

**Features**

- Integrated 6 TTL level conversion circuit
- Attenuation Range: 0.5dB -31.5dB
- Attenuation Accuracy:  $\pm 0.5$ dB
- Insertion Loss : 5.4dB
- Attenuation Additional Phase Shift:  $\pm 4^\circ$
- Impedance: 50 $\Omega$
- Die Size: 2.5 x 1.5 x 0.1 mm

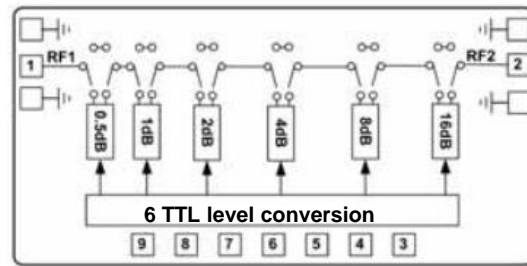
**Typical Applications**

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

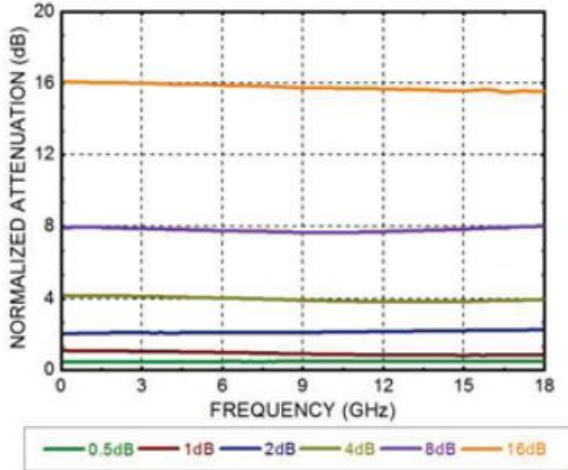
**Electrical Specifications**

TA = +25°C, Vctl = 0/5V

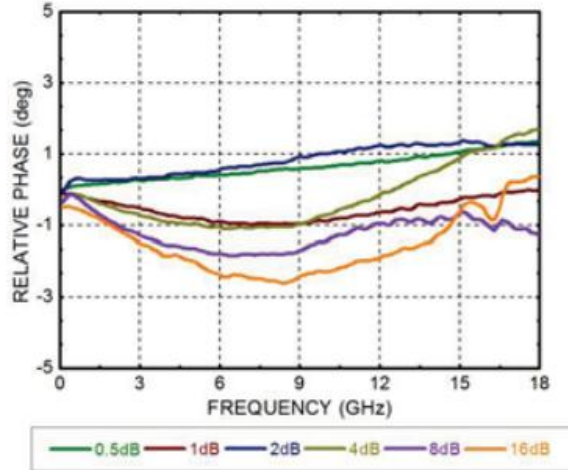
Parameters	Min.	Typ.	Max.	Units
Frequency	0.5-18			GHz
Insertion Loss		5.4		dB
Attenuation Range	0.5		31.5	dB
Return Loss (Direct State)		20		dB
Return Loss (Attenuation State)		18		dB
Input 1dB Compression (P1dB)		24		dBm
Switching Speed		50		ns

