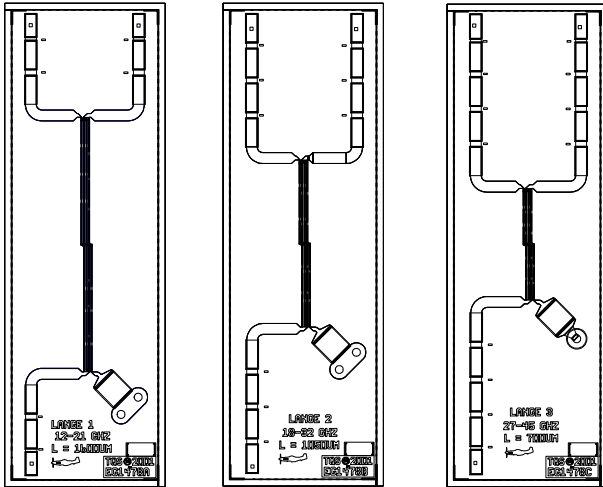


**Lange Coupler Set**



**TGB2001**  
12-21GHz

**TGB4001**  
18-32GHz

**TGB4002**  
27-45GHz

**Key Features and Performance**

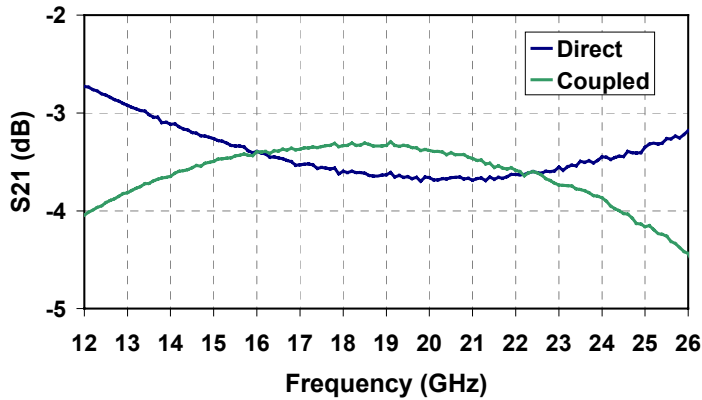
- Very Low Loss (<0.25dB Typical)
- High Power 1W 50Ω Termination
- Broadband 3dB Power Split
- Chip dimensions: 1.0 x 3.0 x 0.1 mm  
(40 x 120 x 4 mils)
- 3 sizes Cover 12GHz - 45GHz

**Primary Applications**

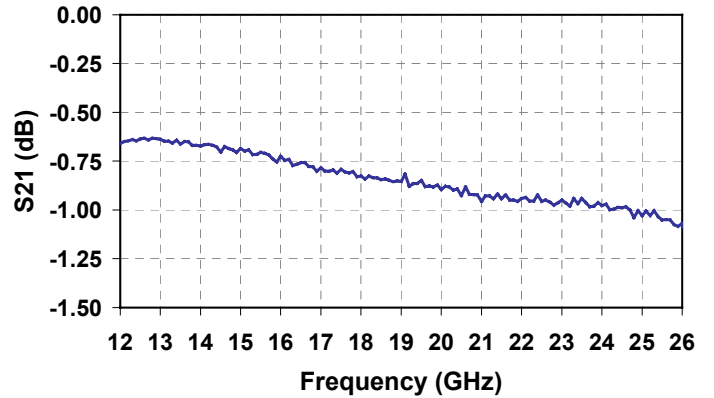
- Power Combining

**Preliminary Measured Data**

**TGB2001**



**TGB2001 Back-to-Back**



Note: Datasheet is subject to change without notice.

