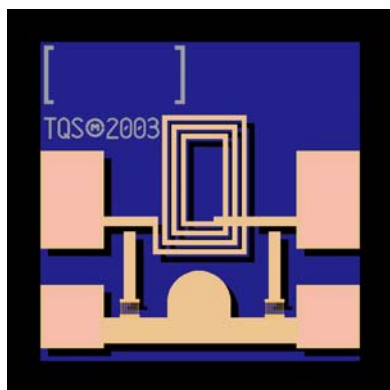


## Bessel Filter

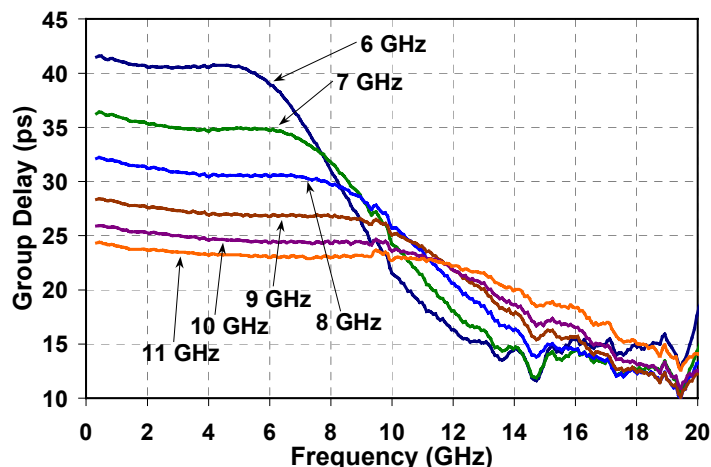
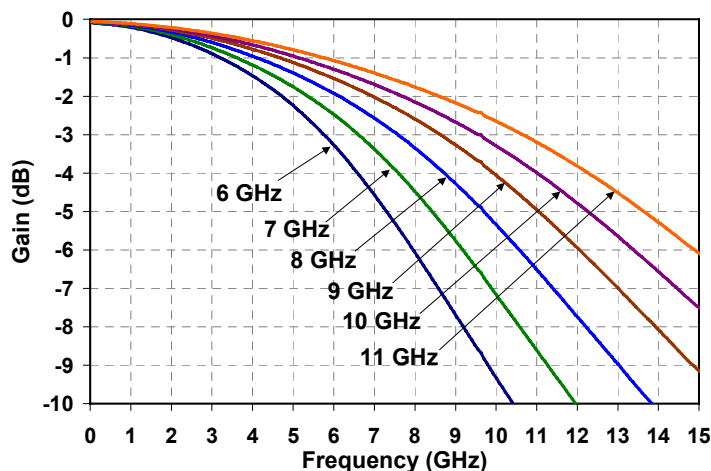
## TGB2010-EPU



### Key Features and Performance

- 6, 7, 8, 9, 10 & 11 GHz Filters
- $< \pm 1.25$ ps Group Delay to  $F_o$
- $> 15$ dB Return Loss to  $2F_o$
- Filter Bandwidth  $\pm 0.5$  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: Devices designated as EPU are typically early in their characterization process prior to finalizing all electrical and process specifications. Specifications are 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<br>(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

