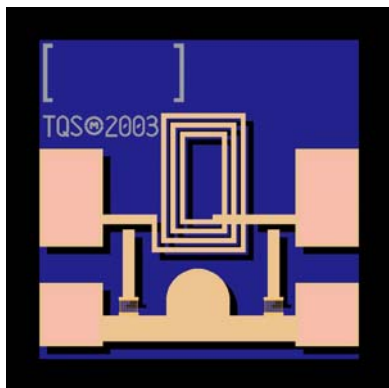


Bessel Filter

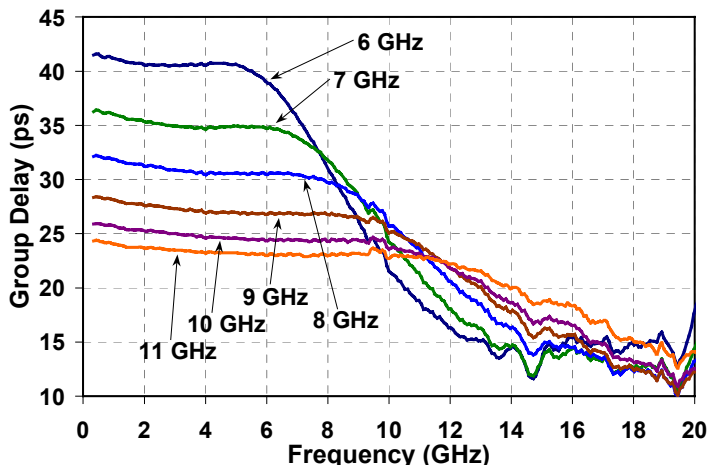
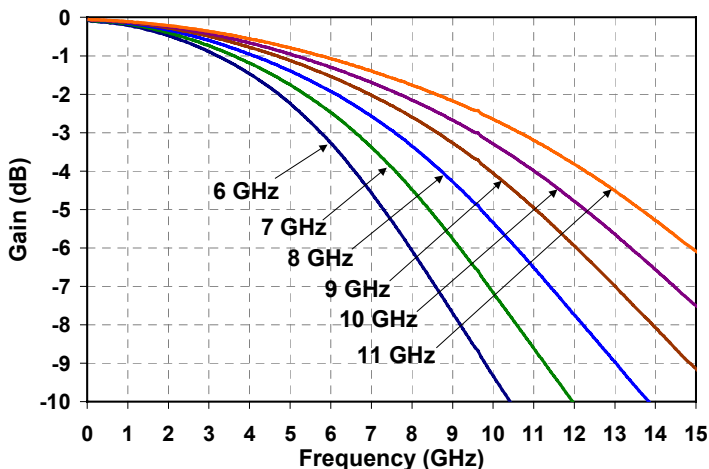
TGB2010-EPU



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 ± 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 _{IN}	Input Continuous Wave Power	TBD	<u>1/</u>
T _M	Mounting Temperature (30 Seconds)	320 °C	
T _{STG}	Storage Temperature	-65 to 150 °C	