**TABLE I  
MAXIMUM RATINGS**

| <b>Symbol</b> | <b>Parameter 1/</b>                 | <b>Value</b>  | <b>Notes</b> |
|---------------|-------------------------------------|---------------|--------------|
| $P_{IN}$      | Input Continuous Wave Power         | TBD dBm       |              |
| $T_M$         | Mounting Temperature                | 320 °C        |              |
| $T_{STG}$     | (30 Seconds)<br>Storage Temperature | -65 to 150 °C |              |
|               |                                     |               |              |

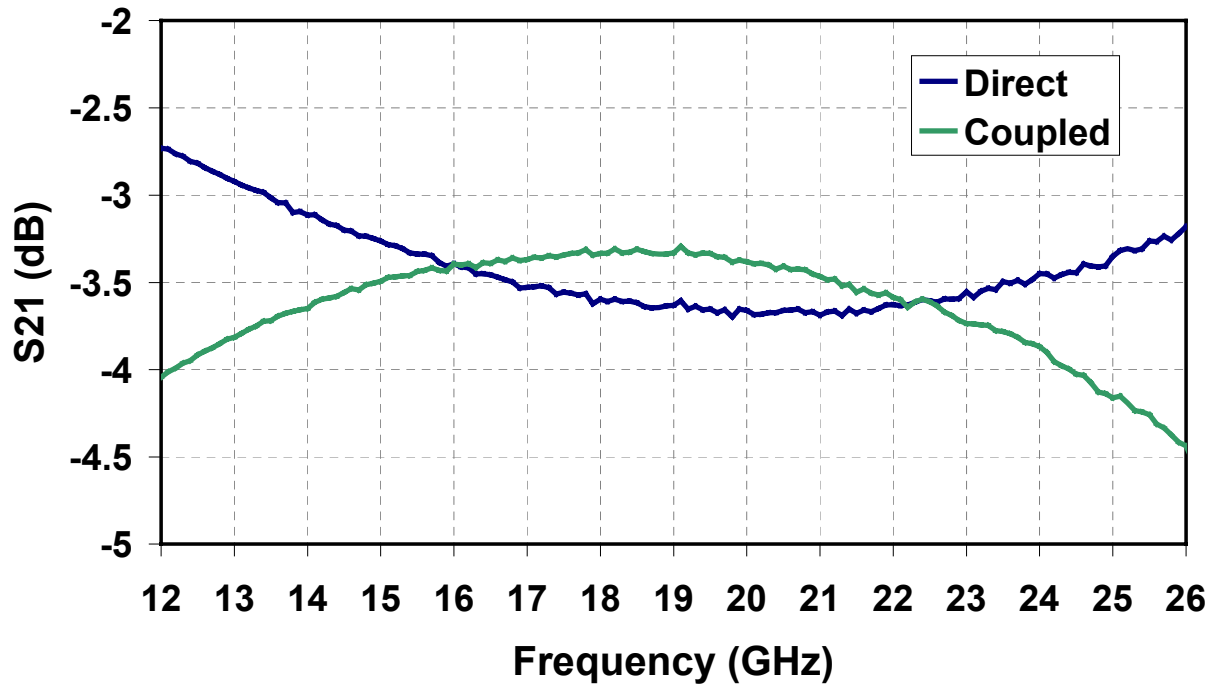
1/ These ratings represent the maximum operable values for this device.

