

**Features**

- Frequency: 13-15GHz
- Phase Shift Accuracy RMS: 1.2 °
- Insertion Loss: 8.3dB (Typ.)
- Amplitude Variation: 2.0dB
- Impedance: 50Ω
- Die Size: 3.23 x 1.5 x 0.1 mm

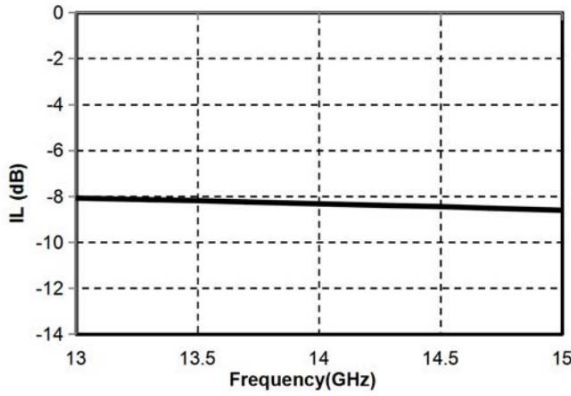
**Typical Applications**

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

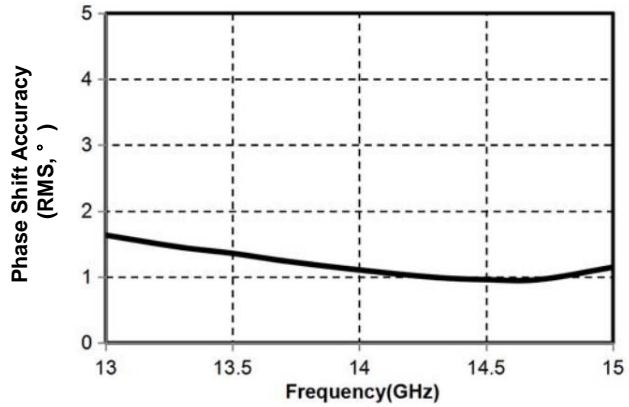
**Electrical Specifications**
**TA = +25°C**

Parameters	Min.	Typ.	Max.	Units
Frequency		13-15		GHz
Insertion Loss		8.3	8.6	dB
Phase Shift Accuracy RMS		1.2		°
Amplitude Variation		2.0		dB
Input Return Loss	12	23	-	dB
Output Return Loss	10	17	-	dB
Switching Speed		20		ns

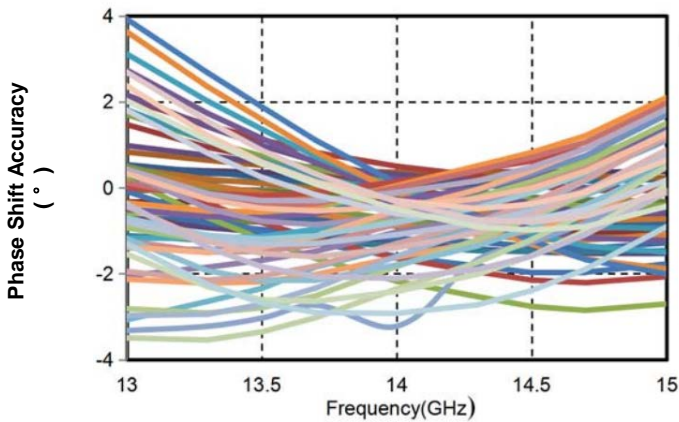
Insertion Loss vs. Frequency



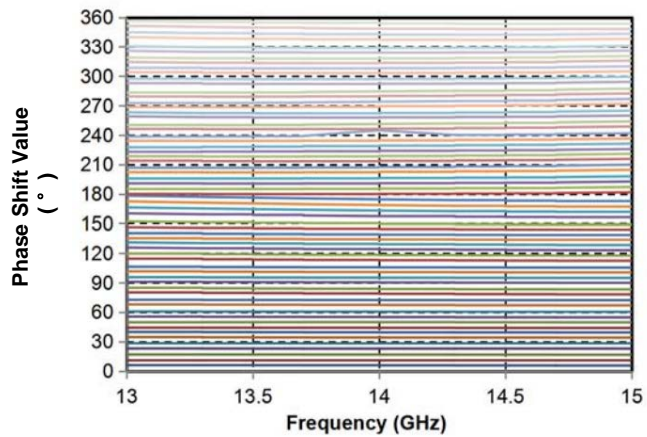
Phase Shift Accuracy (RMS) vs. Frequency



