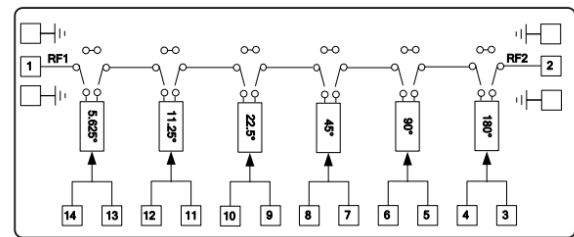


**Features**

- Phase Shift Range: 360 °
- Minimum Phase Shift: 5.625 °
- Phase Shift Accuracy RMS: 2.5 °
- Insertion Loss: 5dB
- Phase Shift Amplitude Modulation:  $\pm 0.6$  dB
- Impedance: 50 $\Omega$
- Die Size: 2 x 2.5x 0.075 mm

**Typical Applications**

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

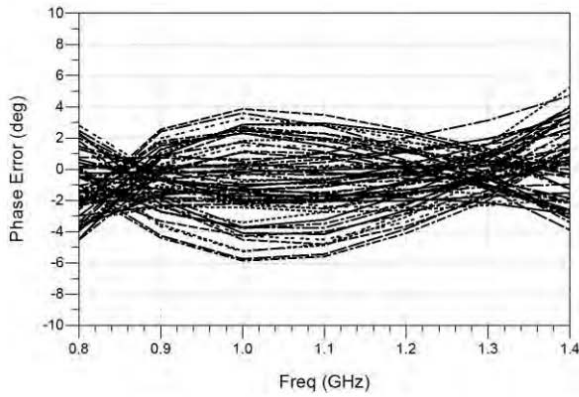
**Functional Block Diagram**

**Electrical Specifications**

TA = +25°C, Vctl = 0/-5V

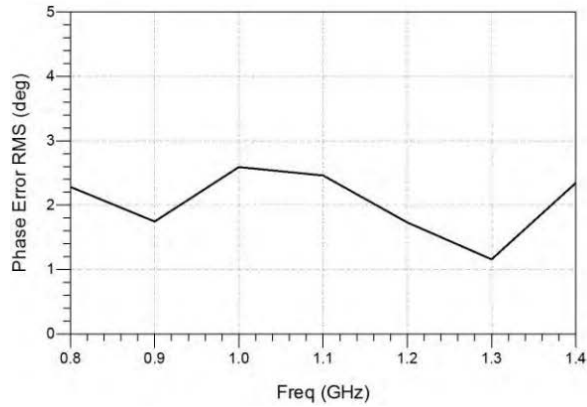
Parameters	Min.	Typ.	Max.	Units
Frequency		0.8-1.4		GHz
Insertion Loss		5		dB
Phase Shift Accuracy RMS		2.5		°
Phase Shift Amplitude Modulation		$\pm 0.6$		dB
Return Loss		15		dB
P-1dB		24		dBm
Switching Speed		30		ns



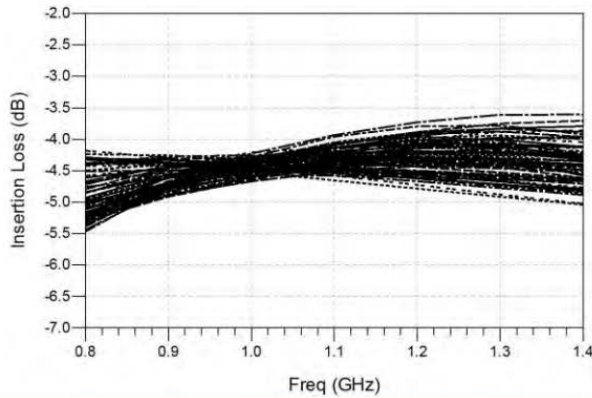
### Phase Shift Accuracy



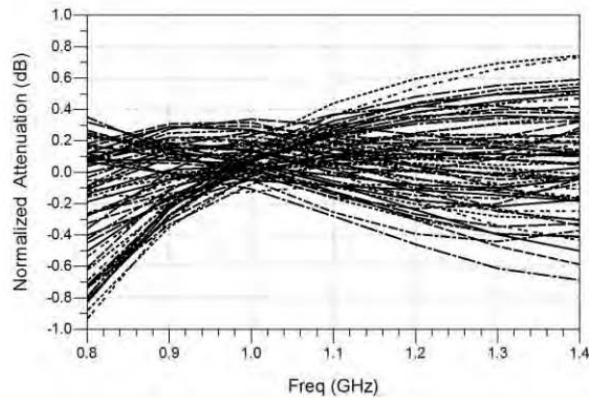
### Phase Shift Accuracy (RMS)



