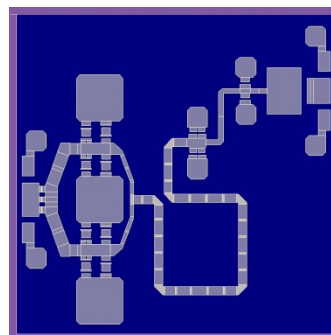


Applications

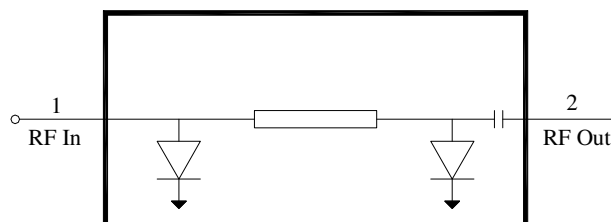
- Receive Chain Protection
- Commercial and Military Radar



Product Features

- Frequency Range: 1 to 6 GHz
- Insertion Loss: < 0.5 dB
- Peak Power Handling: 100W (pulsed)
- Flat Leakage: ≤ 16 dBm
- Return Loss: 12 dB
- Passive (no DC bias required)
- Integrated DC Block on output
- Chip Dimensions: 2.0 x 2.0 x 0.1 mm

Functional Block Diagram



General Description

The TriQuint TGL2205 is a high power, wideband MMIC GaAs VPIN limiter capable of protecting sensitive receive channel components against high power incident signals. The TGL2205 does not require DC bias and achieves a low insertion loss all in a small form factor. These features allow for simple integration with minimal impact to system performance.

The TGL2205 operates from 1 to 6 GHz and achieves low insertion loss of 0.5 dB and return loss of 12 dB. It can limit up to 100 W incident pulsed-power with a low flat leakage of 16 dBm.

The TGL2205 has a protective surface passivation layer providing environmental robustness and is ideally suited to support both commercial and defense related applications.

Lead-free and RoHS compliant.

Pad Configuration

Pad No.	Symbol
1	RF In
2	RF Out

Ordering Information

Part	ECCN	Description
TGL2205	EAR99	S and C-Band 100W VPIN Limiter

Absolute Maximum Ratings

Parameter	Value
Incident Power, CW or Pulsed, 50Ω, 25C	100W
Incident Power, CW or Pulsed, 50Ω, 85C	50W
Mounting Temperature (30 Seconds)	320C
Storage Temperature	-40 to 150C

Operation of this device outside the parameter ranges given above may cause permanent damage. These are stress ratings only, and functional operation of the device at these conditions is not implied.

Recommended Operating Conditions

Parameter	Value
Passive – No bias	
Electrical specifications are measured at specified test conditions. Specifications are not guaranteed over all recommended operating conditions.	

Electrical Specifications

Test conditions unless otherwise noted: T = 25 °C

Parameter	Conditions	Min	Typ	Max	Units
Operational Frequency Range		1		6	GHz
Insertion Loss			< 0.5		dB
Input Return Loss			12		dB
Output Return Loss			12		dB
Flat Leakage Power at P _{IN} > 30 dBm			≤ 16		dBm
Insertion Loss Temperature Coefficient			0.003		dB/°C

