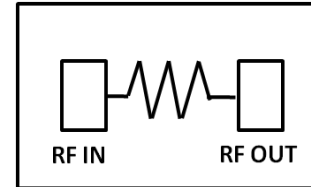


DC- 40 GHz Passive Fixed Attenuator Pads

Features

- ◆ Frequency Range DC-40GHz
- ◆ Input Return Loss ~ 20dB.
- ◆ Output Return Loss ~ 20dB.
- ◆ No External Matching required.
- ◆ 0.50 μm InGaAs pHEMT Technology.

Functional diagram



Description

ASL 1674XXX is a passive fixed attenuator MMIC chip. It features an attenuation range from 1 to 10 with 1dB step and also 15,20dB over the frequency band from DC -40 GHz with I/O return Losses that is greater than 20dB. The die is fabricated using reliable GaAs pHEMT process. The Circuit grounds are provided through on wafer vias to the backside metallization. The die is used for any suitable applications where the attenuation is required in RF & Microwave systems.

Absolute Maximum Ratings¹

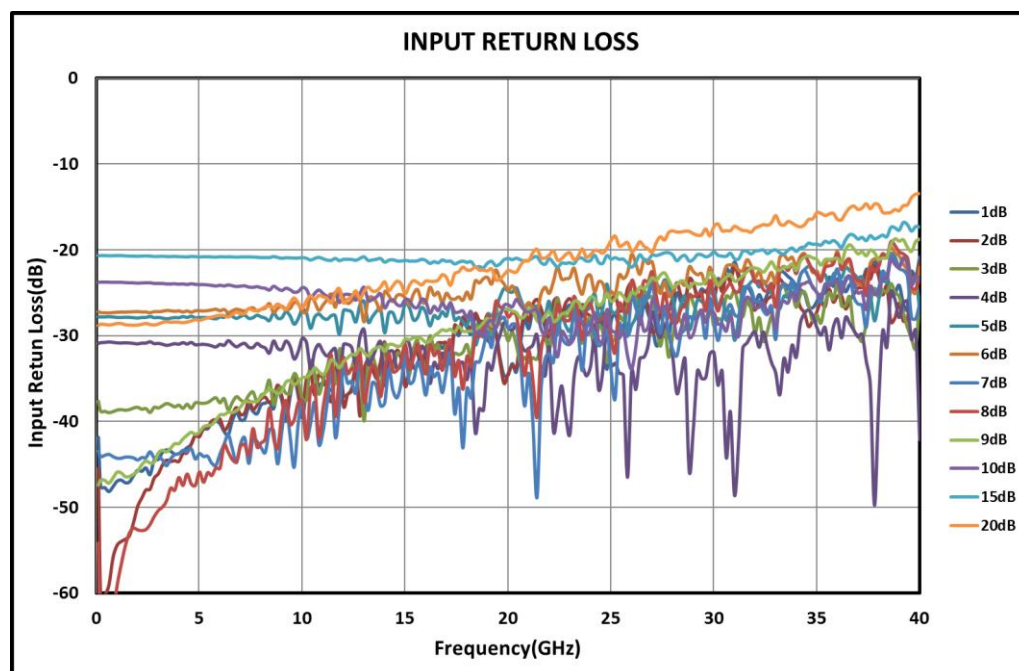
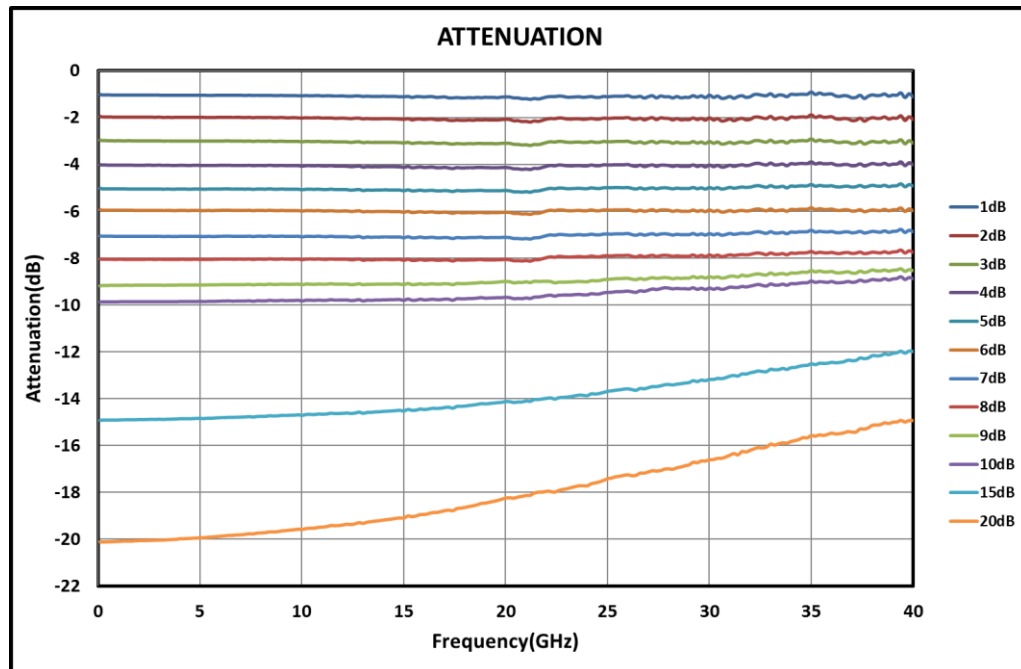
Parameter	Absolute Maximum	Units
RF input power	+30	dBm
Operating Temperature	-55 to +85	°C
Storage Temperature	-65 to +150	°C

