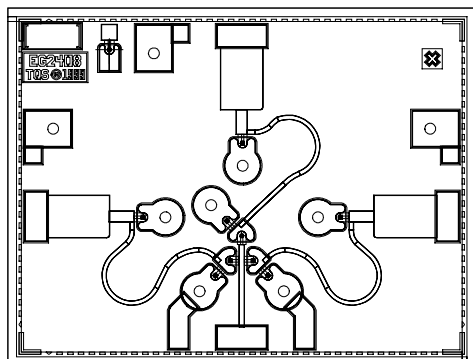


## SP3T PIN Switch

## TGS2303

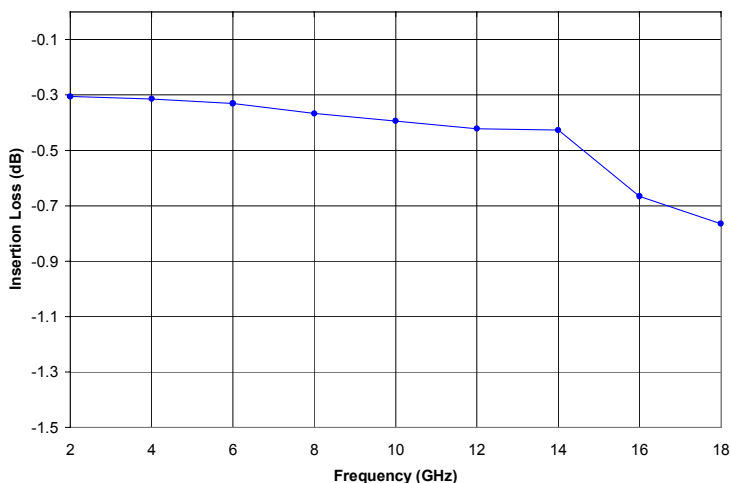
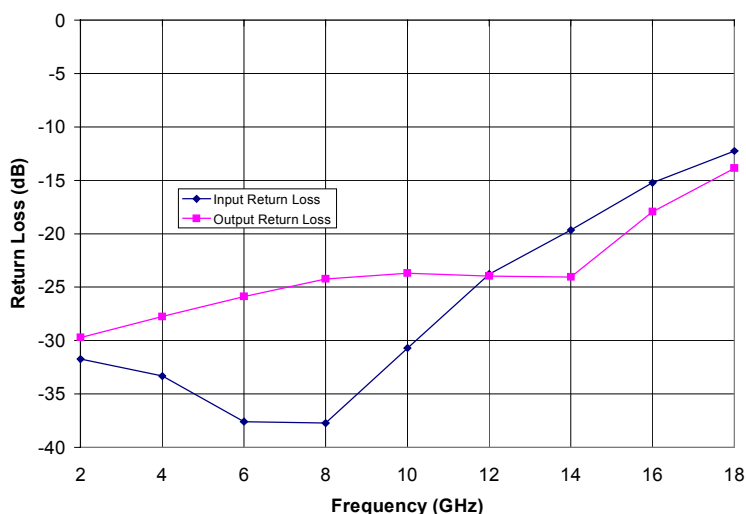


