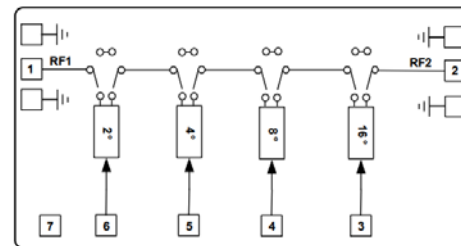


**Features**

- Phase Shift Range: 30 °
- Minimum Phase Shift: 2 °
- Phase Shift Accuracy RMS: 1.5 °
- Insertion Loss: 1.8dB
- Phase Shift Amplitude Modulation:  $\pm 0.3$  dB
- Impedance: 50 $\Omega$
- Die Size: 2.5 x 1.2 x 0.1 mm

**Typical Applications**

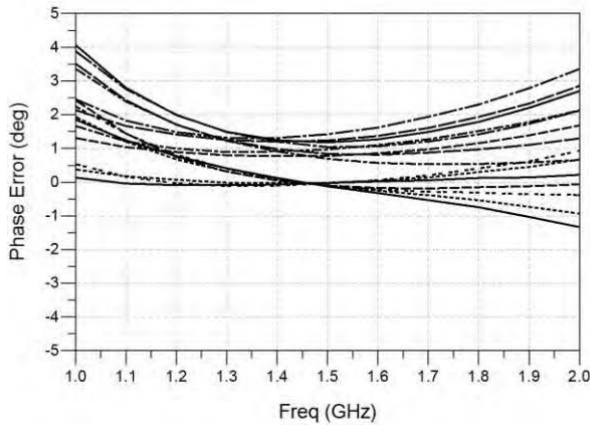
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

**Functional Block Diagram**

**Electrical Specifications**

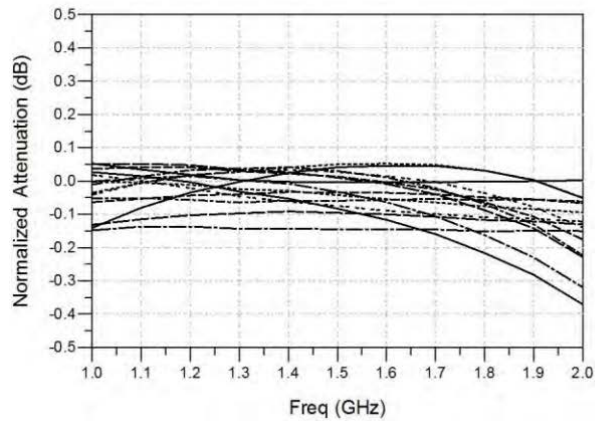
TA = +25°C, Vctl = 0/-5V

Parameters	Min.	Typ.	Max.	Units
Frequency		1-2		GHz
Insertion Loss		1.8		dB
Phase Shift Accuracy RMS		1.5		°
Phase Shift Amplitude Modulation		$\pm 0.3$		dB
Return Loss		15		dB
P-1dB		24		dBm
Switching Speed		30		ns

