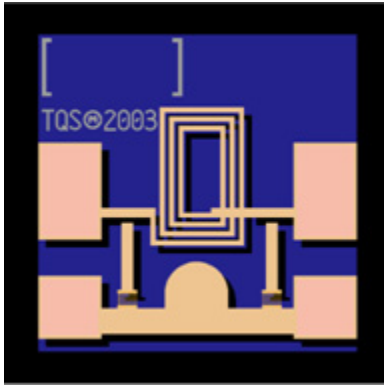


# Bessel Filter

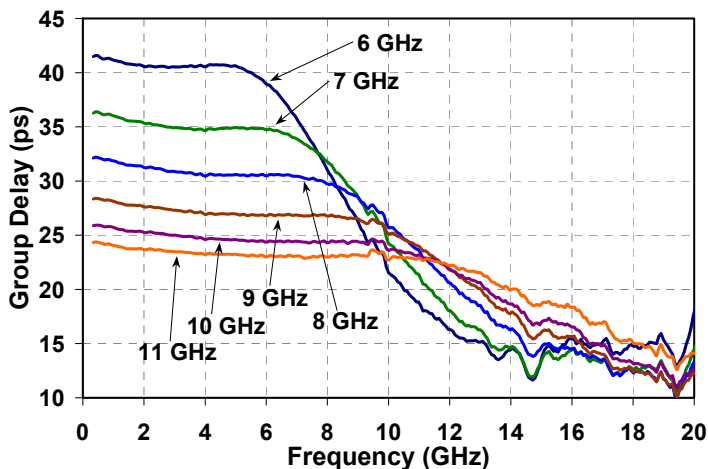
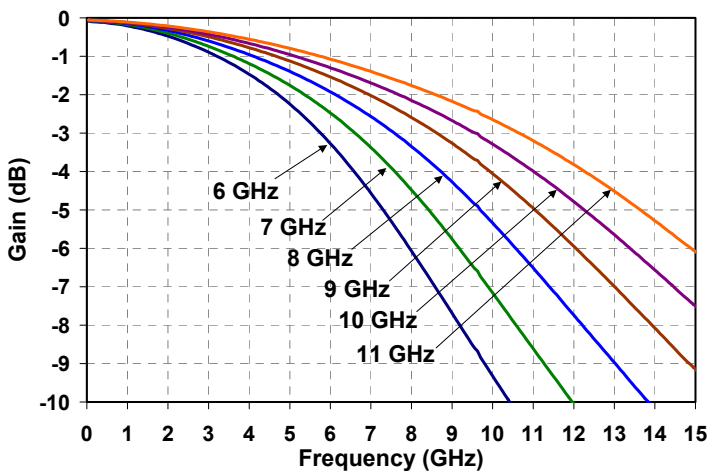
# TGB2010



## Key Features and Performance

- 6, 7, 8, 9, 10 & 11 GHz Filters
- $<\pm 1.25\text{ps}$  Group Delay to  $F_0$
- $>15\text{dB}$  Return Loss to  $2F_0$
- Filter Bandwidth  $\pm 0.5\text{ GHz}$
- 3MI Technology
- Chip Dimensions:  
0.49 x 0.49 x 0.10 mm  
(0.019 x 0.019 x 0.004 inches)

## Preliminary Measured Performance



Note: Datasheet is subject to change without notice.

**TABLE I**  
**MAXIMUM RATINGS**

Symbol	Parameter	Value	Notes
P <sub>IN</sub>	Input Continuous Wave Power	TBD	<u>1/</u>
T <sub>M</sub>	Mounting Temperature (30 Seconds)	320 °C	
T <sub>STG</sub>	Storage Temperature	-65 to 150 °C	