—

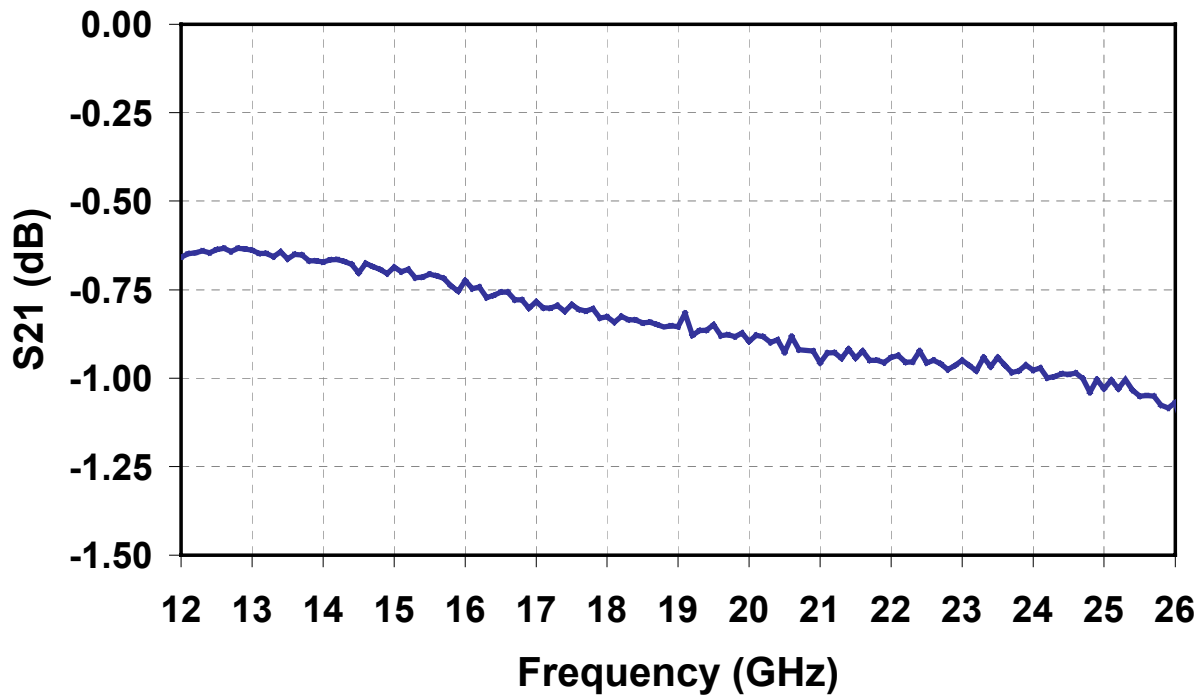


**Typical Fixtured Performance**  
**TGB2001**

**TGB2001**  
**TGB4001**  
**TGB4002**

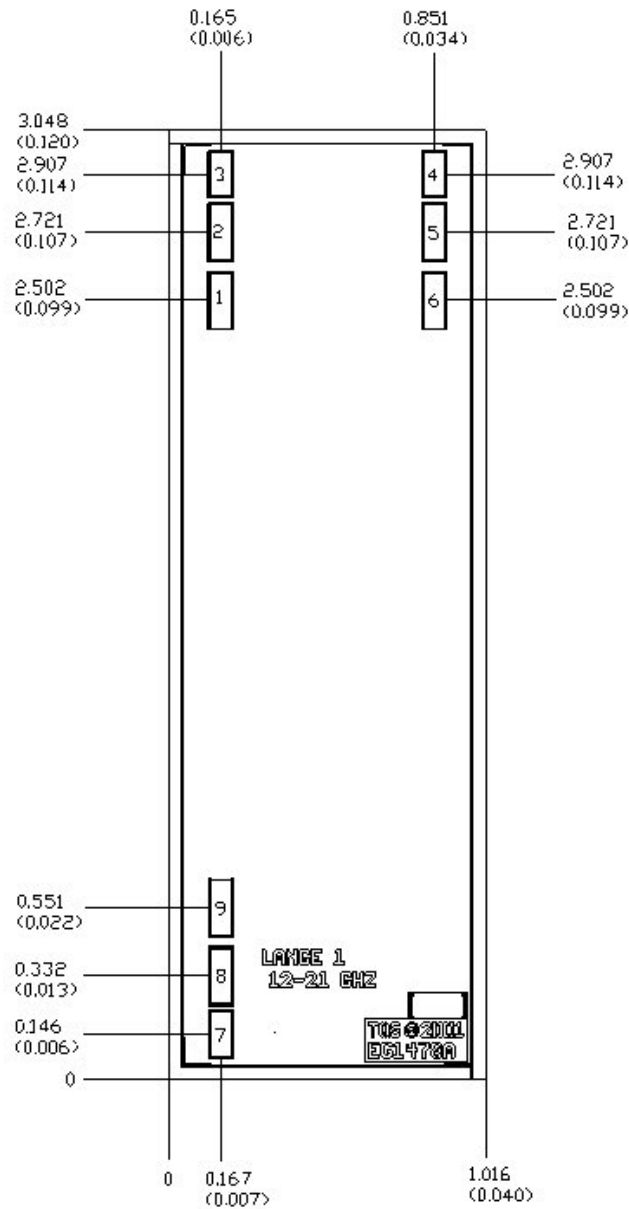


**TGB2001 Back-to-Back**



**TGB2001**  
**TGB4001**  
**TGB4002**

**Mechanical Drawing**  
**TGB2001**

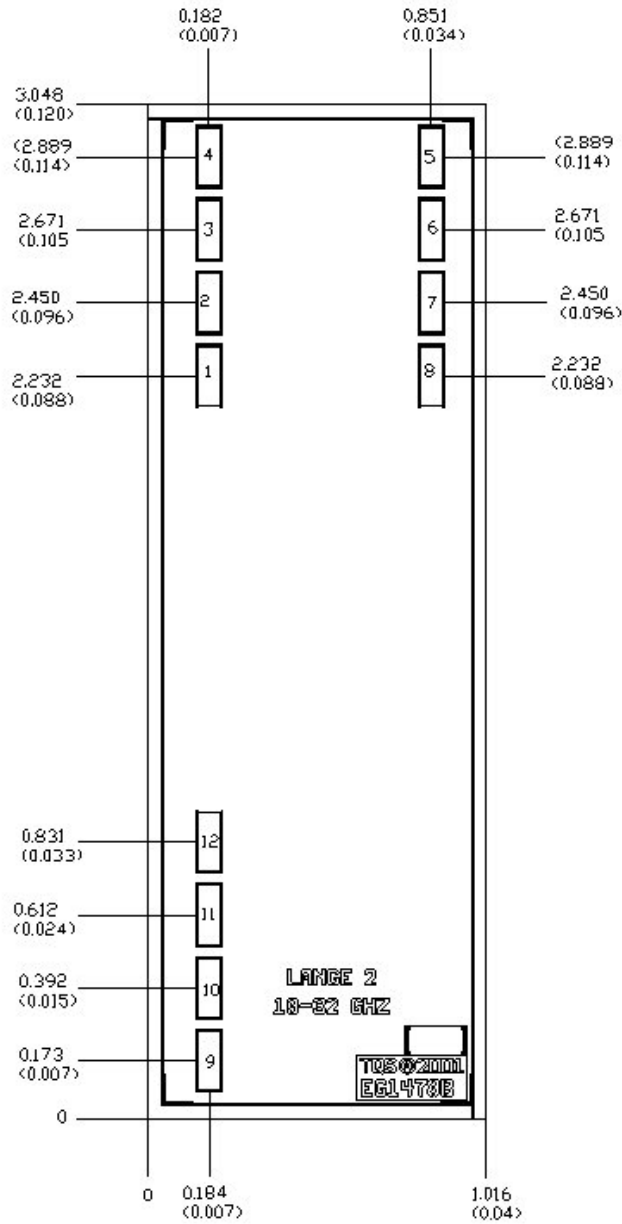


Units: millimeters (inches)  
Thickness: 0.100 (0.004)  
Chip edge to bond pad dimensions are shown to center of bond pad  
Chip size tolerance: +/- 0.051 (0.002)

|              |          |              |                 |
|--------------|----------|--------------|-----------------|
| Bond pad #1: | (Part 1) | 0.08 x 0.188 | (0.003 x 0.007) |
| Bond pad #2: | (Part 1) | 0.08 x 0.190 | (0.003 x 0.007) |
| Bond pad #3: | (Part 1) | 0.08 x 0.153 | (0.003 x 0.006) |
| Bond pad #4: | (Part 2) | 0.08 x 0.153 | (0.003 x 0.006) |
| Bond pad #5: | (Part 2) | 0.08 x 0.190 | (0.003 x 0.007) |
| Bond pad #6: | (Part 2) | 0.08 x 0.188 | (0.003 x 0.007) |
| Bond pad #7: | (Part 3) | 0.08 x 0.153 | (0.003 x 0.006) |
| Bond pad #8: | (Part 3) | 0.08 x 0.190 | (0.003 x 0.007) |
| Bond pad #9: | (Part 3) | 0.08 x 0.188 | (0.003 x 0.007) |