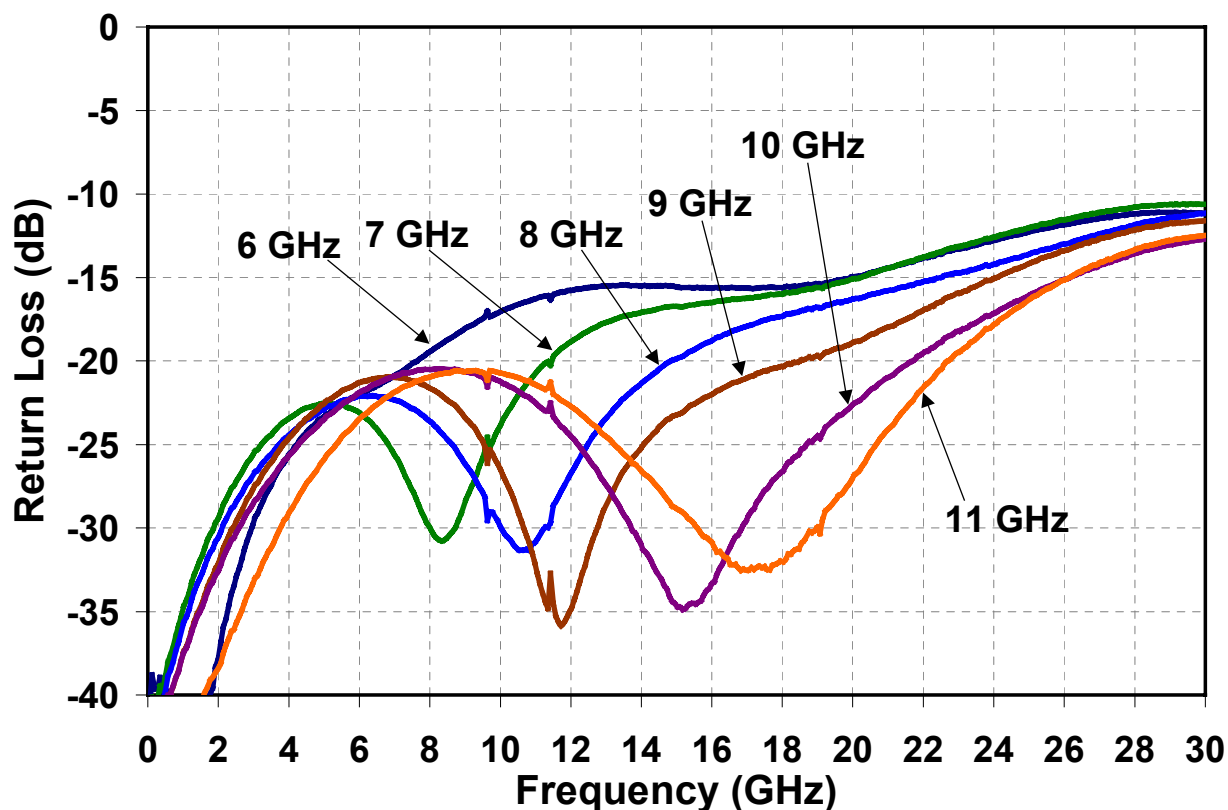
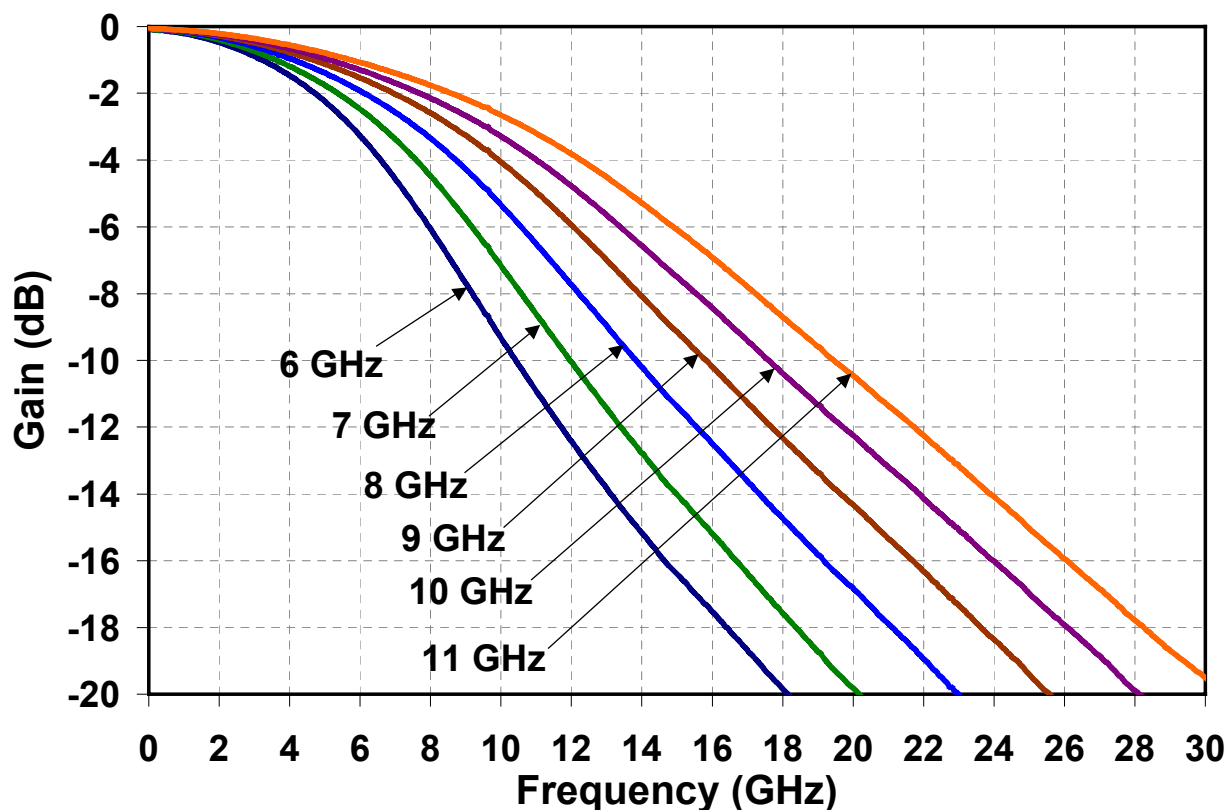
**TABLE II**  
**PART NUMBER DESIGNATIONS**