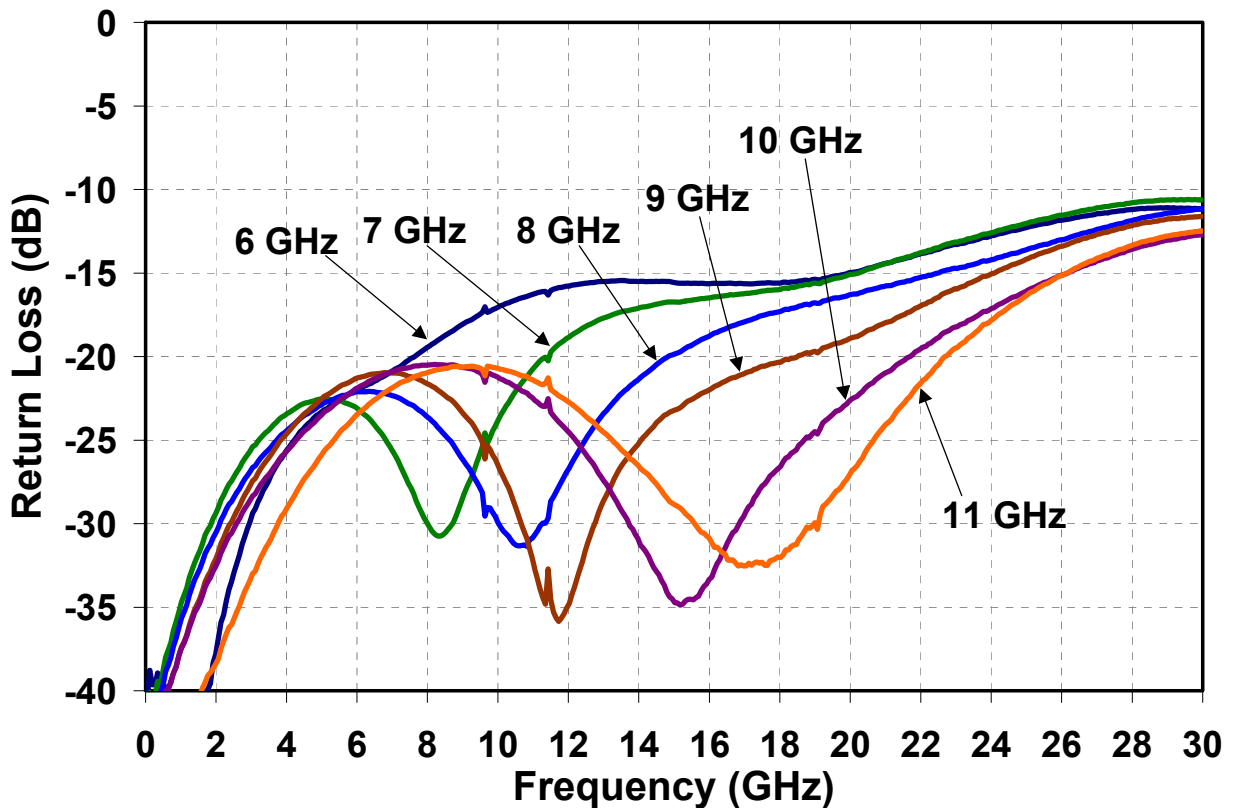
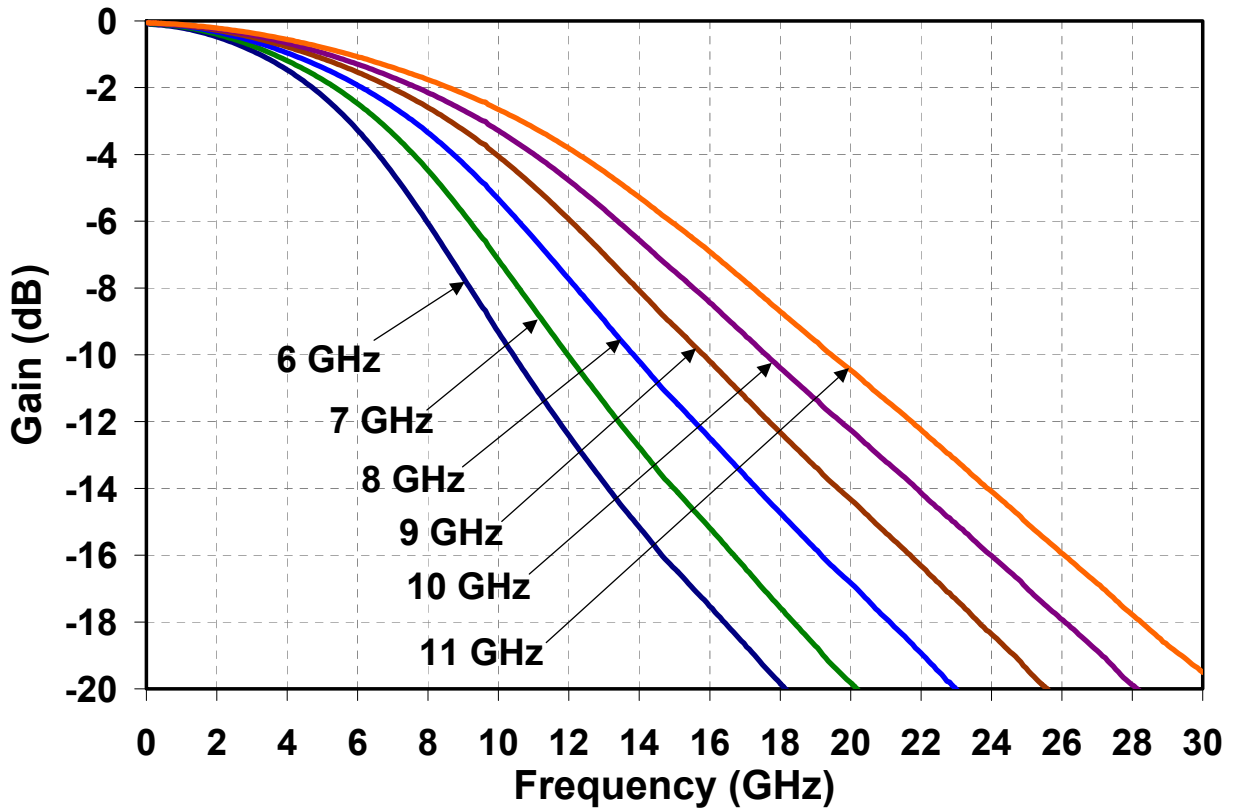
1/ These ratings represent the maximum operable values for this device