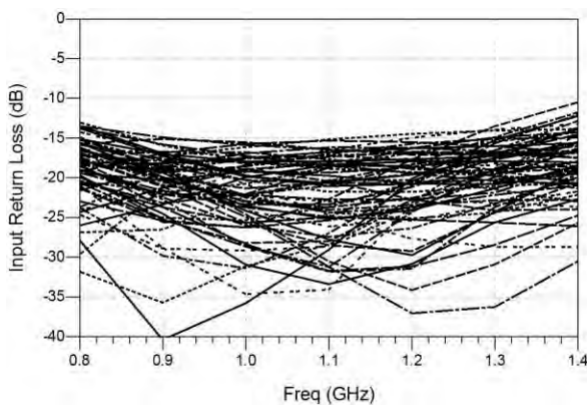
### Insertion Loss



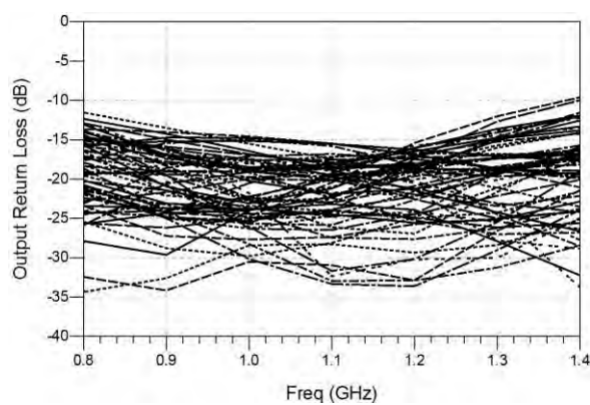
### Amplitude Modulation



### Input Return Loss

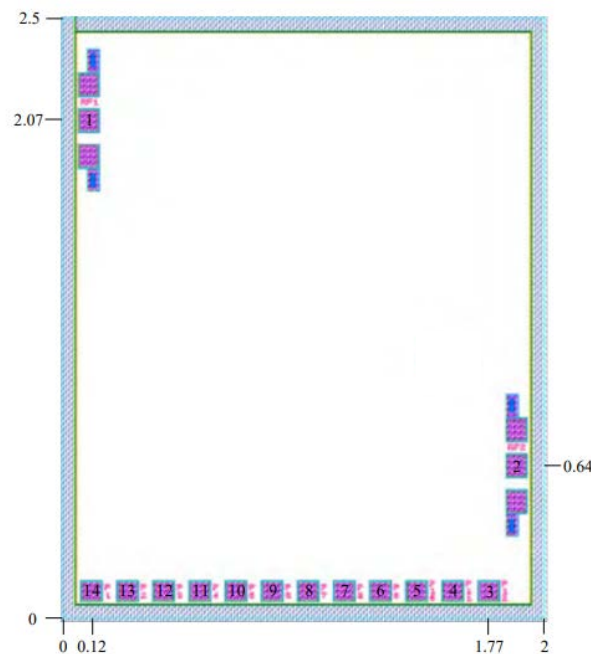


### Output Return Loss





**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, 4	P12, P11	-5V, 0V, 180 ° phaser off; 0V, -5V, 180 ° phaser on
5, 6	P10, P9	-5V, 0V, 90 ° phaser off; 0V, -5V, 90 ° phaser on
7, 8	P8, P7	-5V, 0V, 45 ° phaser off; 0V, -5V, 45 ° phaser on
9, 10	P6, P5	-5V, 0V, 22.5 ° phaser off; 0V, -5V, 22.5 ° phaser on
11, 12	P4, P3	-5V, 0V, 11.25 ° phaser off; 0V, -5V, 11.25 ° phaser on
13, 14	P2, P1	-5V, 0V, 5.625 ° phaser off; 0V, -5V, 5.625 ° phaser on
GND	GND	Die bottom must be connected to RF/DC ground

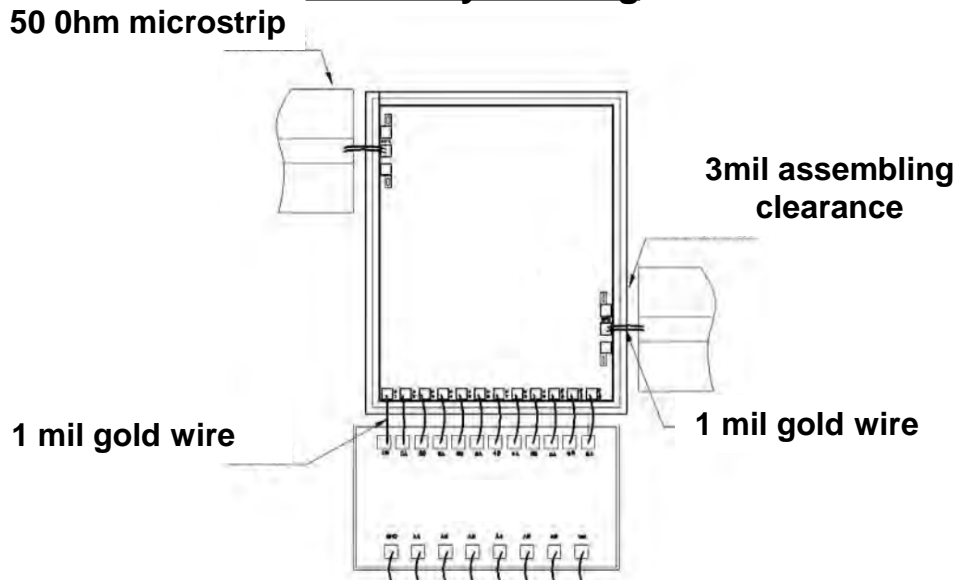


### Truth Table

State	5.625°		11.25°		22.5°		45°		90°		180°	
	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
Reference State	0	1	0	1	0	1	0	1	0	1	0	1
5.625°	1	0	0	1	0	1	0	1	0	1	0	1
11.25°	0	1	1	0	0	1	0	1	0	1	0	1
22.5°	0	1	0	1	1	0	0	1	0	1	0	1
45°	0	1	0	1	0	1	1	0	0	1	0	1
90°	0	1	0	1	0	1	0	1	1	0	0	1
180°	0	1	0	1	0	1	0	1	0	1	1	0

"0" level range: 0~-0.2V; "1" level range: -3~-6V

### 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