**TGB2001  
TGB4001  
TGB4002**

**Mechanical Drawing  
TGB4001**

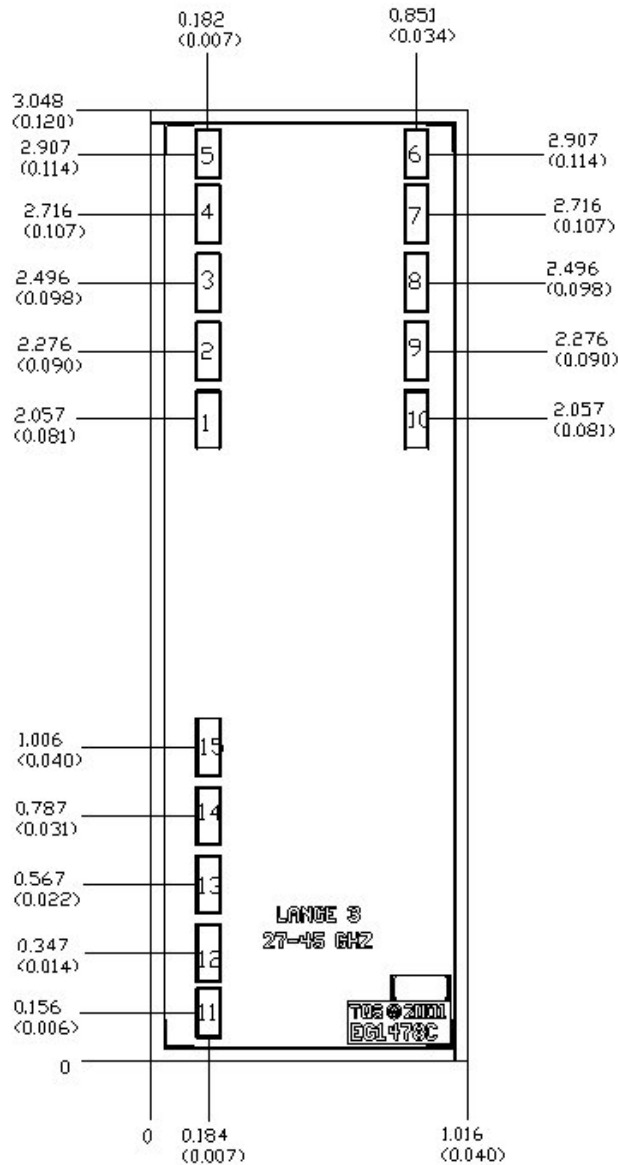


Units: millimeters (inches)  
 Thickness: 0.100 (0.004)  
 Chip edge to bond pod dimensions are shown to center of bond pod  
 Chip size tolerance: +/- 0.051 (0.002)

|               |          |              |                |
|---------------|----------|--------------|----------------|
| Bond pod #1:  | (Port 1) | 0.08 x 0.188 | <0.003 x 0.007 |
| Bond pod #2:  | (Port 1) | 0.08 x 0.190 | <0.003 x 0.007 |
| Bond pod #3:  | (Port 1) | 0.08 x 0.190 | <0.003 x 0.007 |
| Bond pod #4:  | (Port 1) | 0.08 x 0.188 | <0.003 x 0.007 |
| Bond pod #5:  | (Port 2) | 0.08 x 0.188 | <0.003 x 0.007 |
| Bond pod #6:  | (Port 2) | 0.08 x 0.190 | <0.003 x 0.007 |
| Bond pod #7:  | (Port 2) | 0.08 x 0.190 | <0.003 x 0.007 |
| Bond pod #8:  | (Port 2) | 0.08 x 0.188 | <0.003 x 0.007 |
| Bond pod #9:  | (Port 3) | 0.08 x 0.188 | <0.003 x 0.007 |
| Bond pod #10: | (Port 3) | 0.08 x 0.190 | <0.003 x 0.007 |
| Bond pod #11: | (Port 3) | 0.08 x 0.190 | <0.003 x 0.007 |
| Bond pod #12: | (Port 3) | 0.08 x 0.188 | <0.003 x 0.007 |

