Surface Mount

Bias-Tee

50Ω Wideband 50 to 6000 MHz

TCBT-6G+

CASE STYLE: GU1041
PRICE: $9.95 ea. QTY (10-49)

+ 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.

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	30dBm max.
Voltage at DC port	25V max.
Input Current	200mA

Permanent damage may occur if any of these limits are exceeded.

Pad Terminations

RF	4
RF&DC	3
DC	1
ISOLATE(see PCB Layout)	2

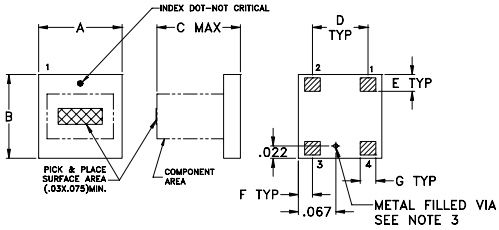
Features

- wideband, 50 to 6000 MHz
- low insertion loss, 0.7 dB typ.
- miniature surface mount 0.15"x0.15"
- protected by US Patent, 7,012,486
- aqueous washable

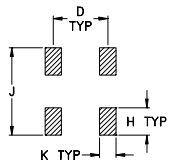
Applications

- biasing amplifiers
- biasing of laser diodes
- biasing of active antennas

Outline Drawing



PCB Land Pattern



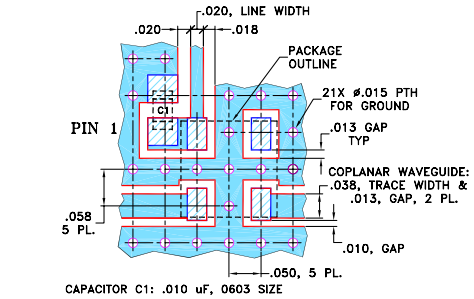
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.150	.150	.150	.100	.030	.025	.028
3.81	3.81	3.81	2.54	0.76	0.64	0.71

H	J	K	wt
.050	.160	.030	grams
1.27	4.06	0.76	0.10

Demo Board MCL P/N: TB-268
Suggested PCB Layout (PL-146)



CAPACITOR C1: .010 uF, 0603 SIZE

NOTE: 1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015". 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

Bias-Tee Electrical Specifications

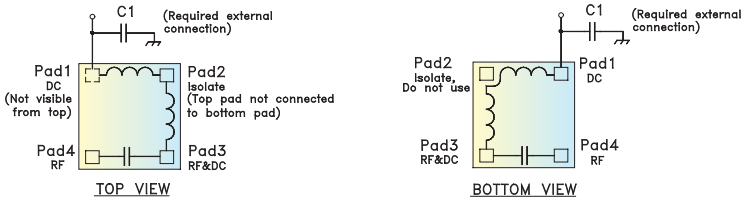
FREQUENCY (MHz)		INSERTION LOSS (dB)						ISOLATION (dB) (RF port to DC port) (RF&DC port to DC port)						VSWR (:1)					
		L		M		U		L		M		U		L		M		U	
f_L	f_U	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.
50	6000	0.2	0.8	0.7	1.8	1.1	2.5	52	38	28	18	19	17	1.05	1.5	1.1	1.3	1.2	2.2

L= 50-500 MHz M=500-3000 MHz U=3000-6000 MHz
External C1(0.01μF) is required. See functional schematic and PCB layout.

Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB) with current			VSWR (:1) with current		
	0mA	50mA	100mA	0mA	50mA	100mA
50.00	0.18	0.23	0.43	1.23	1.24	1.27
250.00	0.24	0.30	0.50	1.06	1.07	1.10
500.00	0.23	0.29	0.49	1.07	1.08	1.11
750.00	0.27	0.35	0.57	1.06	1.07	1.10
1000.00	0.30	0.39	0.63	1.05	1.05	1.08
1450.00	0.39	0.49	0.69	1.15	1.15	1.15
1900.00	0.61	0.70	0.81	1.04	1.04	1.03
2350.00	0.79	0.84	0.87	1.08	1.07	1.03
3250.00	0.91	1.02	1.14	1.09	1.09	1.11
3700.00	0.92	1.07	1.32	1.07	1.10	1.17
4150.00	0.62	0.79	1.26	1.28	1.28	1.34
4600.00	0.91	1.05	1.48	1.06	1.07	1.20
5050.00	0.84	0.96	1.21	1.34	1.38	1.48
5500.00	0.92	1.04	1.23	1.34	1.30	1.25
6400.00	0.83	0.96	1.25	1.74	1.70	1.51

Functional Schematic



For detailed performance specs & shopping online see web site

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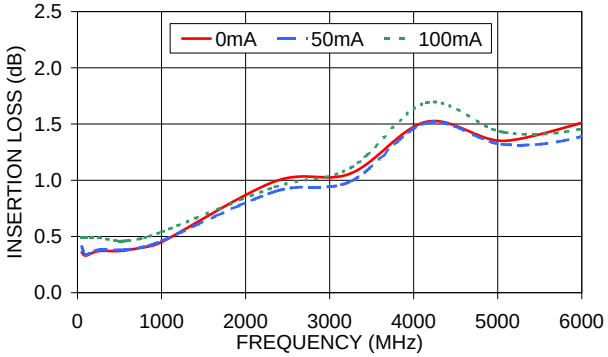
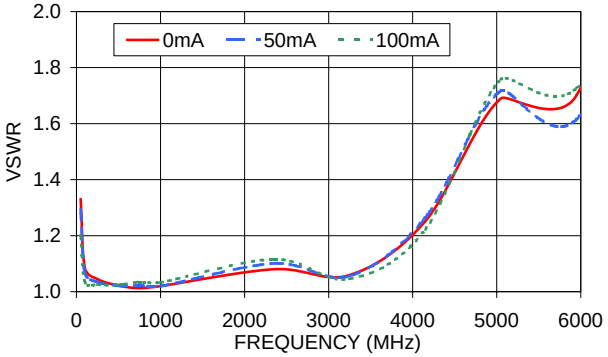
IF/RF MICROWAVE COMPONENTS

REV. D
M108294
ED-11250/1
TCBT-6G+
DJ/RS/AM
090729

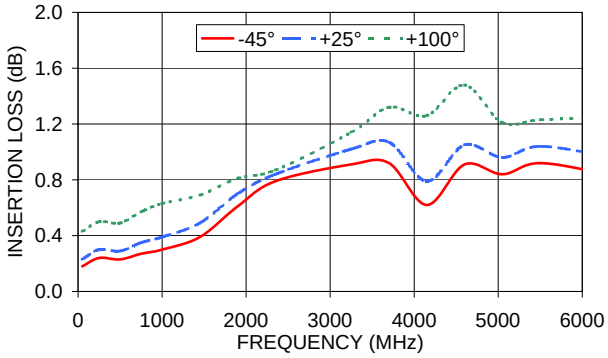
TCBT-6G+
INSERTION LOSS vs. CURRENT



TCBT-6G+
VSWR vs. CURRENT



TCBT-6G+
INSERTION LOSS vs. TEMPERATURE



TCBT-6G+
VSWR vs. TEMPERATURE