

# KA-BAND QPSK/BPSK PHASE MODULATOR

## VS-QPSK-PM (TLC PMLB01)

- 29 to 32 GHz
- Insertion Loss < 6 dB
- Direct Phase Modulation
- Fast Switching (nsec)
- Negligible Power Consumption

### DESCRIPTION AND APPLICATIONS

The VS-QPSK-PM is a delay line phase shifter which can be operated as a digital phase modulator for up to 5% fractional bandwidth.

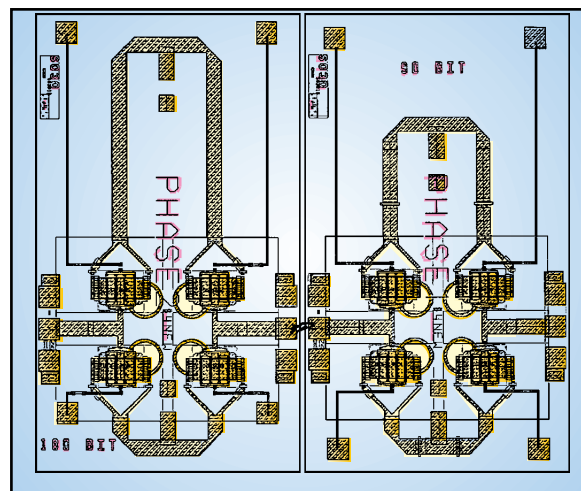
The flat insertion loss provided by the VS-QPSK-PM makes it an excellent candidate for use as a digital phase modulator in angle modulation communication systems.

### PERFORMANCE SUMMARY

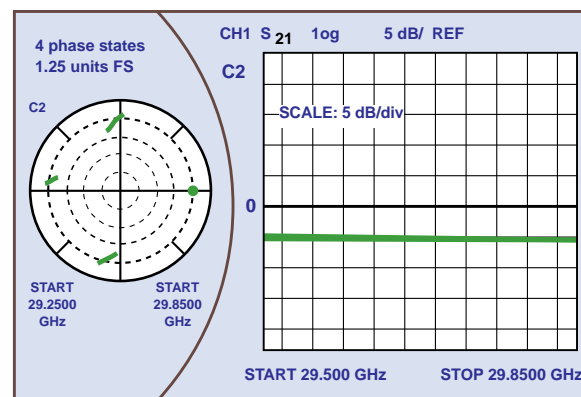
Parameter (@ 25°C)	Min	Typ	Max
Frequency (GHz)	29	—	32
Insertion Loss (dB)	2	4	6
Delta Insertion Loss (dB)	—	1	—
DC Power (mW)	—	0	—

### OPERATING CONDITIONS

$V_{gs} = 0$  to 4.5 V       $V_{ds} = 0$  V  
Max Input Power Levels < 23 dBm



Size: 2.6 x 2.17 x 0.1 mm



### ASSEMBLY

Ti/Pt/Au metallization is used for the bond pads and backside which is compatible with eutectic die attach and thermocompression or thermosonic bonding. Either 3 mil Au ribbon or 1 mil Au wire may be used to connect the MMW and DC pads to the system.

Additional DC bypass capacitors (22 pf & 0.1 µf) are recommended.

The data contained in this data sheet is for information only. TLC reserves the right to change this product without notice.



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