TLCLPS28

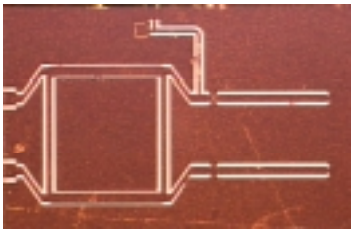
28.5 GHz Linear Phase Shifter

Description

TLC's patented Linear Phase Shifter MMIC is a compact linear phase modulator with over 250 degrees of total phase shift range. This device finds applications in Ka-band communication systems.

Features

- **28.5 GHz Operation**
- **Low Insertion Loss**
- **Linear Phase Shift over 250°**
- **0 to -11V Input Voltage**
- **Coplanar Waveguide Technology**



28.5 GHz Phase Shifter
Size: 2.8 x 1.8 mm

Absolute Maximum Ratings

Symbol	Parameter	Rating
V_G	Negative Supply Voltage	-20 V
I_G	Negative Supply Current	2 mA
T_C	Operating Temperature	-50 to 130 °C
T_{STG}	Storage Temperature	-65 to 150 °C

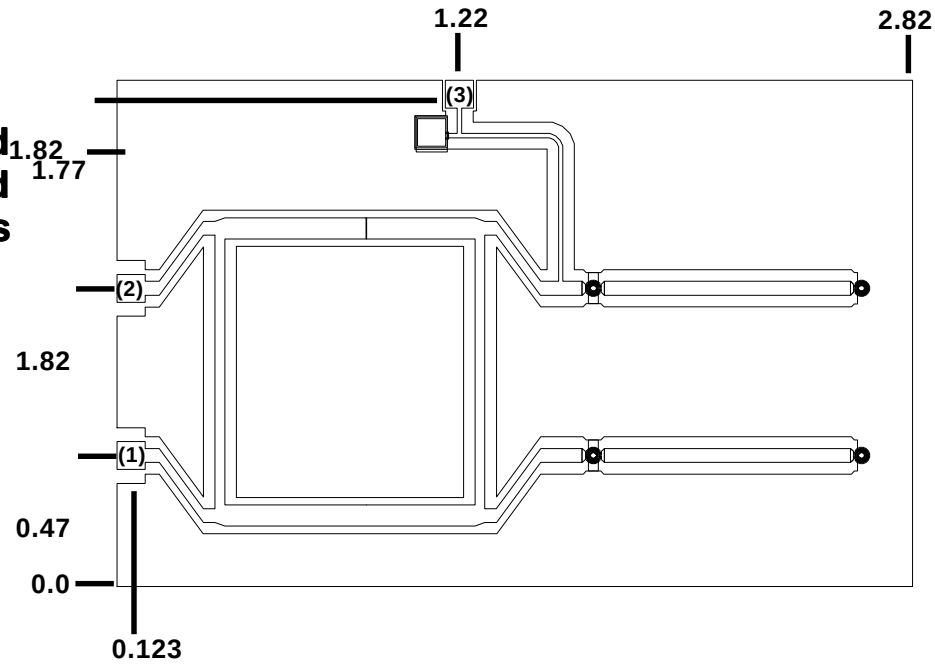
Performance Summary

(At 25 C, 50 ohm system)	Min	Typ	Max	
Frequency	28	28.5	29	GHz
Phase Shift	200	250	280	
Insertion Loss	5	8	11	dB
Gate Supply Voltage	-1.5	-1	-0.5	V

Recommended Operating Procedure

1. Inject required signal.
2. Increase V_G to recommended voltage for desired phase shift.
3. Turn off in the following sequence:
   i. Turn off negative supply voltage (VG)
   ii. Turn off input frequency