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

*Note: Devices designated as EPU are typically early in their characterization process prior to finalizing all electrical and process specifications. Specifications are subject to change without notice.*

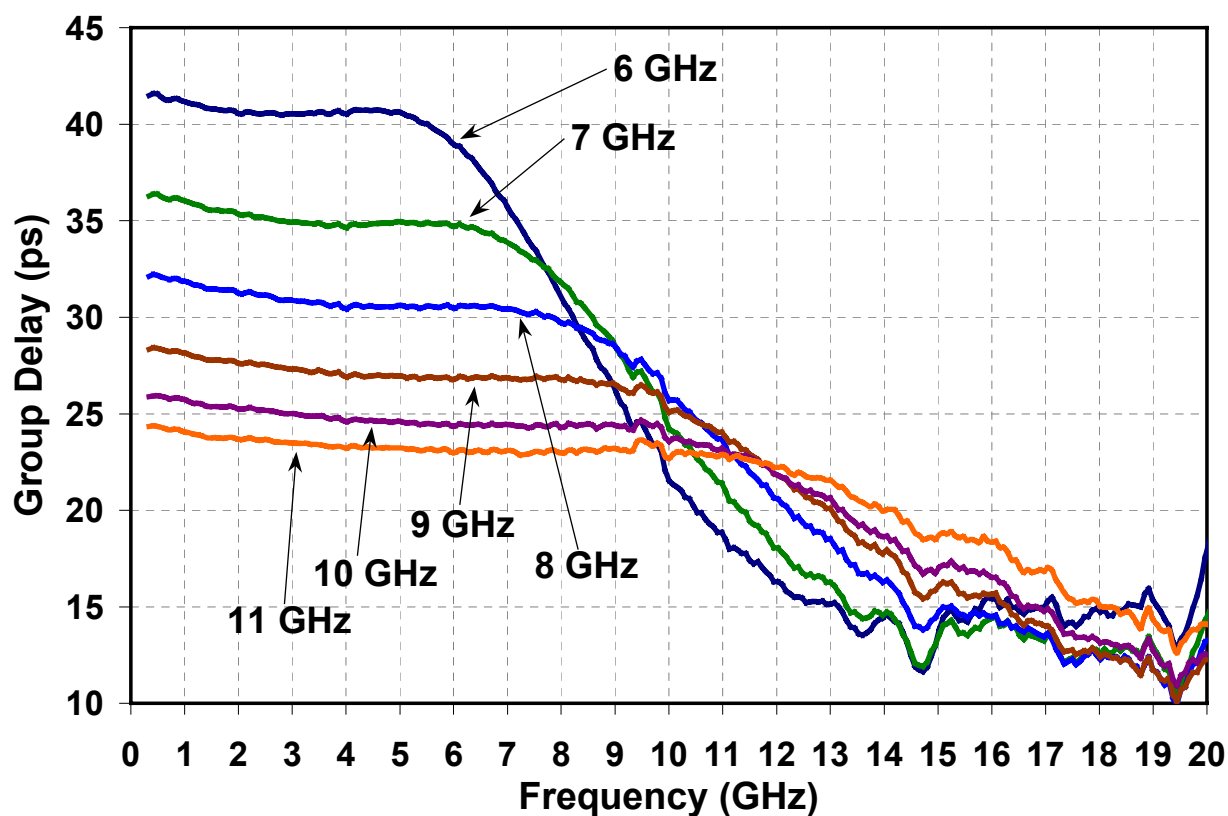
## Measured Performance

**TGB2010-EPU**



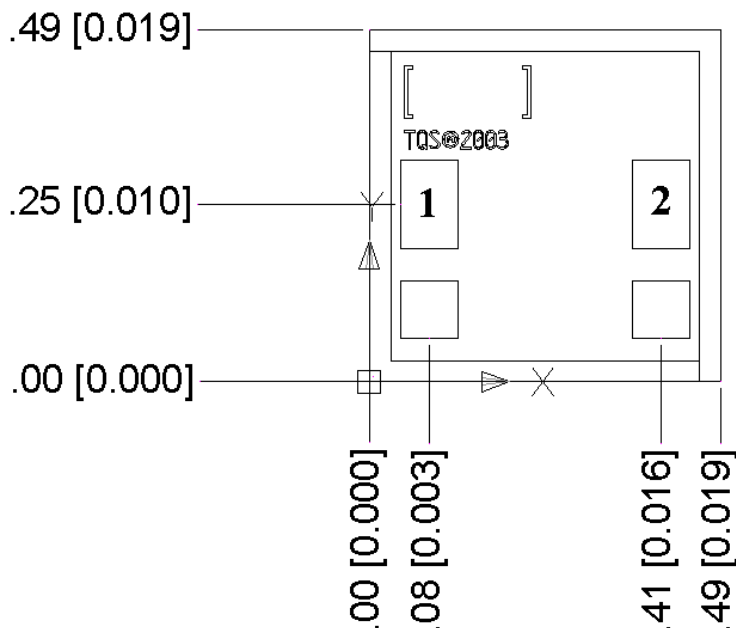
Note: Devices designated as EPU are typically early in their characterization process prior to finalizing all electrical and process specifications. Specifications are subject to change without notice.

## Measured Performance



*Note: Devices designated as EPU are typically early in their characterization process prior to finalizing all electrical and process specifications. Specifications are subject to change without notice.*