**Functional Block Diagram**


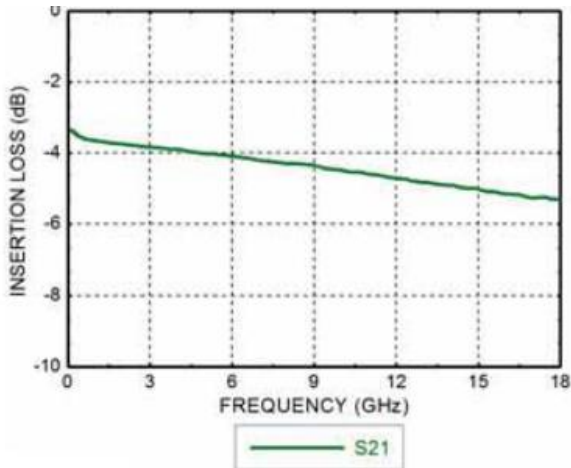
**Attenuation**



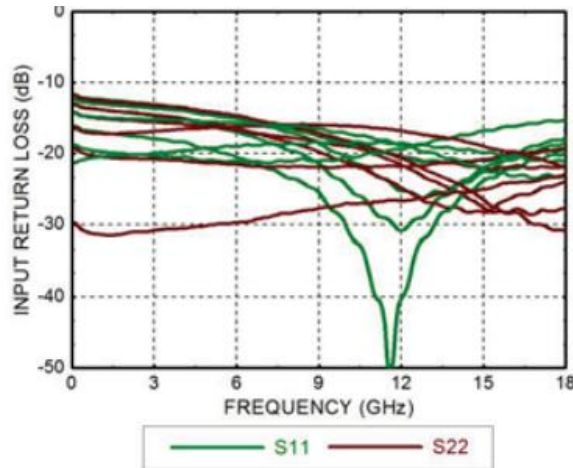
**Relative Phase vs. Frequency**



**Insertion Loss**



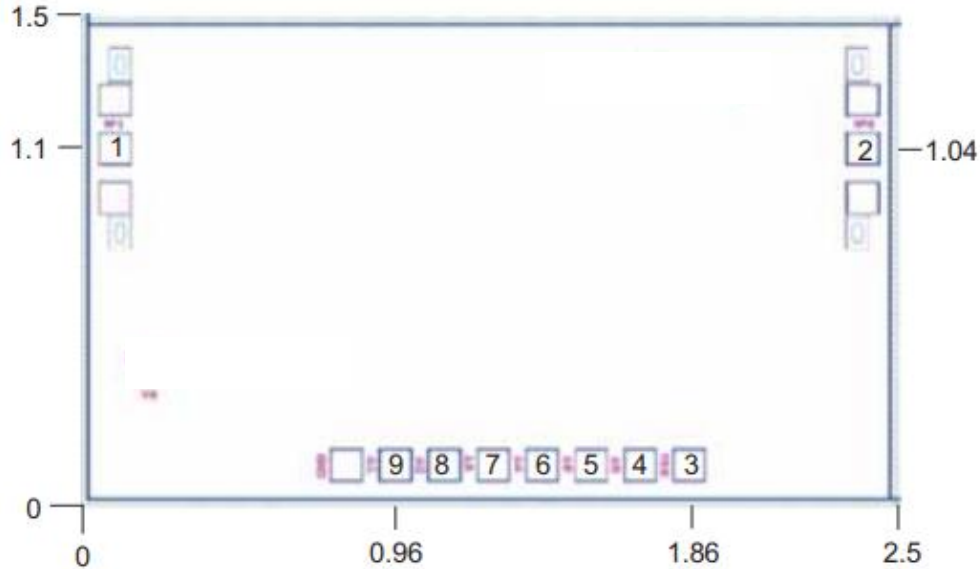
**Return Loss**





### Outline Drawing:

All Dimensions in mm

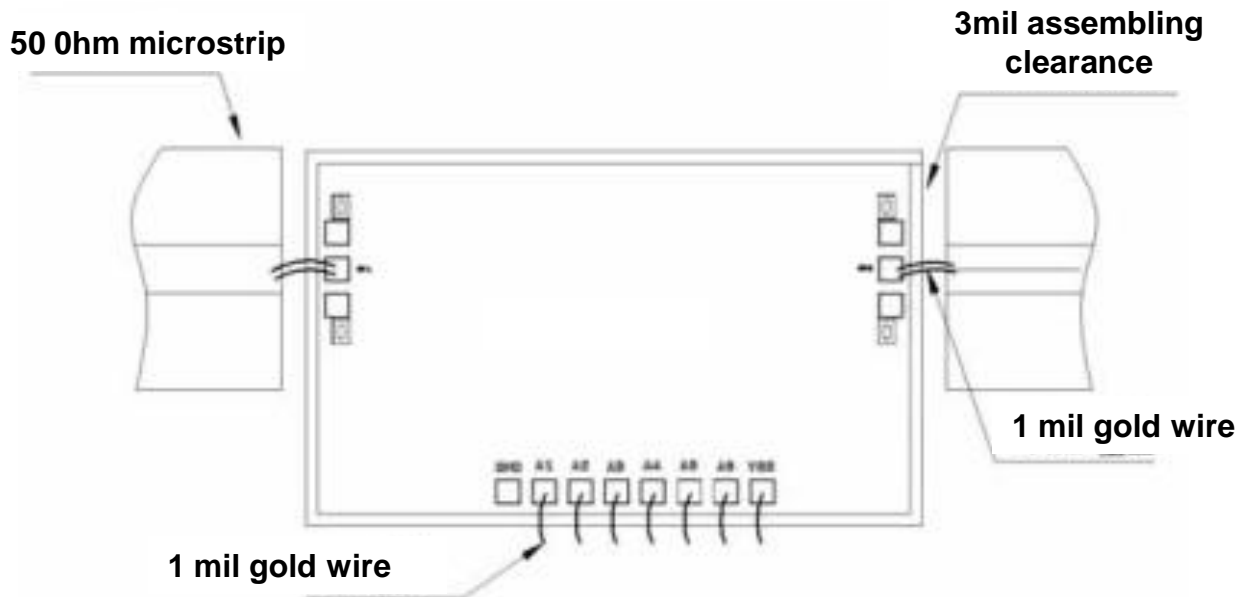


### Pad Description

PAD	Function	Description
1, 2	RF1, RF2	This pad is RF port and matched to 50Ω Impedance
3	VSS	This pad is TTL level converter power port, connected to -5v power supply.
4	16dB Damping Control End A6	A6=0V 16dB Attenuator OFF A6=5V 16dB Attenuator ON
5	8dB Damping Control End A5	A5=0V 8dB Attenuator OFF A5=5V 8dB Attenuator ON
6	4dB Damping Control End A4	A4=0V 4dB Attenuator OFF A4=5V 4dB Attenuator ON
7	2dB Damping Control End A3	A3=0V 2dB Attenuator OFF A3=5V 2dB Attenuator ON
8	1dB Damping Control End A2	A2=0V 1dB Attenuator OFF A2=5V 1dB Attenuator ON
9	0.5dB Damping Control End A1	A1=0V 0.5dB Attenuator OFF A1=5V 0.5dB Attenuator ON
Die Bottom	GND	Die bottom must be connected to RF/DC ground



### Assembly Drawing



#### Notes:

1. Die thickness: 100um
2. Typical bond pad is 100\*100  $\mu\text{m}^2$
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 +175°C
3. Operating temperature: -55°C to +85°C