.0 Max.	0.4 Typ.	1.0 Max.	0.7 Typ.	1.3 Max.	L Typ. Min.	21 Typ. Min.	13 Typ. Min.		16 Typ. Min.	—	1.0 Max.	1.0 Max.	
20-1000	20.4±0.6	±0.8	0.3	1.0	0.4	1.0	0.7	1.3	21	13	21	14	16	—	1.20	1.0	1.0

* Includes theoretical coupled power loss of 0.04 dB at 20 dB coupling. 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]
** For coupled port VSWR above 500 MHz, 1.6:1 typ.

Typical Performance Data

Frequency (MHz)	Insertion Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
20.00	0.29	20.12	22.25	29.48	32.81	27.78
30.00	0.29	20.11	22.42	29.72	33.13	27.93
50.00	0.30	20.13	22.62	30.01	33.06	27.84
100.00	0.32	20.15	23.19	29.64	32.17	27.03
300.00	0.39	20.14	28.43	27.24	27.52	22.09
500.00	0.45	20.07	30.35	25.95	25.13	18.13
600.00	0.48	20.03	24.01	25.55	24.85	16.59
800.00	0.56	20.01	17.74	25.02	24.96	13.97
900.00	0.60	20.04	15.81	25.47	26.00	12.90
1000.00	0.64	20.10	14.29	26.13	27.33	11.90

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