1. Operation beyond these limits may cause permanent damage to the component

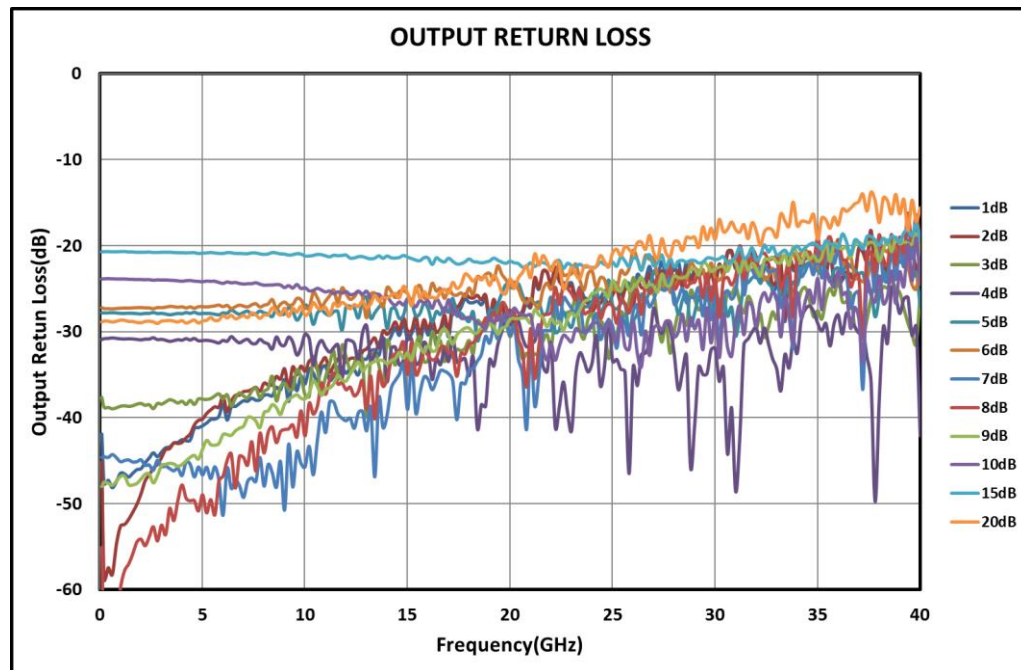
Electrical Specifications @ $T_A = 25^\circ\text{C}$, $Z_o = 50\Omega$,

Parameter	Min	Typ	Max	Units
Frequency	DC	--	40	GHz
Attenuation	1 to 10 (with 1dB step), 15, 20			dB
Attenuation Flatness	± 0.2	--	± 2.5	dB
Input Return Loss(min.)	--	20	--	dB
Output Return Loss (min.)	--	20	--	dB
Power Handling	--	25	---	dBm

On Wafer Measured Results



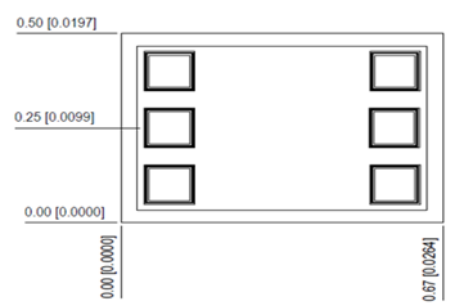
On Wafer Measured Results



For Ordering Information: Attenuator Part Numbers

Attenuation Value	Part Number	Attenuation Value	Part Number
1dB	ASL 11010	7dB	ASL 11070
2dB	ASL 11020	8dB	ASL 11080
3dB	ASL 11030	9dB	ASL 11090
4dB	ASL 11040	10dB	ASL 11100
5dB	ASL 11050	15dB	ASL 11150
6dB	ASL 11060	20dB	ASL 11200

Mechanical Characteristics



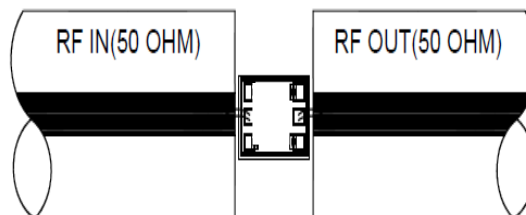
Units: millimeters

All RF bond pads are 100µm x 100µm unless specified

Note:

1. Pad No. 1 : RF INPUT
2. Pad No. 2 : RF OUT

Recommended Assembly Diagram



Note:

1. Double 1 mil (0.0254 mm) bond wire of length 500µm should be used for RF Input.
2. Double 1 mil (0.0254 mm) bond wire of length 400µm should be used for RF Output

Die attach: For Epoxy attachment, use of a two-component conductive epoxy is recommended. An epoxy fillet should be visible around the total die periphery. If Eutectic attachment is preferred, use of fluxless AuSn (80/20) 1-2 mil thick preform solder is recommended. Use of AuGe preform should be strictly avoided.

Wire bonding: For best RF performance, use of 150 - 200µm length of wedge bonds is advised. Ball bonds are also acceptable.



GaAs MMIC devices are susceptible to Electrostatic discharge. Proper precautions should be observed during handling, assembly & testing

All information and Specifications are subject to change without prior notice