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

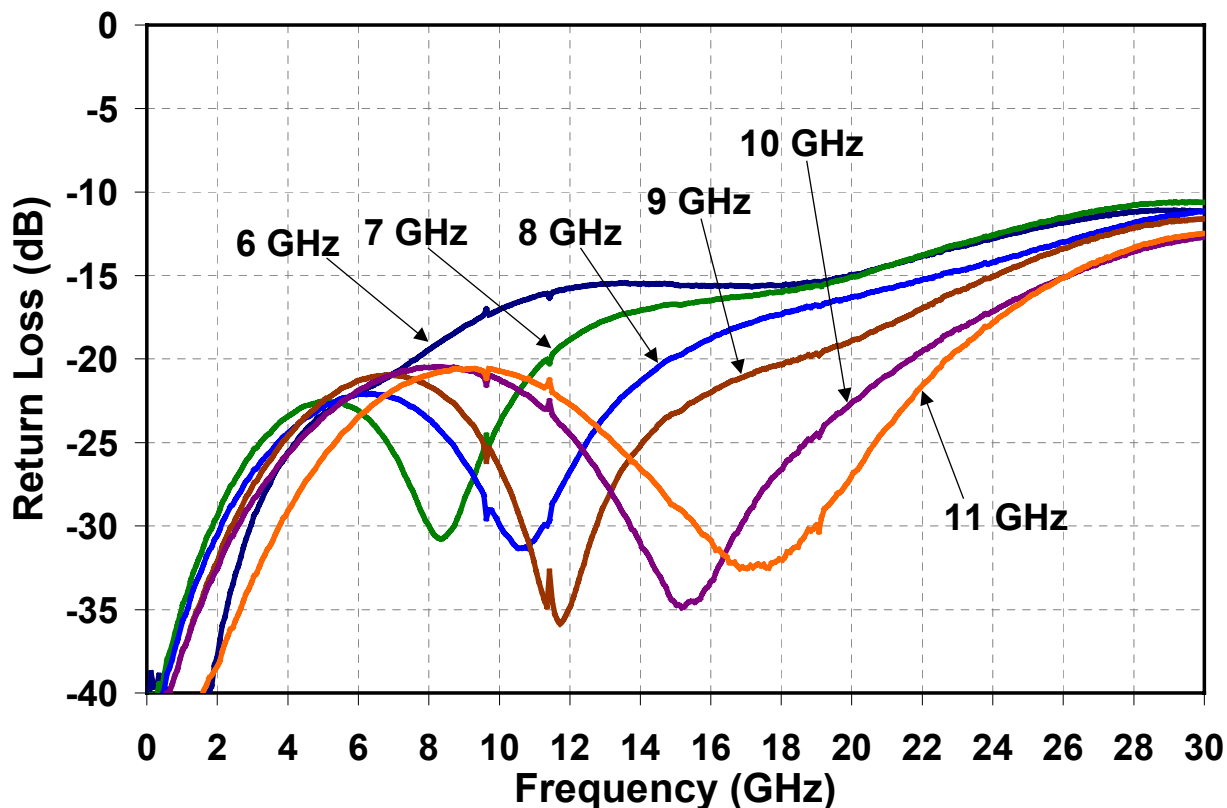
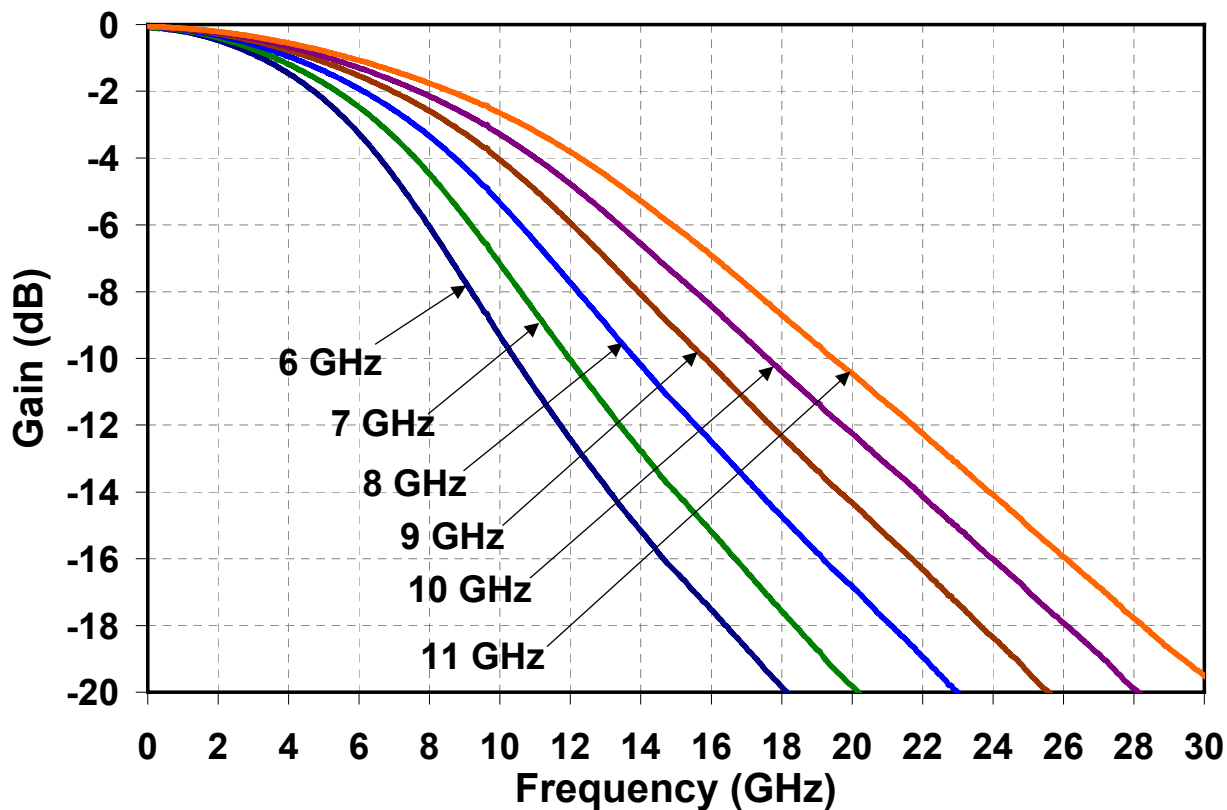
**TABLE II
PART NUMBER DESIGNATIONS**