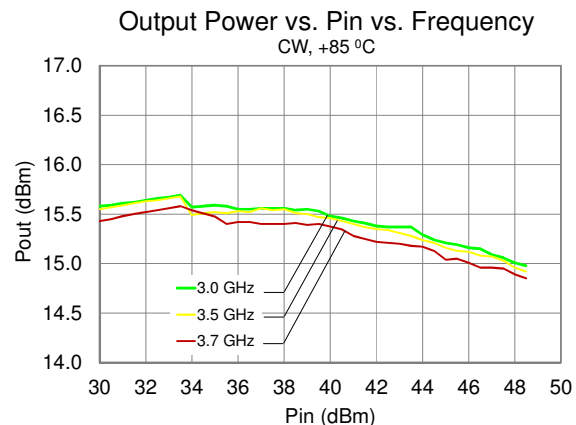
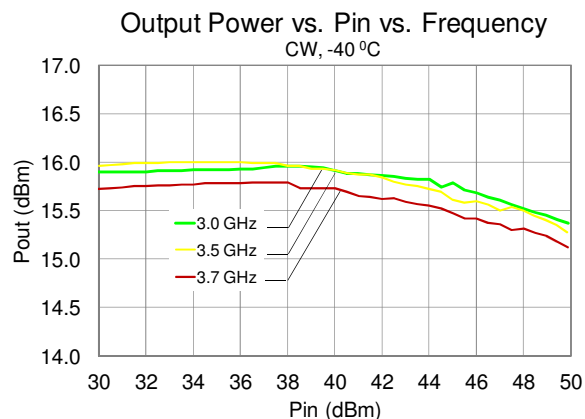
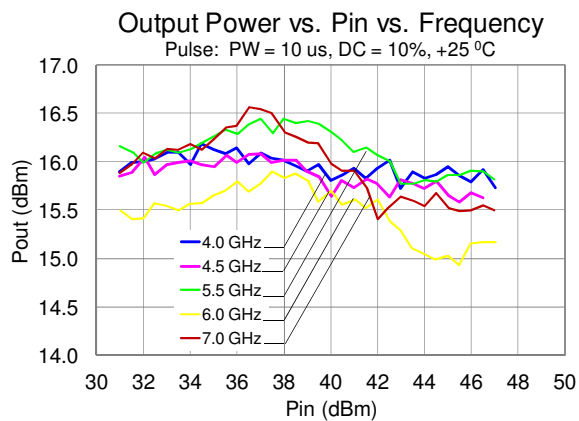
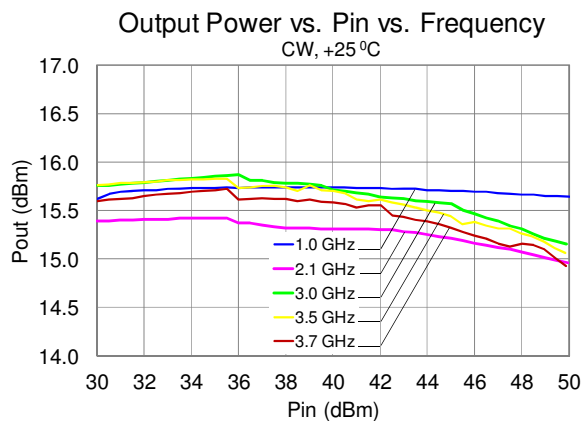
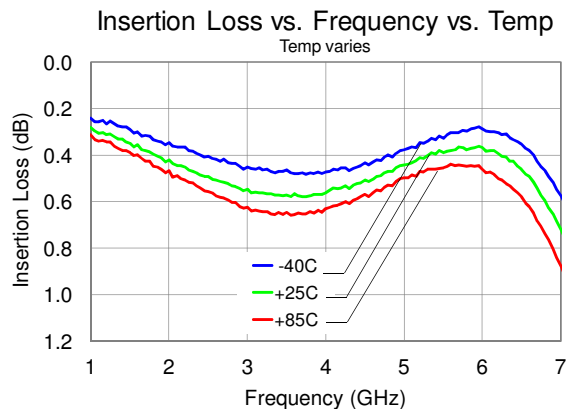
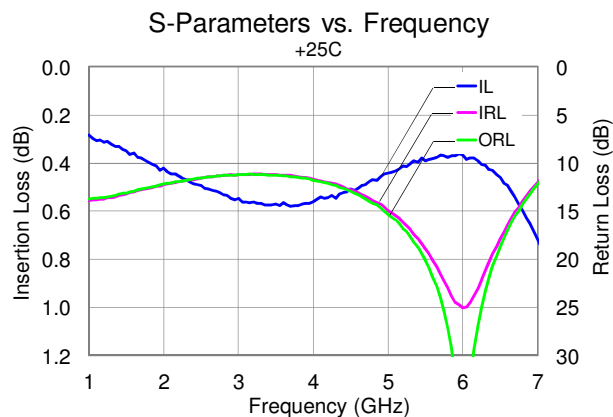
Thermal and Reliability Information