Chip Dimensions 2.16 x 1.65 x 0.1 mm

### Key Features and Performance

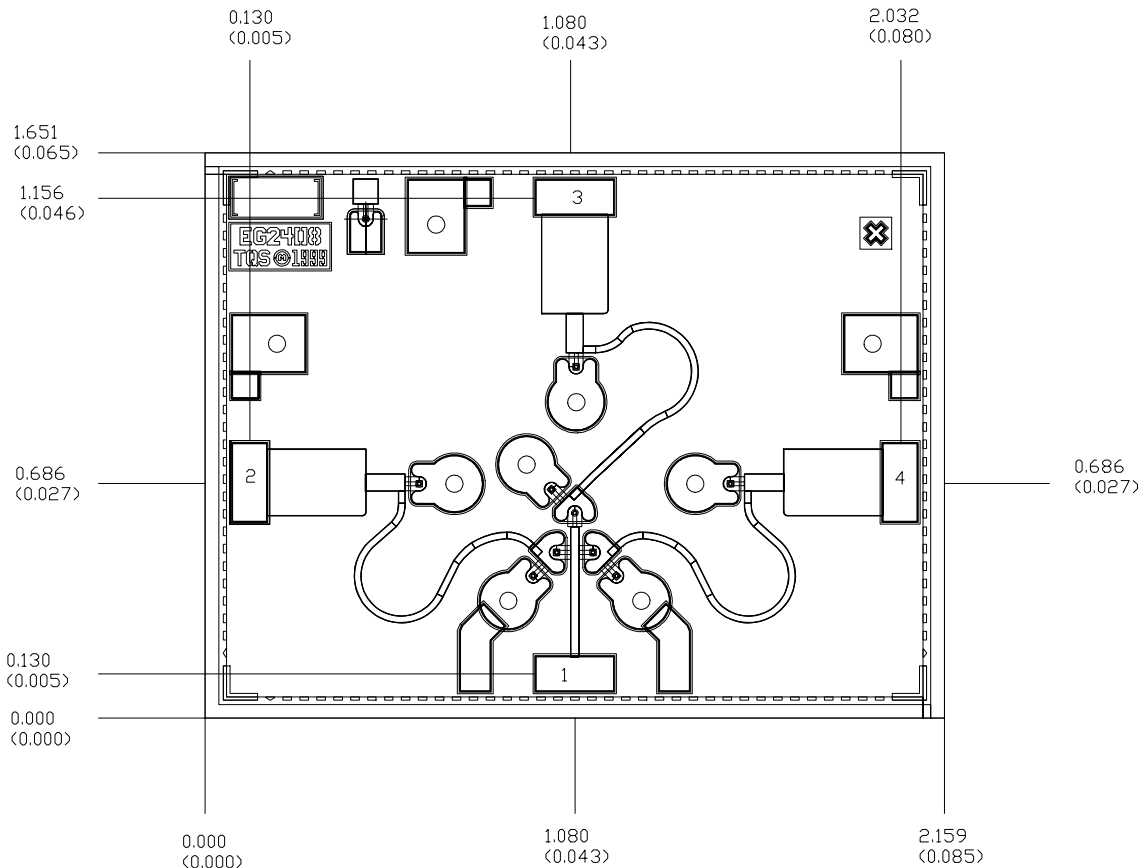
- Vertical PIN Monolithic Process
- 0.2-18 GHz Frequency Range
- 0.5 dB Insertion Loss, Typical
- 35 dB Isolation, Typical
- 20 dB Typical Input and Output Return Loss
- Compatible with Fully Automated Assembly
- Series-Shunt-Shunt Configuration

### Typical Wafer Probe Data



Note: Datasheet is subject to change without notice.

## Mechanical Drawing



Units: millimeters (inches)

Thickness: 0.100 (0.004)

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

Chip size tolerance: +/- 0.051 (0.002)

Bond pad #1 (RF Input)	0.244 x 0.117 (0.010 x 0.005)
Bond pad #2 (RF Output1)	0.117 x 0.244 (0.005 x 0.010)
Bond pad #3 (RF Output2)	0.244 x 0.117 (0.010 x 0.005)
Bond pad #4 (RF Output3)	0.177 x 0.244 (0.005 x 0.010)

### **Notes:**

1. GND is the backside of the MMIC
2. Please refer to the TGS2304-SCC data sheet for the assembly of the TGS2303-SCC MMIC. The primary difference is the TGS2303 has only 3 output ports.

## Assembly Process Notes

Reflow process assembly notes:

- Use AuSn (80/20) solder with limited exposure to temperatures at or above 300°C (30 seconds max).
- 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.***