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.

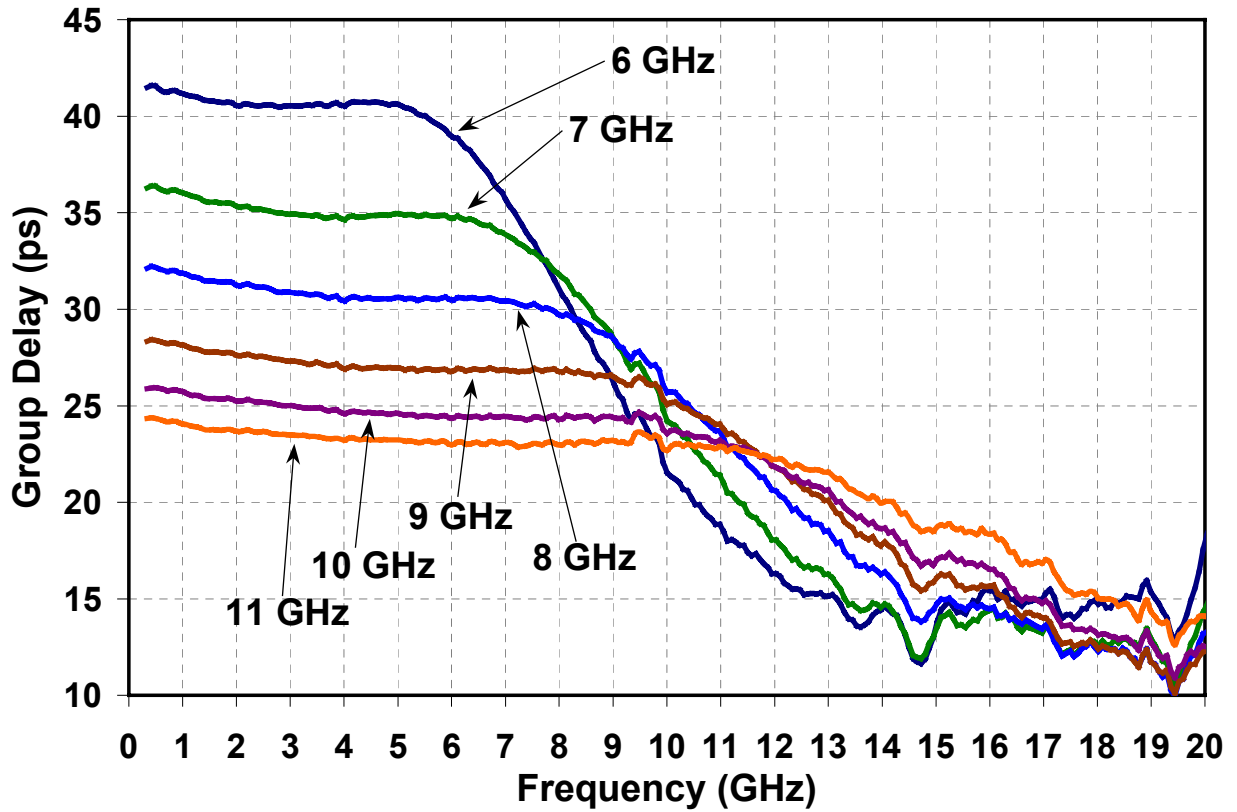
Measured Performance

TGB2010-EPU



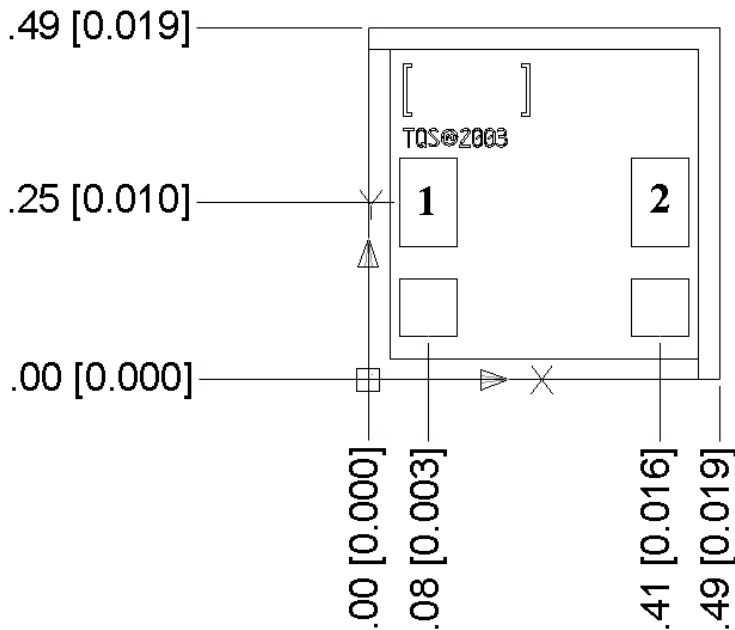
Note: Devices designated as EPU are typically early in their characterization process prior to finalizing