Parameter	Test Conditions	Value	Units
Incident Power	Frequency = 4.5 GHz, CW, 50Ω, 25C	31	W
(RF Operational Life Test 168 Hours ⁽¹⁾)	Frequency = 4.5 GHz, Pulsed, PW=10us, DC=10%, 50Ω, 25C	100	W

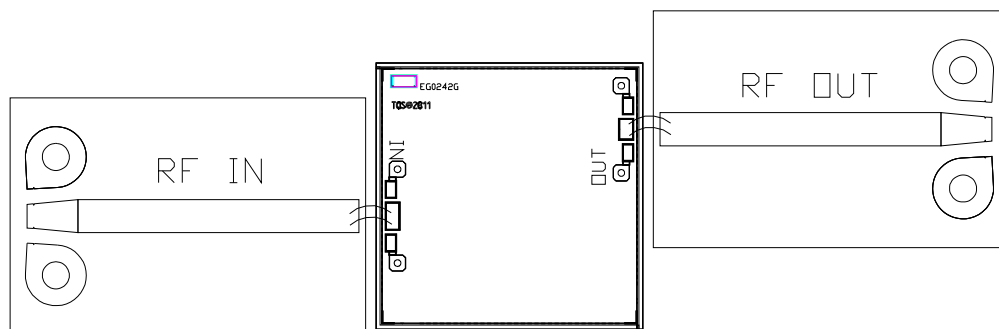
Notes:

