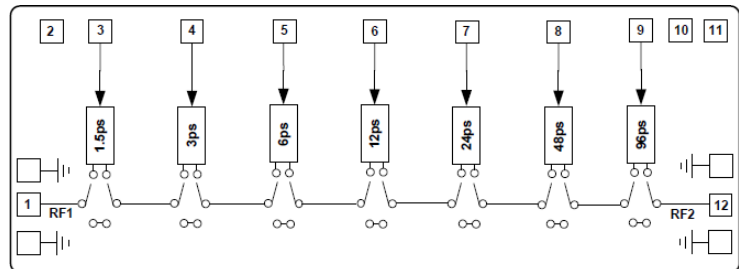


**Features**

- Delay Range: 1.5ps-190.5ps
- Minimum Delay: 1.5ps
- Delay Accuracy RMS: 1.5ps
- Insertion Loss: 18 dB
- Phase Shift Amplitude Modulation:  $\pm 0.8$  dB
- Input/Output: 50 Ohm
- Die Size: 4.7 x 2.4 x 0.1 mm

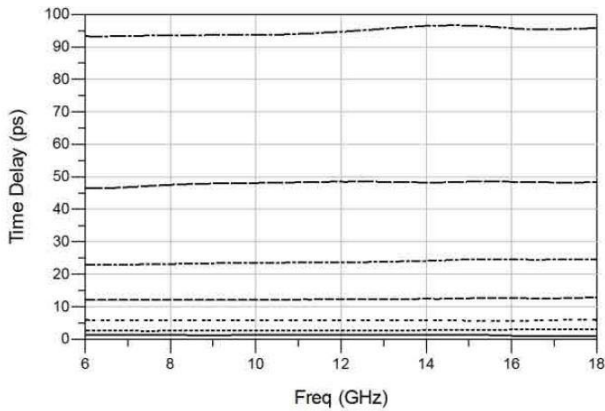
**Typical Applications**

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

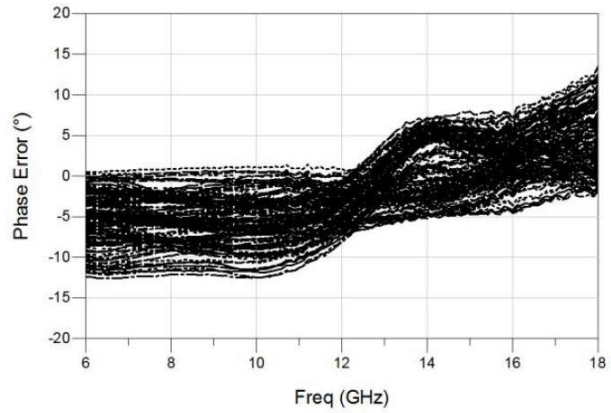
**Functional Block Diagram**

**Electrical Specifications**  
 TA = +25°C, Vctl = 0/+5V

Parameters	Min.	Typ.	Max.	Units
Frequency		6-18		GHz
Insertion Loss		18		dB
Time Delay Accuracy RMS		1.5		ps
Phase Shift Amplitude Modulation		$\pm 0.8$		dB
Input and Output SWR		1.5		-
Input 1dB Compression		24		dBm
Switching Time		30		ns