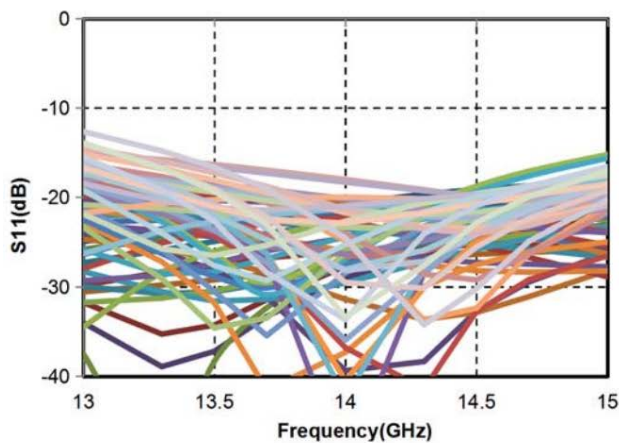
Phase Shift Accuracy vs. Frequency



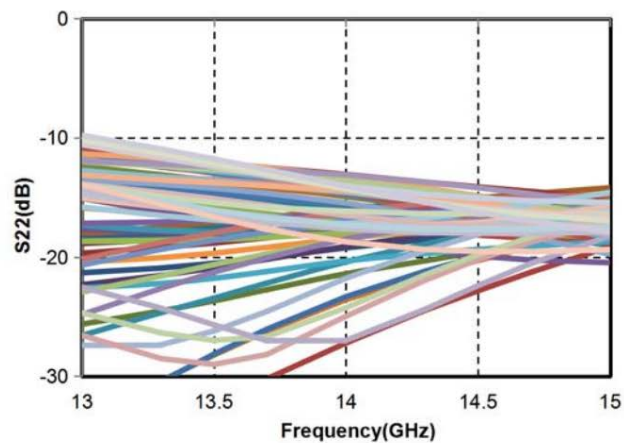
Phase Shift Value vs. Frequency



Input Return Loss vs. Frequency

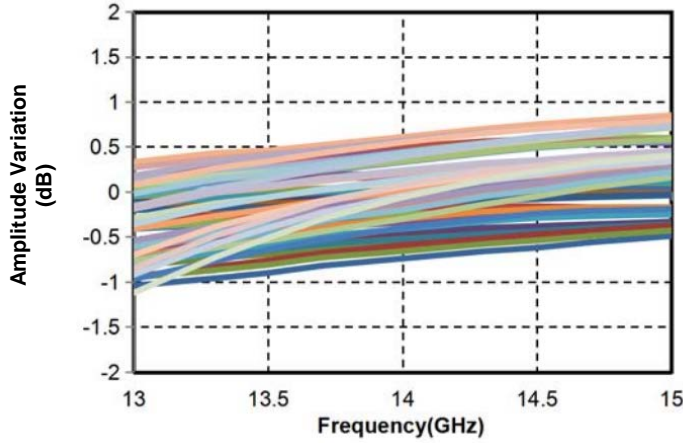


Output Return Loss vs. Frequency



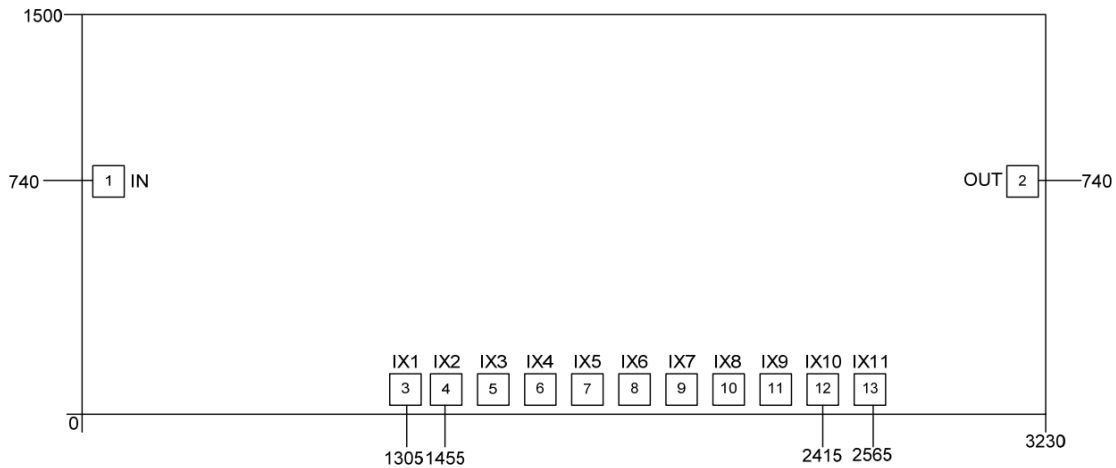


### Amplitude Variation



### Outline Drawing:

All Dimensions in  $\mu\text{m}$



### Pad Description

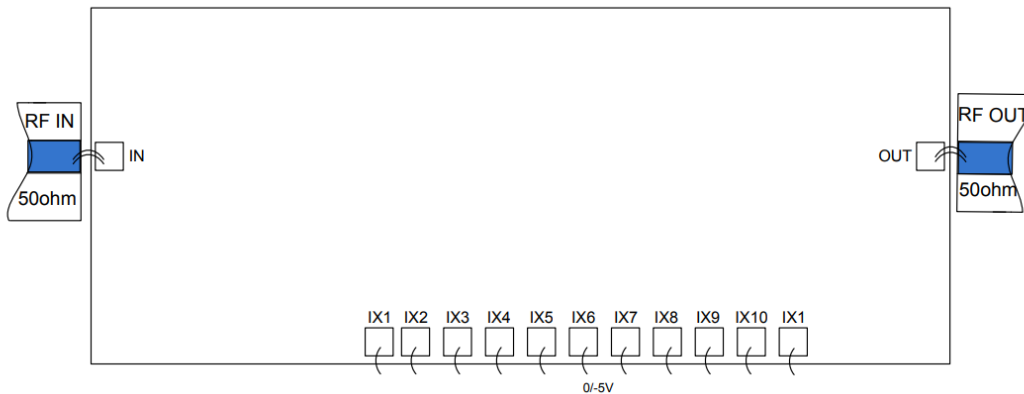
PAD	Function	Description
1	RF IN	RF Input Port
2	RF OUT	RF Output Port
3-13	CTRL	Control Port
GND	GND	Die bottom must be connected to RF/DC ground



### Truth Table

Phase	IX1	IX2	IX3	IX4	IX5	IX6	IX7	IX8	IX9	IX10	IX11
0	0	-5	-5	0	-5	-5	0	-5	0	0	-5
5.625	0	-5	0	0	-5	-5	0	-5	0	0	-5
11.25	0	-5	-5	0	-5	0	-5	-5	0	0	-5
22.5	0	-5	-5	0	-5	-5	0	0	-5	0	-5
45	0	-5	-5	0	-5	-5	0	-5	0	-5	0
90	0	-5	-5	-5	0	-5	0	-5	0	0	-5
180	-5	0	-5	0	-5	-5	0	-5	0	0	-5
354.375	-5	0	0	-5	0	0	-5	0	-5	-5	0

### 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: +23dBm
2. Control voltage range: -8V~0.5V
3. Storage temperature: -65°C to +150°C
4. Operating temperature: -55°C to +85°C