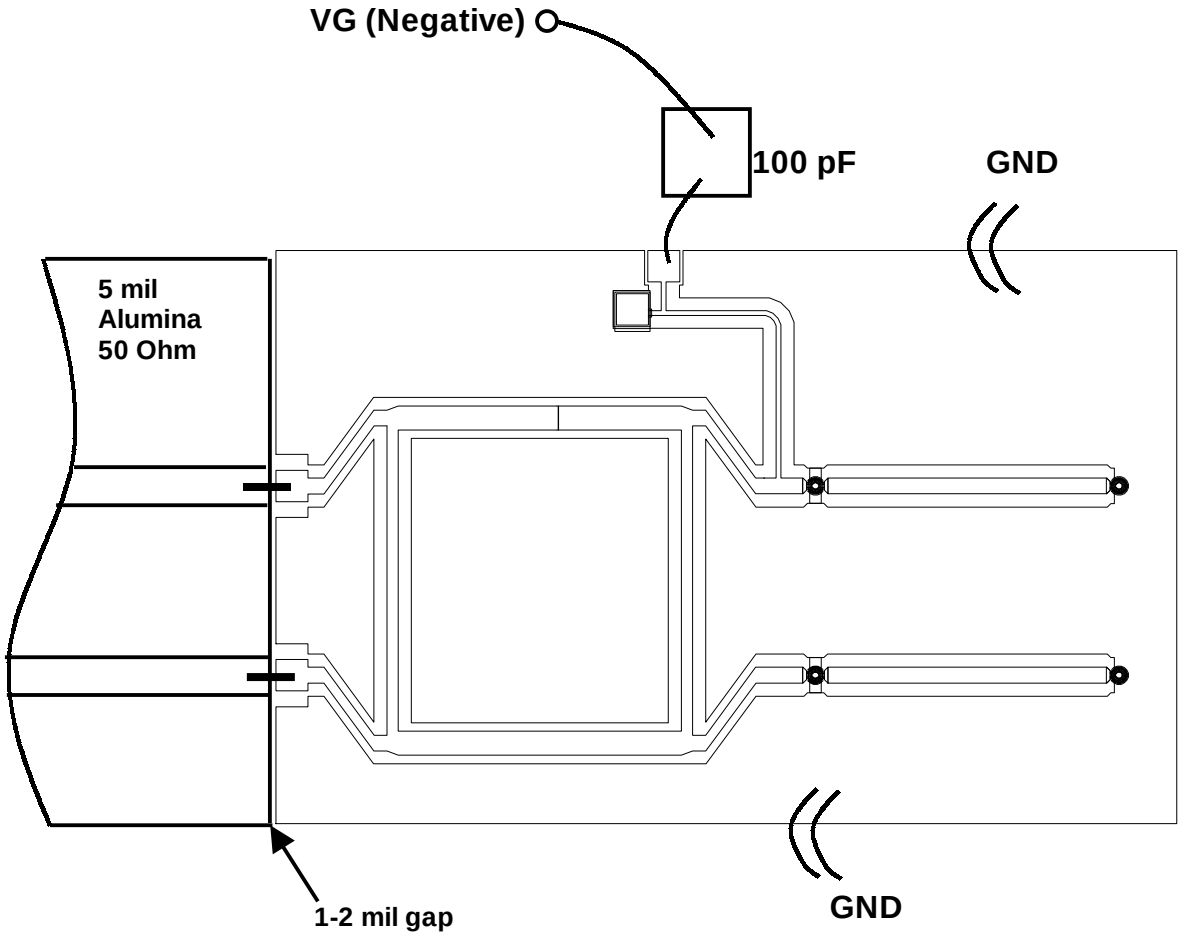
MMIC Layout and Bond Pad Locations



Units: millimeters

Bond Pad 1 (Input/Output)	**0.1x0.1**
Bond Pad 2 (Input/Output)	**0.1x0.1**
Bond Pad 3 (VG)	**0.1x0.1**

