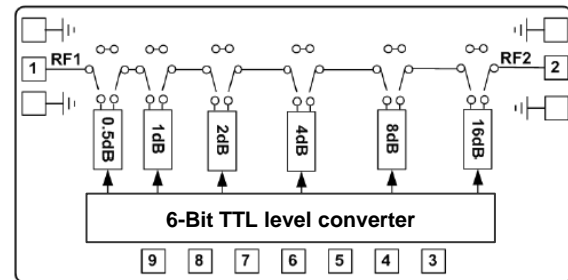


Features

- Integrated 6-Bit TTL level converter circuit
- Attenuation Range: 0.5dB ~ 31.5dB
- Attenuation Accuracy: ± 0.8 dB
- Insertion Loss : 6dB°
- Power Supply: -5V @ 6mA
- Die Size: 2.0 x 1.0 x 0.075 mm

Functional Block Diagram

Typical Applications

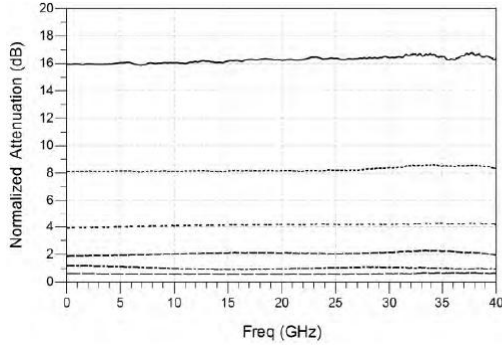
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

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

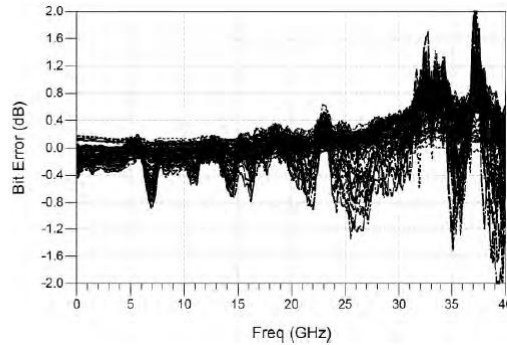
Parameters	Typ.	Typ.	Typ.	Units
Frequency	DC-20	20-30	30-40	GHz
Insertion Loss	5	5.5	6.5	dB
Attenuation Accuracy	± 0.6	± 0.8	± 1.5	dB
Input Return Loss	15	15	15	dB
Output Return Loss	15	15	15	dB
Input power 1dB Compression @1-40GHz	24	22	20	dBm
Switching Speed	30	30	30	ns



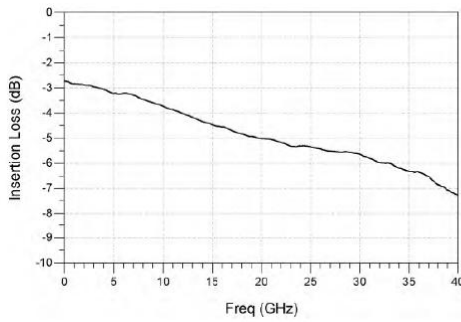
Basic State Attenuation



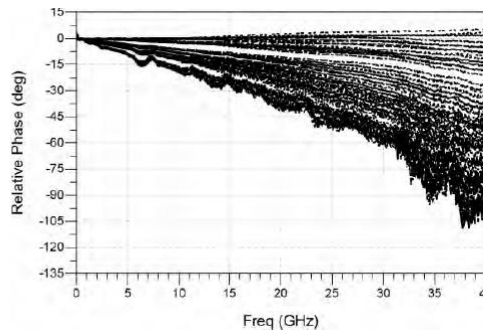
All State Attenuation Accuracy



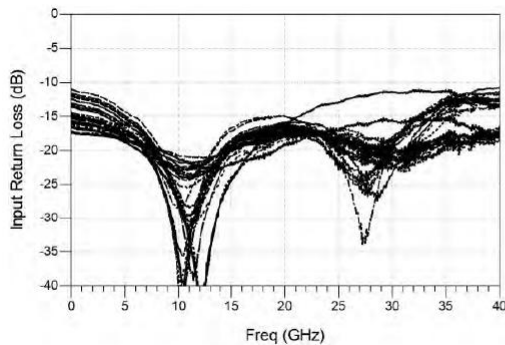
Insertion Loss



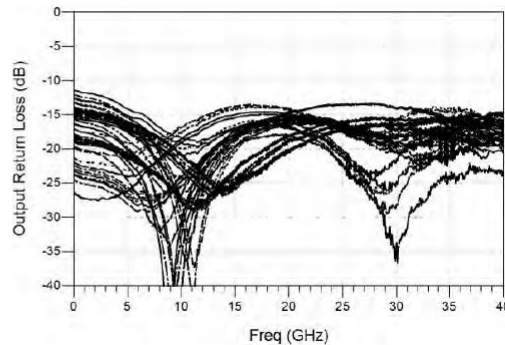
All State Attenuation Additional Phase Shift