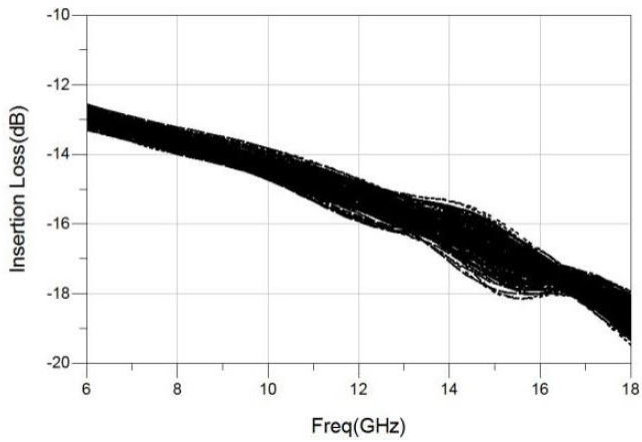
**Basic State Time Delay**



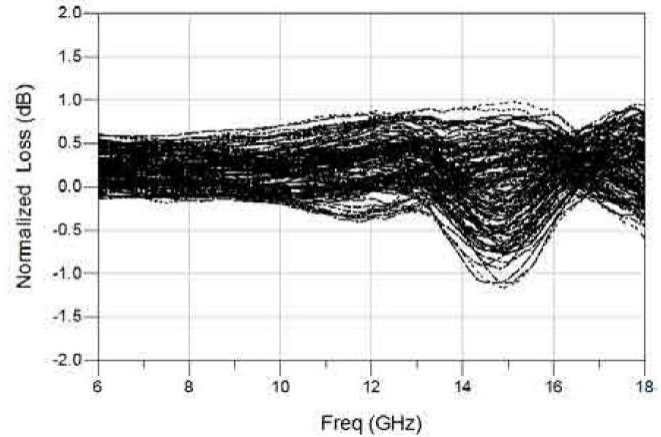
**Full State Time Delay Accuracy**



**Full State Insertion Loss**

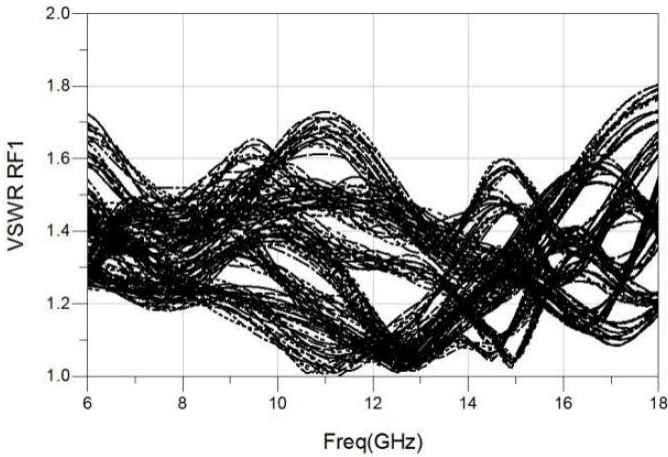


**Full State Amplitude Modulation**

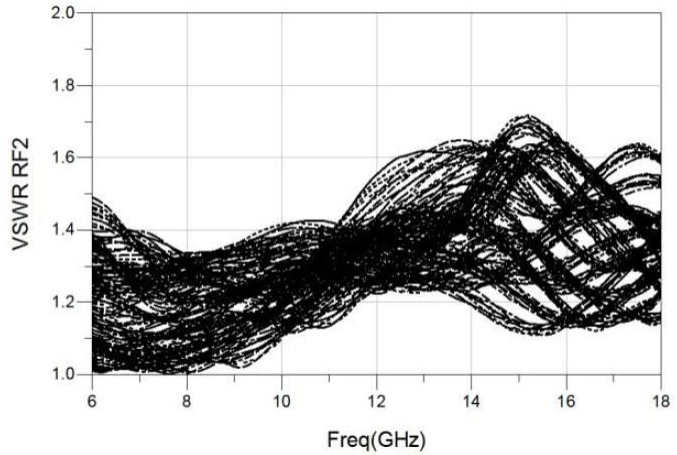




VSWR RF1

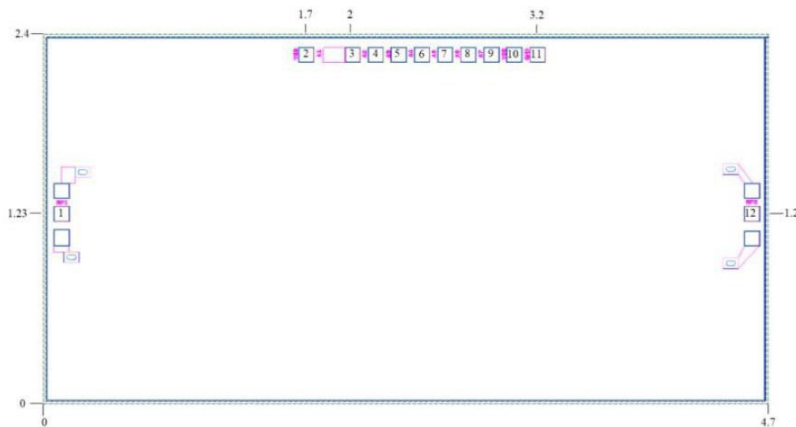


VSWR RF2



### Outline Drawing:

All Dimensions in mm



### Pad Description

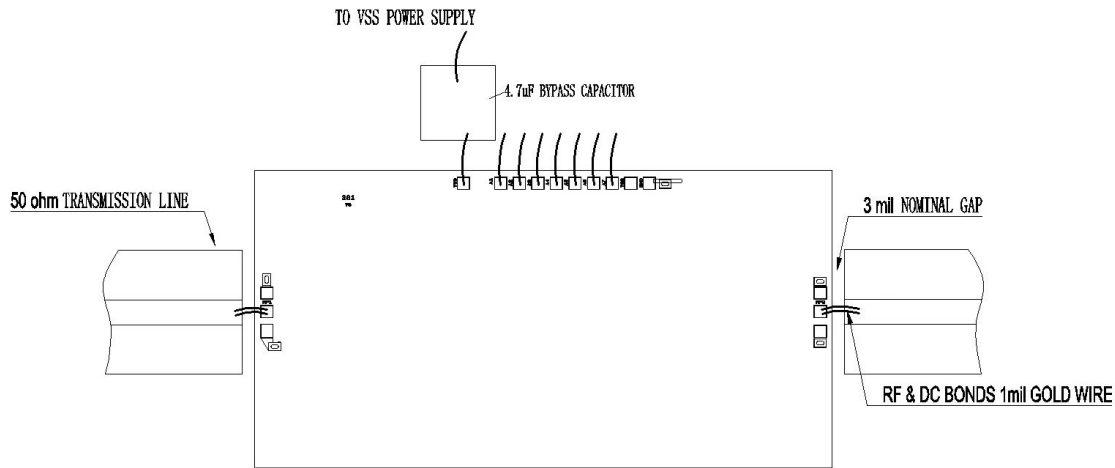
Pad Number	Function	Description
1, 12	RF1, RF2	The pad is RF port and matched with 50 Ohm.
2, 10	VSS	The pad is 7-bit TTL power supply port. Use anyone of them to connect to -5V.
3	A1	When A1=5V, 1.5ps OFF; When A1=0V, 1.5ps ON.
4	A2	When A2=5V, 3ps OFF; When A2=0V, 3ps ON.
5	A3	When A3=5V, 6ps OFF; When A3=0V, 6ps ON.
6	A4	When A4=5V, 12ps OFF; When A4=0V, 12ps ON.
7	A5	When A5=5V, 24ps OFF; When A5=0V, 24ps ON.
8	A6	When A6=5V, 48ps OFF; When A6=0V, 48ps ON.
9	A7	When A7=5V, 96ps OFF; When A7=0V, 96ps ON.
11	GND	The pad is 7-bit TTL grounding port.
Die bottom	GND	Die bottom must be connected to RF/DC ground.



### True Value Table

State	1.5ps	3ps	6ps	12ps	24ps	48ps	96ps
	A1	A2	A3	A4	A5	A6	A7
Reference State	5	5	5	5	5	5	5
1.5ps	0	5	5	5	5	5	5
3ps	5	0	5	5	5	5	5
6ps	5	5	0	5	5	5	5
12ps	5	5	5	0	5	5	5
24ps	5	5	5	5	0	5	5
48ps	5	5	5	5	5	0	5
96ps	5	5	5	5	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 is grounded
6. No connection required for unlabeled bond pads

#### Maximum Ratings:

1. RF input power: +24dBm
2. Storage temperature: -65°C to +175°C
3. Operating temperature: -55°C to +85°C