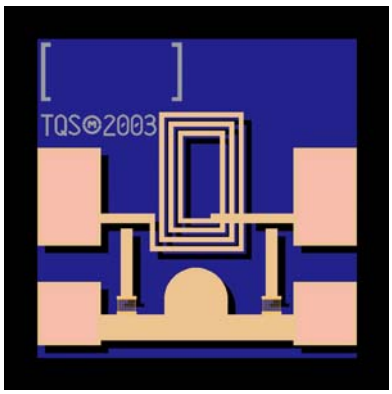
Bessel Filter

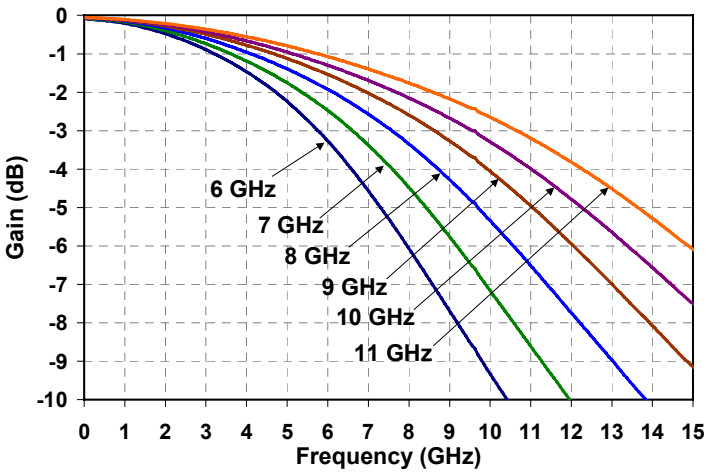
TGB2010-EPU

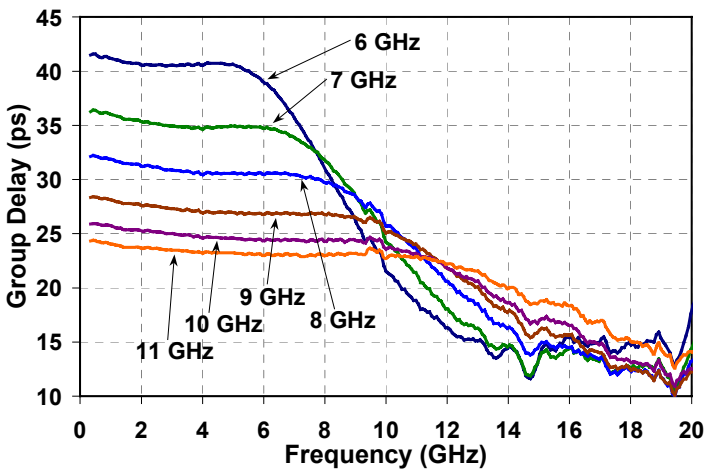


Key Features and Performance

- 6, 7, 8, 9, 10 & 11 GHz Filters
- <±1.25ps Group Delay to F_o
- >15dB 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.

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TABLE I
MAXIMUM RATINGS

Symbol	Parameter	Value	Notes
P_{IN}	Input Continuous Wave Power	TBD	1/
T_M	Mounting Temperature (30 Seconds)	320 ^{0}C	
T_{STG}	Storage Temperature	-65 to 150 ^{0}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