Input Return Loss



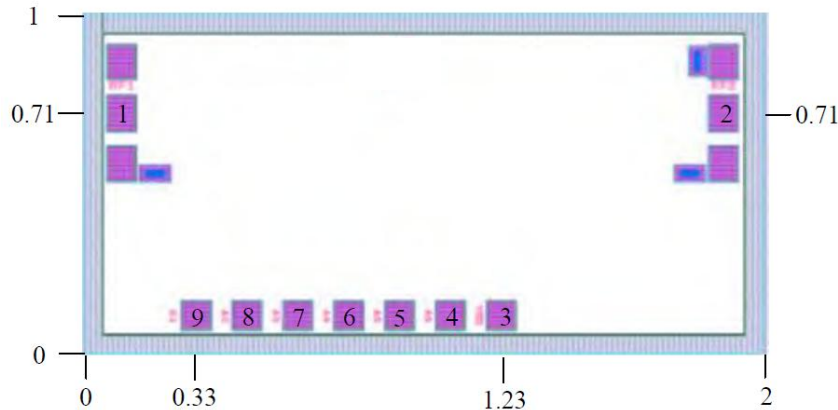
Output Return Loss





Outline Drawing:

All Dimensions in mm



Pad Description

PAD	Function	Description
1, 2	RF1, RF2	This pad is RF port, DC coupling and matched to 50Ω. If RF voltage is not 0V, then blocking capacitor is required externally.
3	VSS	This pad is TTL level converter power supply, connected to -5V.
4	16dB Attenuation Control Bit A6	When A6=0V, 16dB Attenuator OFF When A6=5V, 16dB Attenuator ON
5	8dB Attenuation Control Bit A5	When A5=0V, 8dB Attenuator OFF When A5=5V, 8dB Attenuator ON
6	4dB Attenuation Control Bit A4	When A4=0V, 4dB Attenuator OFF When A4=5V, 4dB Attenuator ON
7	2dB Attenuation Control Bit A3	When A3=0V, 2dB Attenuator OFF When A3=5V, 2dB Attenuator ON
8	1dB Attenuation Control Bit A2	When A2=0V, 1dB Attenuator OFF When A2=5V, 1dB Attenuator ON
9	0.5dB Attenuation Control Bit A1	When A1=0V, 0.5dB Attenuator OFF When A1=5V, 0.5dB Attenuator ON
Die Bottom	GND	Die bottom must be connected to RF/DC ground

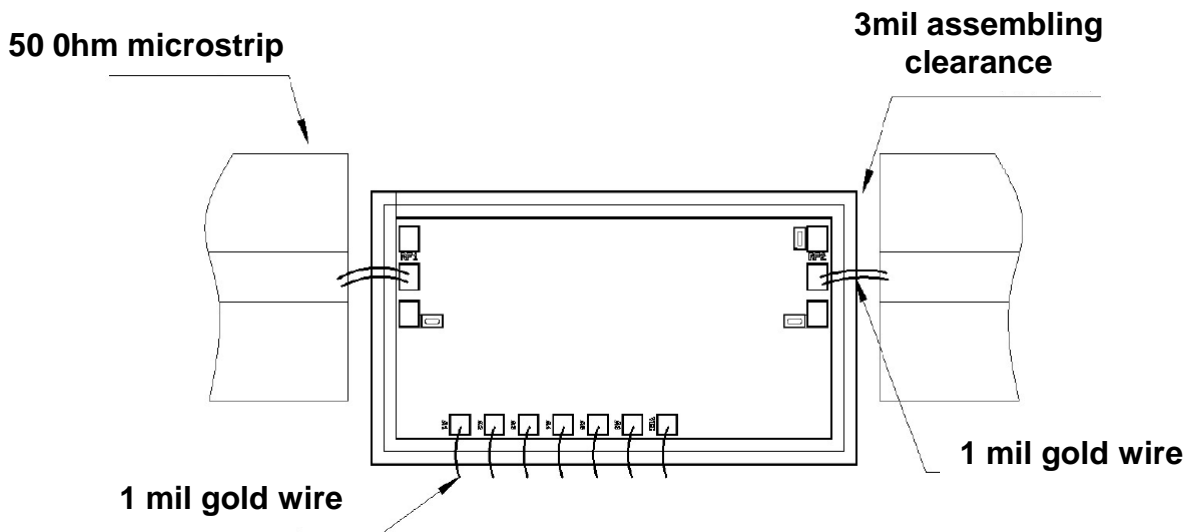


True Table

State	0.5dB	1dB	2dB	4dB	8dB	16dB
	A1	A2	A3	A4	A5	A6
Reference State	0	0	0	0	0	0
0.5dB	1	0	0	0	0	0
1dB	0	1	0	0	0	0
2dB	0	0	1	0	0	0
4dB	0	0	0	1	0	0
8dB	0	0	0	0	1	0
16dB	0	0	0	0	0	1

"0" level range: 0~0.8V, "1" level range: 2.3~5V

Assembly Drawing



Notes:

1. Die thickness: 75um
2. Typical bond pad is 100*100µm²
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