**TABLE II**  
**PART NUMBER DESIGNATIONS**

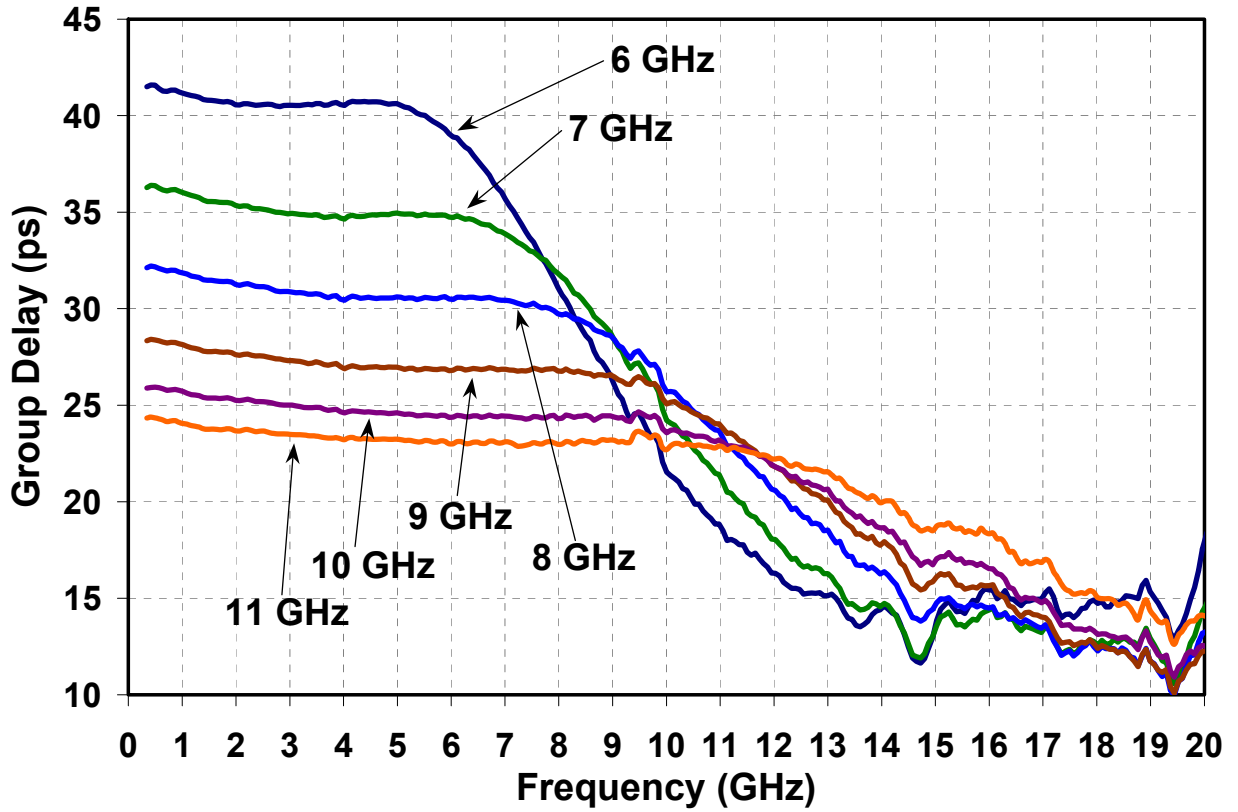
Part No	Cutoff Frequency
TGB2010-00	Thru
TGB2010-06	6 ± 0.5 GHz
TGB2010-07	7 ± 0.5 GHz
TGB2010-08	8 ± 0.5 GHz
TGB2010-09	9 ± 0.5 GHz
TGB2010-10	10 ± 0.5 GHz
TGB2010-11	11 ± 0.5 GHz

**Measured Performance**

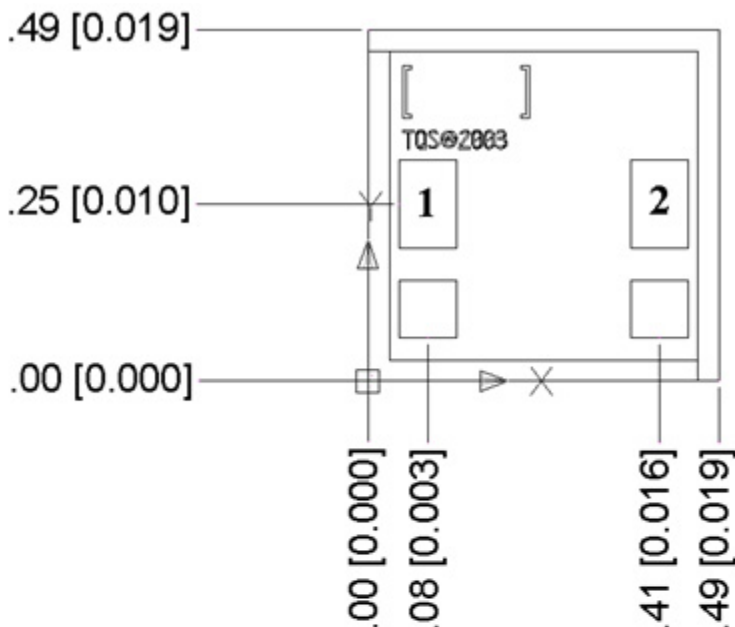
**TGB2010**



### Measured Performance



**Mechanical Drawing**



Units: millimeters [inches]

Thickness: 0.10 [0.004] (reference only)