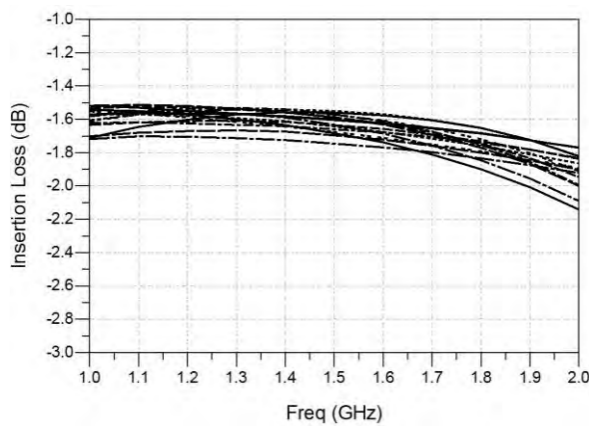
**Phase Shift Accuracy**



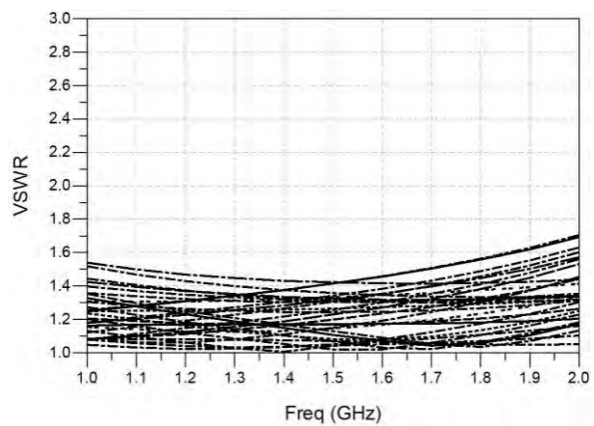
**Amplitude Modulation**



**Insertion Loss**

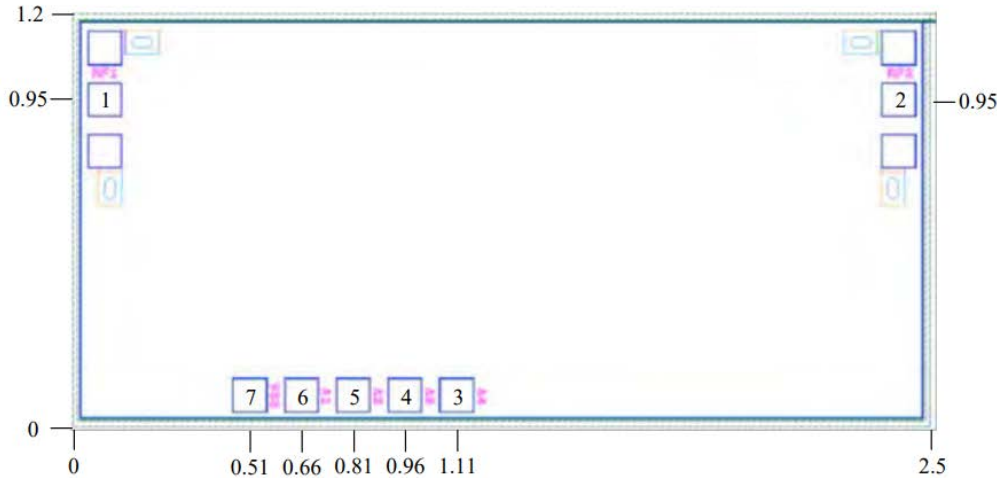


**Input and Output Standing Waves**





**Outline Drawing:**  
All Dimensions in um



**Pad Description**

PAD	Function	Description
1, 2	RF1, RF2	RF port; This pad is DC coupling, 50 ohm matched; if the RF is not 0V, an external DC blocking capacitor is required
3	A4	A4=0V, 16 ° phaser off; A4=+5V, 16 ° phaser on
4	A3	A3=0V, 8 ° phaser off; A3=+5V, 8 ° phaser on
5	A2	A2=0V, 4 ° phaser off; A2=+5V, 4 ° phaser on
6	A1	A1=0V, 2 ° phaser off; A1=+5V, 2 ° phaser on
7	VSS	Digital circuit power port, connect to -5V power supply voltage
GND	GND	Die bottom must be connected to RF/DC ground

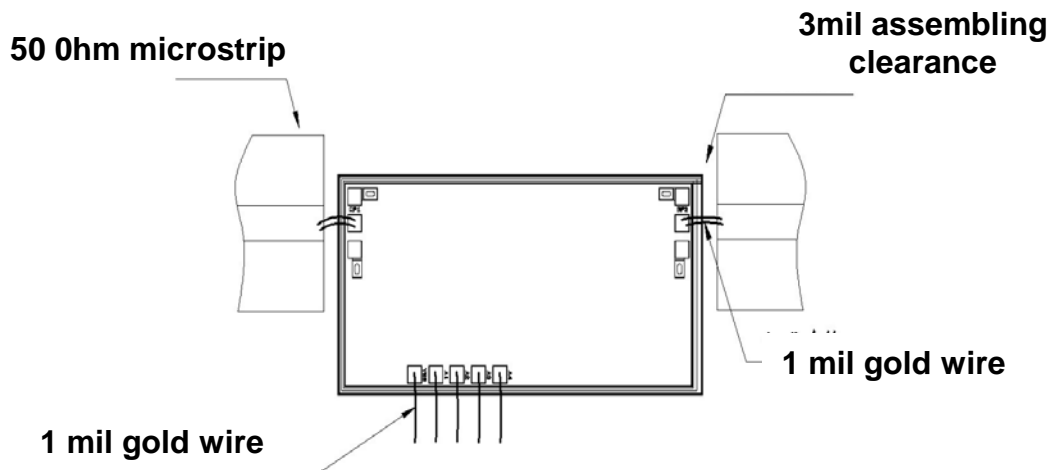


### Truth Table

State	2°	4°	8°	16°
	P1	P2	P3	P4
Reference State	0	0	0	0
2°	1	0	0	0
4°	0	1	0	0
8°	0	0	1	0
16°	0	0	0	1

"0" level range: 0~0.5V; "1" level range: 3~5V

### Assembly Drawing



#### Notes:

1. Die thickness: 100um
2. Typical bond pad is 100\*100 μm<sup>2</sup>
3. Bond pad metalization: Gold
4. Backside metalization: Gold
5. Backside of the die (GND)
6. No connection required for unlabeled bond pads

#### Maximum Ratings:

1. RF input power: +24dBm
2. Storage temperature: -65°C to +150°C
3. Operating temperature: -55°C to +85°C