Recommended Assembly Diagram

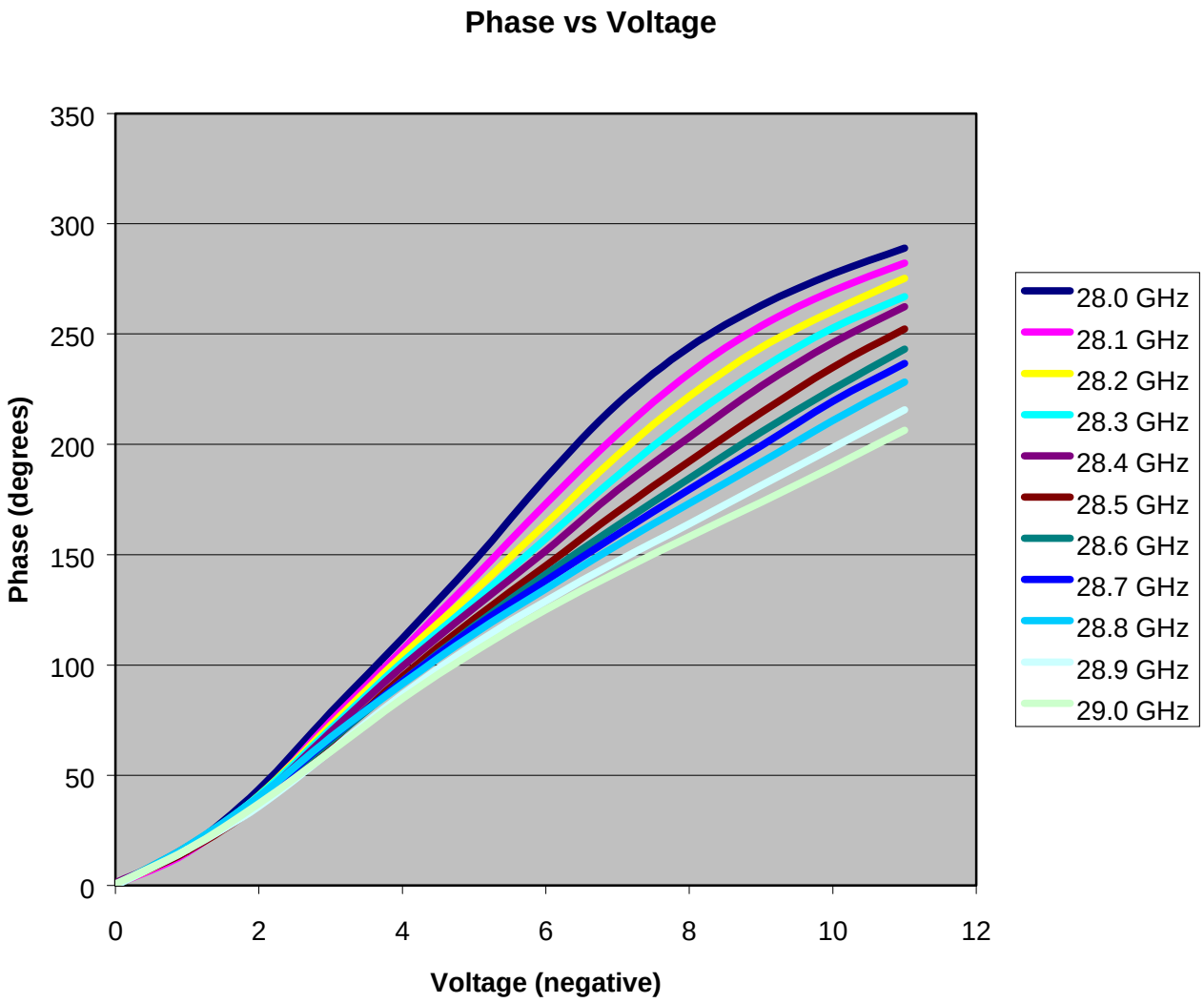


Note: Use one (1) 0.002" by 0.0005" gold ribbon or two (2) 0.0007" wire for bonding the RF input and output. Mount chip using silver epoxy (e.g. Epo-Tek H32C) or Gold-Tin (AuSn:80/20) solder. For best heat sinking, use either gold plated copper or composite matrix material, e.g. Thermocon.

TLCLPS28

28.5 GHz Linear Phase Shifter

Performance Data



TLC Precision Wafer Technology
1411 West River Road North
Minneapolis, MN 55411

http://www.tlcprecision.com
Phone: 612-341-2795
Fax: 612-341-2799