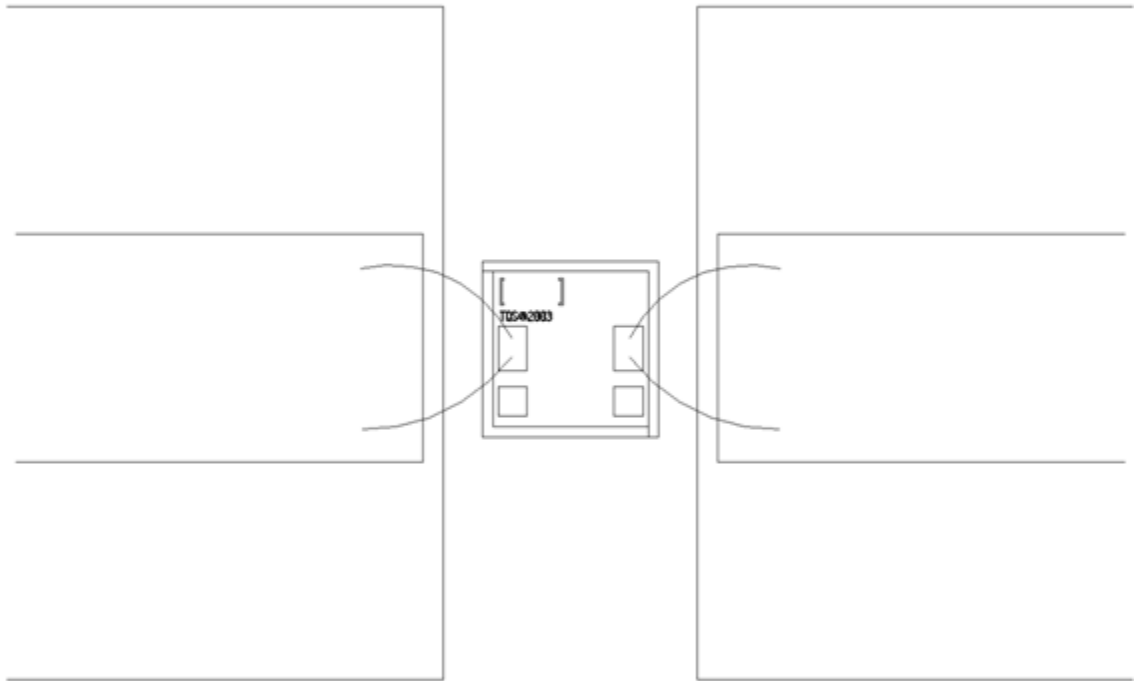
Chip edge to bond pad dimensions are shown to center of bond pads.

Chip size tolerance:  $\pm 0.05$  [0.002]

RF ground through backside

Bond Pad #1	RF Input	0.08 x 0.13	[0.003 x 0.005]
Bond Pad #2	RF Output	0.08 x 0.13	[0.003 x 0.005]

**Assembly Drawing**



## **Assembly Process Notes**

Reflow process assembly notes:

- Use AuSn (80/20) solder with limited exposure to temperatures at or above 300°C. (30 seconds maximum)
- An alloy station or conveyor furnace with reducing atmosphere should be used.
- No fluxes should be utilized.
- Coefficient of thermal expansion matching is critical for long-term reliability.
- Devices must be stored in a dry nitrogen atmosphere.

Component placement and adhesive attachment assembly notes:

- Vacuum pencils and/or vacuum collets are the preferred method of pick up.
- Air bridges must be avoided during placement.
- The force impact is critical during auto placement.
- Organic attachment can be used in low-power applications.
- Curing should be done in a convection oven; proper exhaust is a safety concern.
- Microwave or radiant curing should not be used because of differential heating.
- Coefficient of thermal expansion matching is critical.

Interconnect process assembly notes:

- Thermosonic ball bonding is the preferred interconnect technique.
- Force, time, and ultrasonics are critical parameters.
- Aluminum wire should not be used.
- Maximum stage temperature is 200°C.

***GaAs MMIC devices are susceptible to damage from Electrostatic Discharge. Proper precautions should be observed during handling, assembly and test.***