**TGB2001  
TGB4001  
TGB4002**

**Mechanical Drawing  
TGB4002**



Units: millimeters (inches)  
 Thickness: 0.100 (0.004)  
 Chip edge to bond pad dimensions are shown to center of bond pad  
 Chip size tolerance: +/- 0.051 (0.002)

|               |          |              |                 |
|---------------|----------|--------------|-----------------|
| Band pad #1:  | (Part 1) | 0.08 x 0.188 | (0.003 x 0.007) |
| Band pad #2:  | (Part 1) | 0.08 x 0.190 | (0.003 x 0.007) |
| Band pad #3:  | (Part 1) | 0.08 x 0.190 | (0.003 x 0.007) |
| Band pad #4:  | (Part 1) | 0.08 x 0.190 | (0.003 x 0.007) |
| Band pad #5:  | (Part 1) | 0.08 x 0.163 | (0.003 x 0.006) |
| Band pad #6:  | (Part 2) | 0.09 x 0.163 | (0.003 x 0.006) |
| Band pad #7:  | (Part 2) | 0.08 x 0.190 | (0.003 x 0.007) |
| Band pad #8:  | (Part 2) | 0.08 x 0.190 | (0.003 x 0.007) |
| Band pad #9:  | (Part 2) | 0.08 x 0.190 | (0.003 x 0.007) |
| Band pad #10: | (Part 2) | 0.08 x 0.188 | (0.003 x 0.007) |
| Band pad #11: | (Part 3) | 0.08 x 0.163 | (0.003 x 0.006) |
| Band pad #12: | (Part 3) | 0.08 x 0.190 | (0.003 x 0.007) |
| Band pad #13: | (Part 3) | 0.08 x 0.190 | (0.003 x 0.007) |
| Band pad #14: | (Part 3) | 0.08 x 0.190 | (0.003 x 0.007) |
| Band pad #15: | (Part 3) | 0.08 x 0.188 | (0.003 x 0.007) |

**TGB2001**  
**TGB4001**  
**TGB4002**

## 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.
- Discrete FET devices with small pad sizes should be bonded with 0.0007-inch wire.
- 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.***

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [RF Wireless Misc](#) category:*

*Click to view products by [Qorvo](#) manufacturer:*

Other Similar products are found below :

[R415720000](#) [HMC598-SX](#) [RX98-4](#) [MABT-011000-14235P](#) [W2SW0001-SHLD](#) [HMC1110-SX](#) [HMC579-SX](#) [R417703118](#) [MA4BN1840-1](#)  
[HMC443LP4ETR](#) [HMC561LP3ETR](#) [STHV DAC-253MF3](#) [ADL5390ACPZ-REEL7](#) [ADA4304-2ACPZ-R7](#) [ADA4304-3ACPZ-R2](#)  
[ADA4304-4ACPZ-R2](#) [ADA4304-4ACPZ-R7](#) [ADA4304-3ACPZ-R7](#) [HMC760LC4B](#) [HMC577LC4B](#) [HMC370LP4E](#) [HMC443LP4E](#)  
[HMC444LP4E](#) [HMC445LP4E](#) [HMC448](#) [HMC448LC3B](#) [HMC1096LP3ETR](#) [HMC573LC3BTR](#) [HMC575LP4](#) [HMC575LP4E](#) [HMC576](#)  
[HMC576LC3BTR](#) [HMC578](#) [HMC578LC3B](#) [HMC578LC3BTR](#) [HMC578-SX](#) [HMC598](#) [HMC695LP4E](#) [HMC814](#) [HMC814LC3B](#)  
[HMC814LC3BTR](#) [HMC814-SX](#) [SML1](#) [MADRCC0004](#) [MADRCC0007](#) [MAX2045ETJ+](#) [CMX882E1](#) [CMX881E1](#) [SA606DK/01,118](#)  
[MAX1005CEE+](#)