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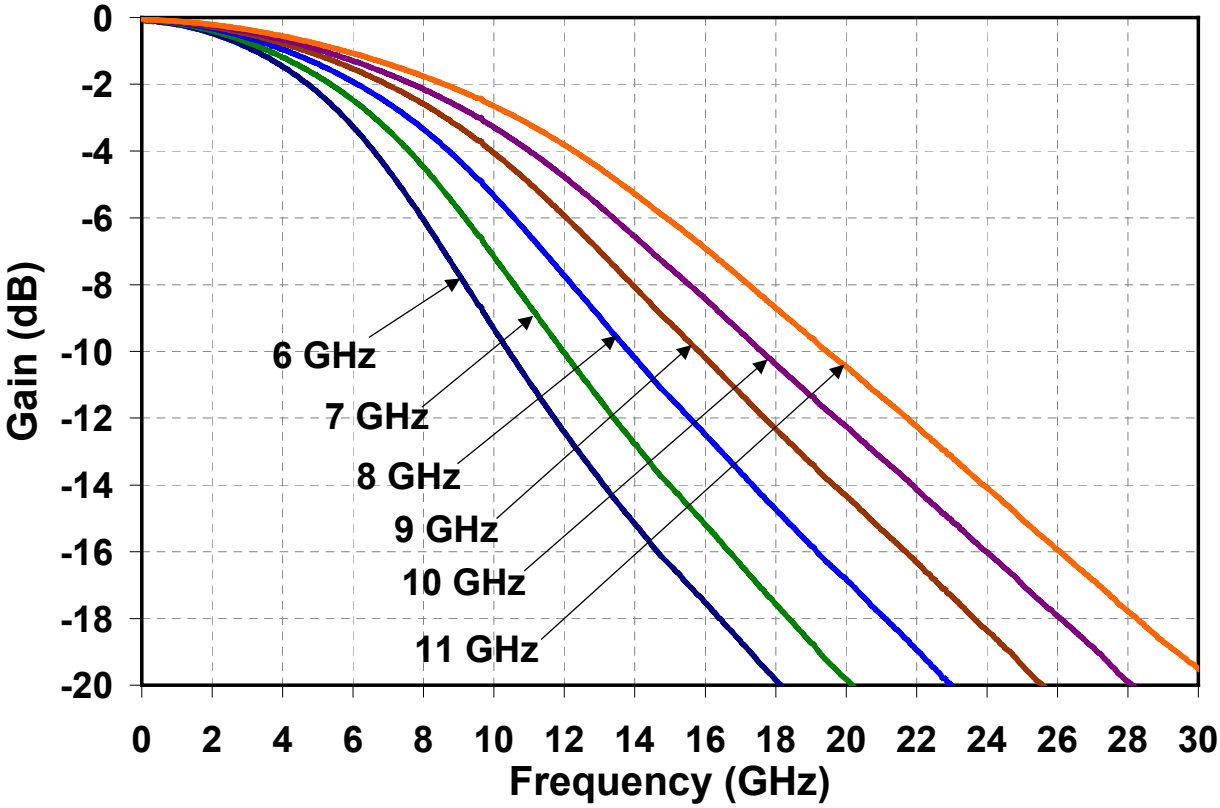
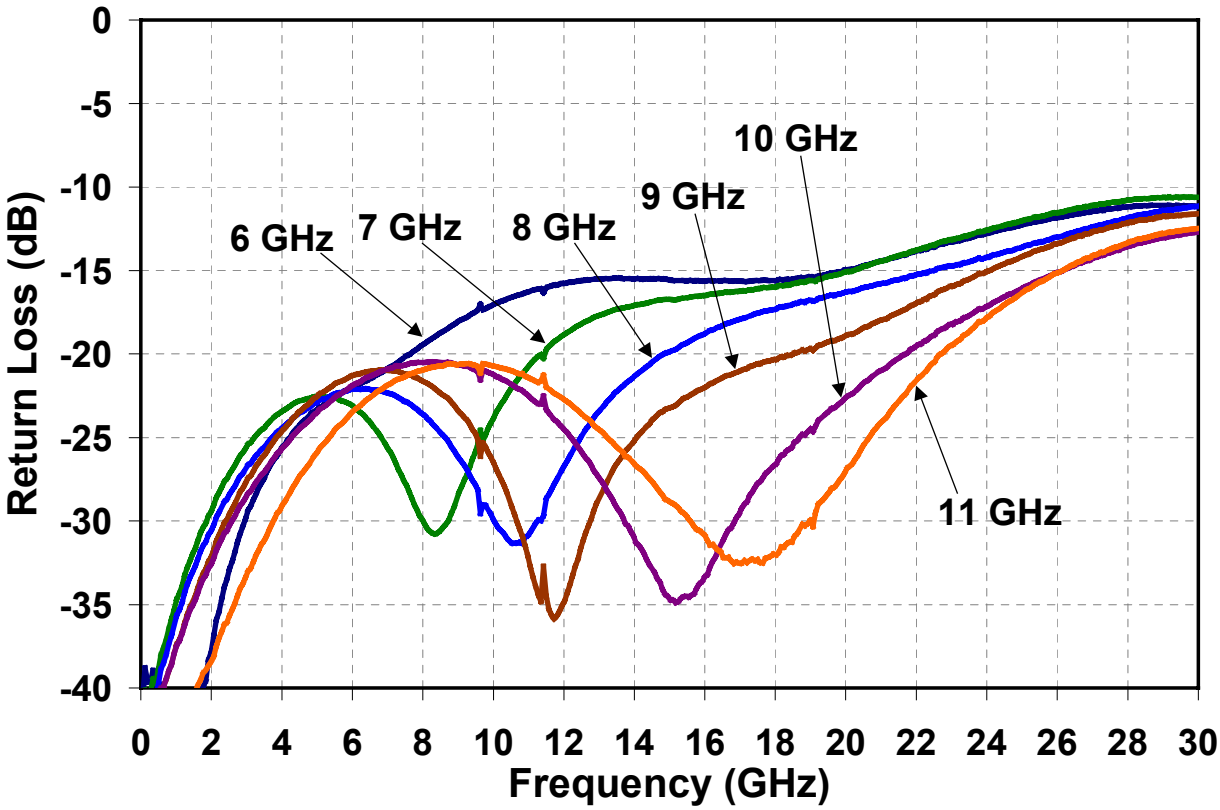
Measured Performance





