

# Ceramic Balun RF Transformer

50Ω 680 to 1050 MHz

## TCN1-10+ TCN1-10



### Maximum Ratings

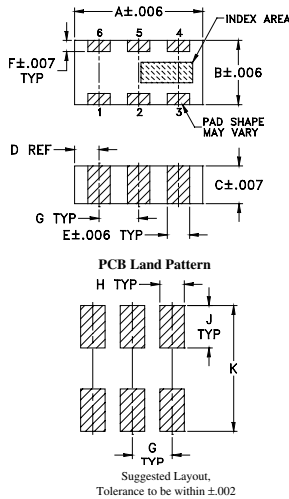
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Input RF Power**	5W

\*\* derate linearly to 2.5 W at 100°C

### Pin Connections

PRIMARY DOT	4
PRIMARY(GND)	2,5
SECONDARY DOT	1
SECONDARY	6
NOT USED	3

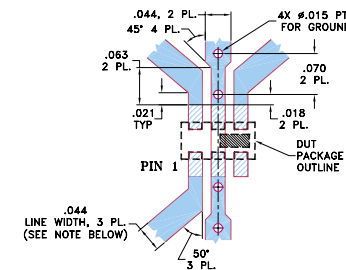
### Outline Drawing



### Outline Dimensions (Inch/mm)

A	B	C	D	E	F
.126	.063	.035	.024	.022	.011
3.20	1.60	0.89	0.61	0.56	0.28
G	H	J	K	wt	
.039	.024	.042	.123	grams	
0.99	0.61	1.07	3.12	.020	

### Demo Board MCL P/N: TB-287 Suggested PCB Layout (PL-163)



- NOTE:
- TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
  - 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

- wideband, 680 to 1050 MHz
- miniature size, 0.12"x.06"x.037"
- LTCC construction
- low cost
- aqueous washable

### Applications

- TDMA, CDMA
- GSM
- PDC
- WAN
- TACS
- AMPS, NAMPS

### Electrical Specifications (T<sub>AMB</sub>=25°C)

Ω RATIO	FREQUENCY (MHz)	INSERTION* LOSS (dB)	PHASE UNBALANCE † (Deg.) Typ.	AMPLITUDE UNBALANCE (dB) Typ.
1	680-1050	0.9	4.0	0.7
	800-900	0.7	1.0	0.25

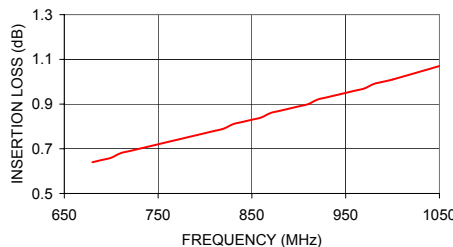
\* Insertion Loss is referenced to mid-band loss, 0.6 dB

† Relative to 180°

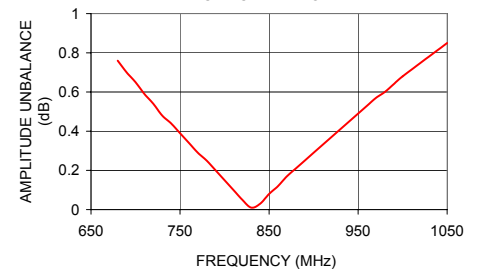
### Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
680.00	0.64	14.50	0.76	6.82
700.00	0.66	14.07	0.65	5.94
750.00	0.72	13.10	0.39	3.94
800.00	0.77	12.43	0.15	2.29
850.00	0.83	11.83	0.08	0.97
900.00	0.89	11.36	0.29	0.23
950.00	0.95	10.99	0.49	1.01
990.00	1.00	10.71	0.64	1.48
1000.00	1.01	10.64	0.68	1.54
1050.00	1.07	10.39	0.85	1.78

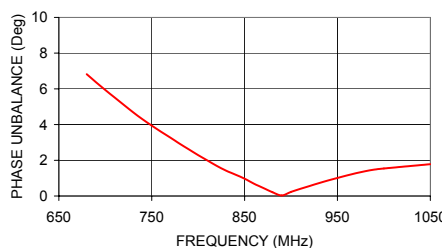
TCN1-10  
INSERTION LOSS



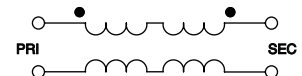
TCN1-10  
AMPLITUDE UNBALANCE



TCN1-10  
PHASE UNBALANCE



configuration G



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RF/IF MICROWAVE COMPONENTS

REV. B  
M102713  
TCN1-10  
ED-11687/1  
DJ/RS/CP/AM  
070724