all electrical and process specifications. Specifications are subject to change without notice.

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.

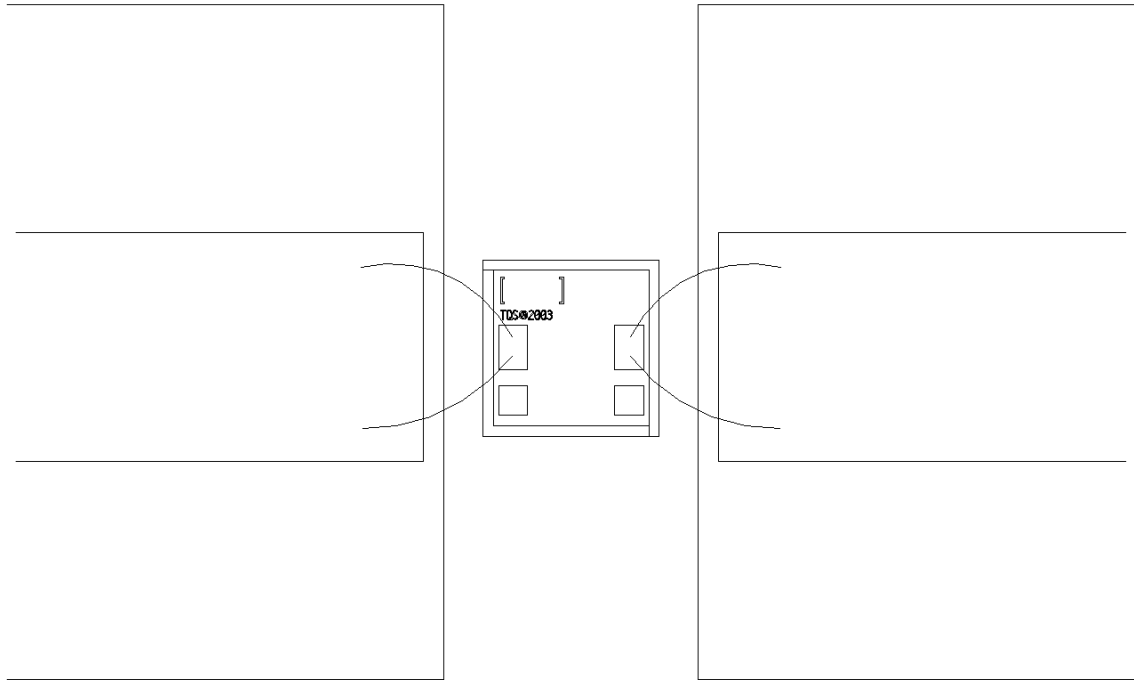
Chip size tolerance: ± 0.05 [0.002]

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.