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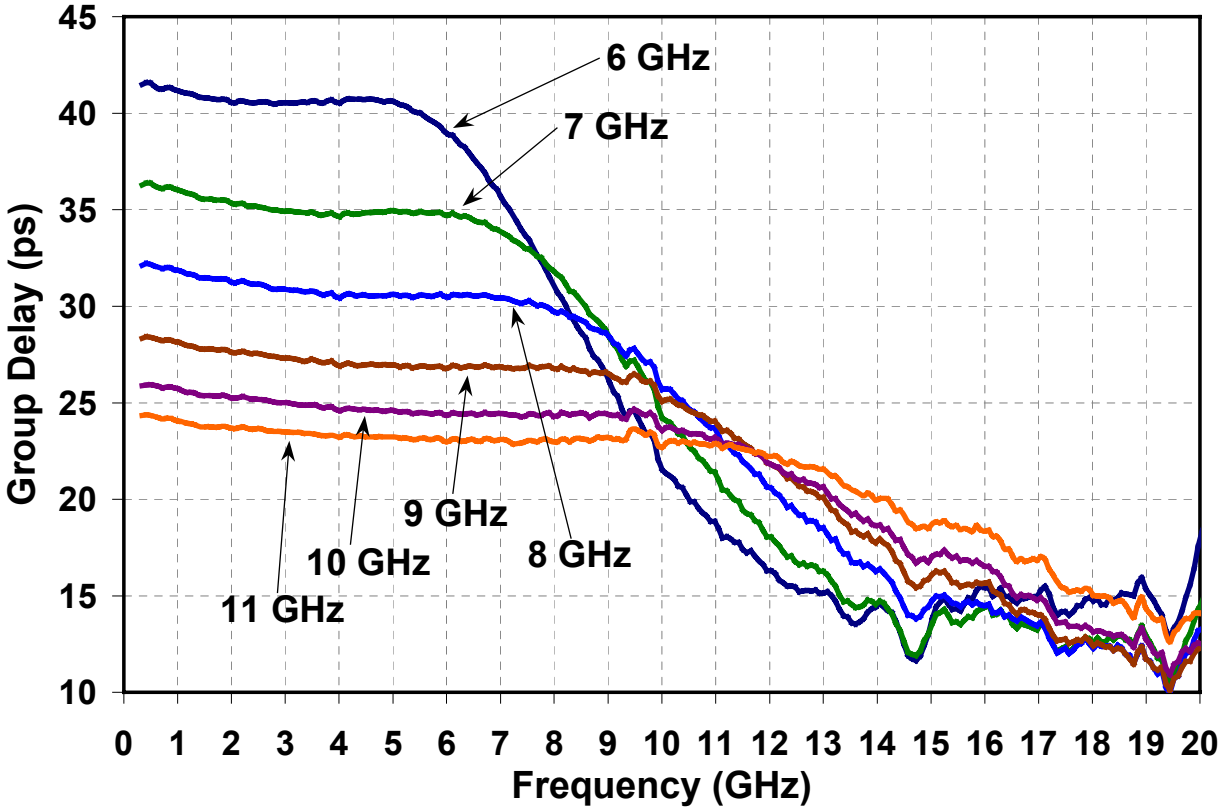
Measured Performance