1. Test was terminated at 168 hours. Insertion Loss remained ≤ 1 dB for device under test.

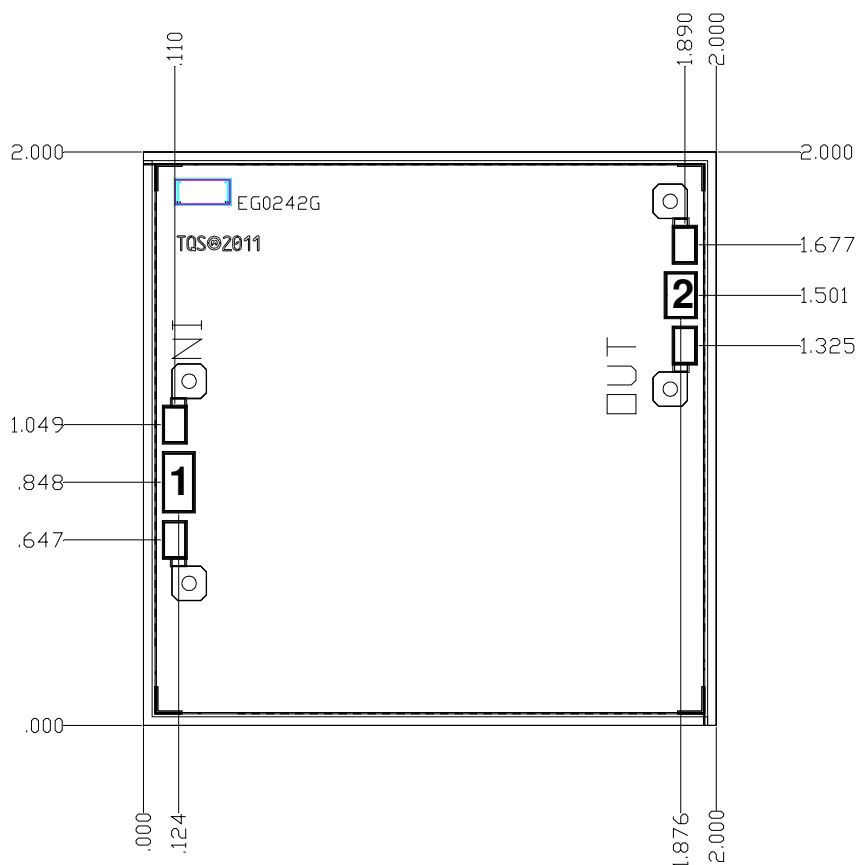
Typical Performance



Assembly Drawing



Mechanical Information and Pad Description



Unit: millimeters

Thickness: 0.10

Die x, y size tolerance: ± 0.050

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

Ground is backside of die

Pad Number	Symbol	Description	Pad Size
1	RF In	Input; matched to 50 Ω .	0.100 x 0.200
2	RF Out	Output; matched to 50 Ω .	0.100 x 0.150

Assembly Notes

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.
- Solder or Organic Adhesive attachment can be used for TGL2205.
- Curing should be done in a convection oven; proper exhaust is a safety concern.

Solder attachment reflow process assembly notes:

- Use AuSn (80/20) solder and limit exposure to temperatures above 300°C to 3 to 4 minutes, maximum.
- An alloy station or conveyor furnace with reducing atmosphere should be used.
- Do not use any kind of flux.
- Coefficient of thermal expansion matching is critical for long-term reliability.
- Devices must be stored in a dry nitrogen atmosphere.

Organic adhesive attachment assembly notes:

- The organics such as epoxy or polyimide can be used.
- Epoxies cure at temperatures of 100 to 200°C.

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.
- Devices with small pad sizes should be bonded with 0.0007-inch wire.

Product Compliance Information

ESD Sensitivity Ratings



Caution! ESD-Sensitive Device

ESD Rating: TBD
Value: TBD
Test: Human Body Model (HBM)
Standard: JEDEC Standard JESD22-A114

Solderability

This part is compliant with EU 2002/95/EC RoHS directive (Restrictions on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment).

This product also has the following attributes:

- Lead Free
- Halogen Free (Chlorine, Bromine)
- Antimony Free
- TBBP-A (C₁₅H₁₂Br₄O₂) Free
- PFOS Free
- SVHC Free

ECCN

US Department of Commerce: EAR99

Contact Information

For the latest specifications, additional product information, worldwide sales and distribution locations, and information about TriQuint:

Web: www.triquint.com
Email: info-sales@triquint.com

Tel: +1.972.994.8465
Fax: +1.972.994.8504

For technical questions and application information: **Email:** info-products@triquint.com

Important Notice

The information contained herein is believed to be reliable. TriQuint makes no warranties regarding the information contained herein. TriQuint assumes no responsibility or liability whatsoever for any of the information contained herein. TriQuint assumes no responsibility or liability whatsoever for the use of the information contained herein. The information contained herein is provided "AS IS, WHERE IS" and with all faults, and the entire risk associated with such information is entirely with the user. All information contained herein is subject to change without notice. Customers should obtain and verify the latest relevant information before placing orders for TriQuint products. The information contained herein or any use of such information does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other intellectual property rights, whether with regard to such information itself or anything described by such information.

TriQuint products are not warranted or authorized for use as critical components in medical, life-saving, or life-sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death.

AMEYA360

Components Supply Platform

Authorized Distribution Brand :



Website :

Welcome to visit www.ameya360.com

Contact Us :

➤ Address :

401 Building No.5, JiuGe Business Center, Lane 2301, Yishan Rd
Minhang District, Shanghai , China

➤ Sales :

Direct +86 (21) 6401-6692
Email amall@ameya360.com
QQ 800077892
Skype ameyasales1 ameyasales2

➤ Customer Service :

Email service@ameya360.com

➤ Partnership :

Tel +86 (21) 64016692-8333
Email mkt@ameya360.com