## 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.

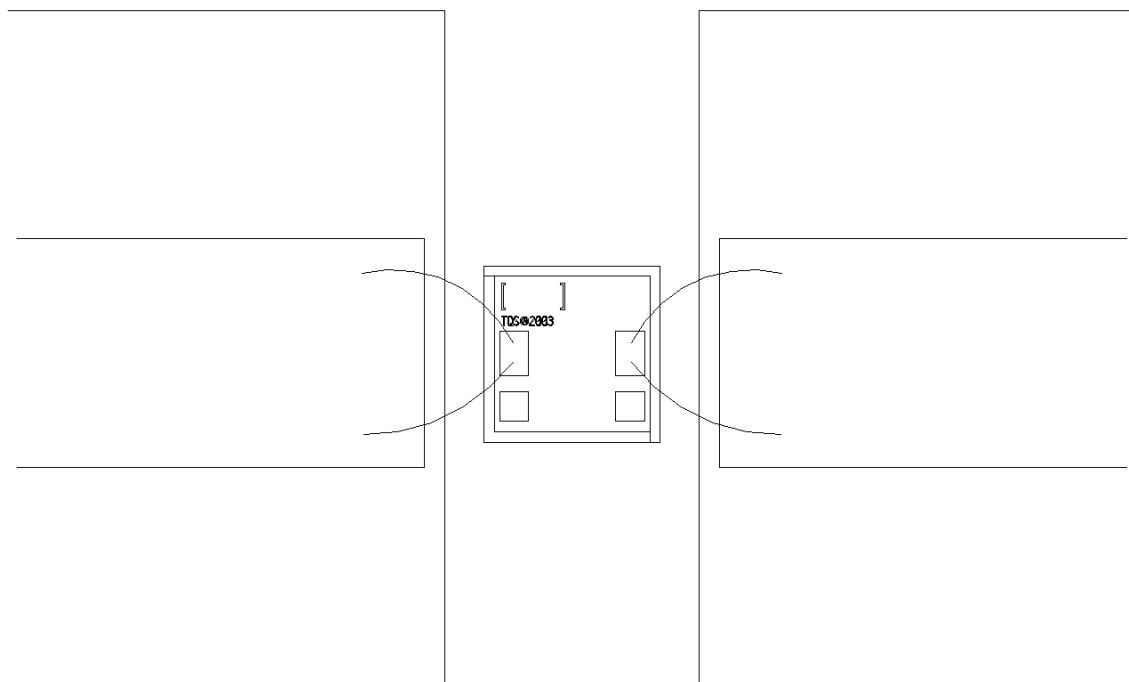
Chip size tolerance:  $\pm 0.05$  [0.002]

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] |

*Note: Devices designated as EPU are typically early in their characterization process prior to finalizing all electrical and process specifications. Specifications are subject to change without notice.*

## Assembly Drawing



*Note: Devices designated as EPU are typically early in their characterization process prior to finalizing all electrical and process specifications. Specifications are subject to change without notice.*

## **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.***

*Note: Devices designated as EPU are typically early in their characterization process prior to finalizing all electrical and process specifications. Specifications are subject to change without notice.*