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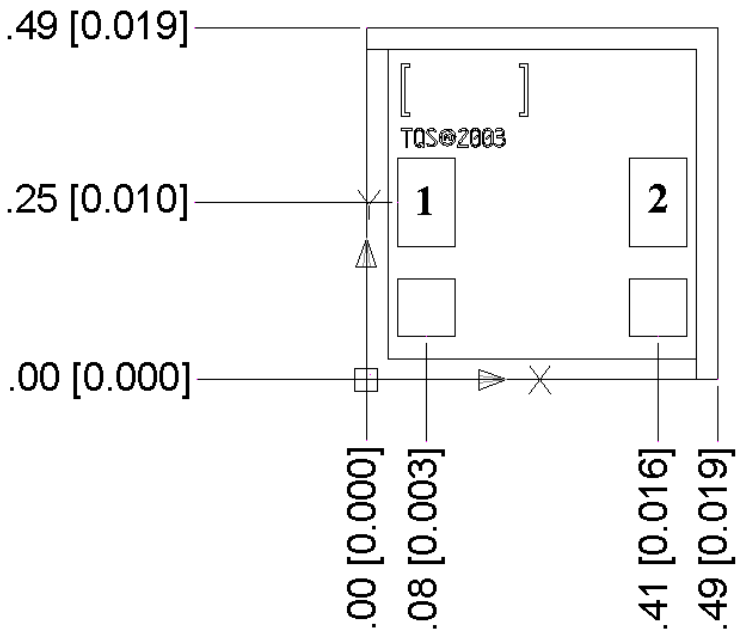
Mechanical Drawing

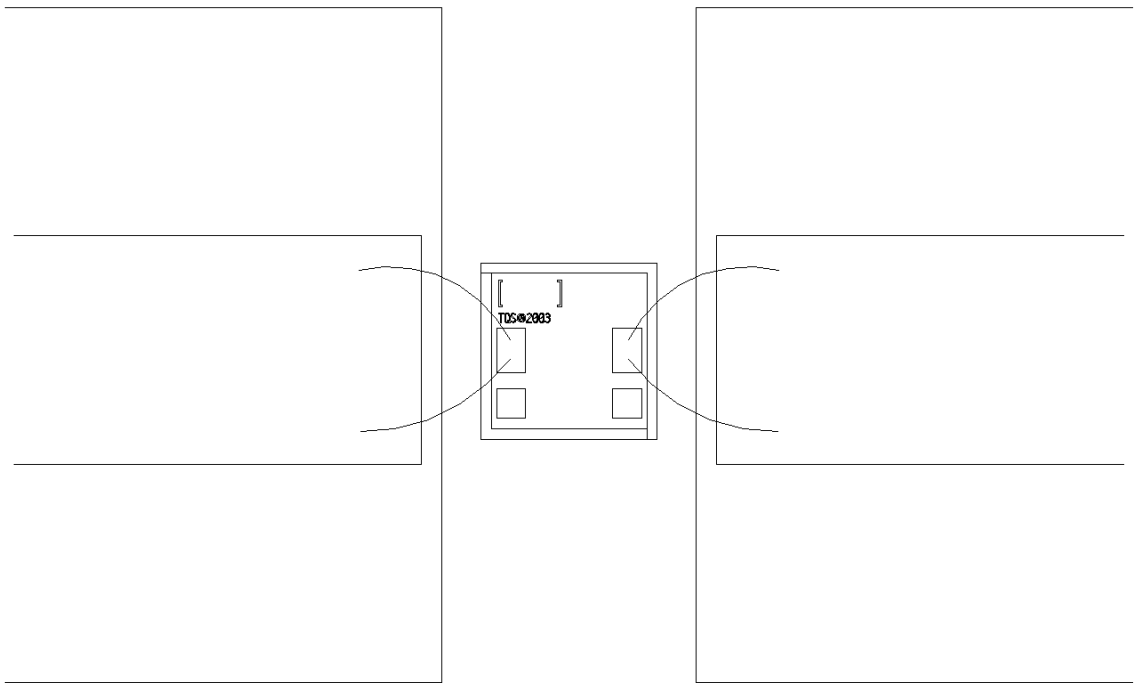


Units: millimeters [inches]
Thickness: 0.10 [0.004] (reference only)
Chip edge to bond pad dimensions are shown to center of bond pads.
Chip size tolerance: ±0.05 [0.002]
RF ground through backside

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



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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.

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