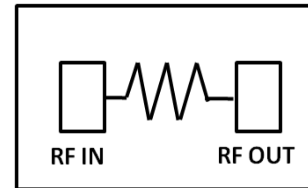
DC- 40GHz Passive Fixed Attenuator Pads

Features

- **Fixed Attenuation Pads - 0 to 20dB range**
- **Frequency Range DC - 40GHz**
- **Input Return Loss ~ 20dB.**
- **Output Return Loss ~ 20dB.**
- **No External Matching required.**
- **IPD Process Technology.**

Functional diagram



Description

ASTRA 2373XX1 is a passive fixed attenuator MMIC chip. It features an attenuation range from 0 to 10 with 1dB step,15dB and 20dB over the frequency band from DC - 40GHz with I/O return Losses that is greater than 20dB.The die is fabricated using Integrated Passive Devices Technology. The Circuit grounds are provided through on wafer ground vias to the backside metallization. The die is used for any suitable applications where the fixed attenuation is required in RF & Microwave

Absolute Maximum Ratings[1]

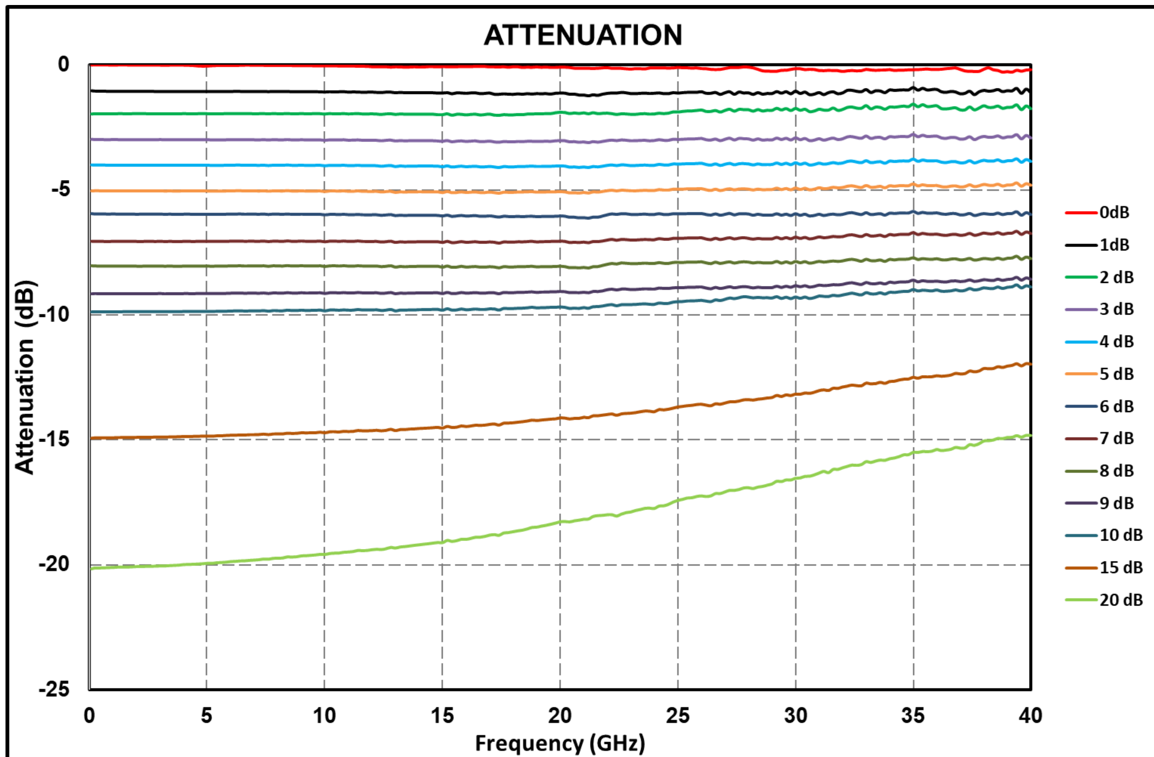
Parameter	Absolute Maximum	Units
RF input power	+30	dBm
Operating Temperature	-55 to +85	ºC
Storage Temperature	-65 to +150	ºC

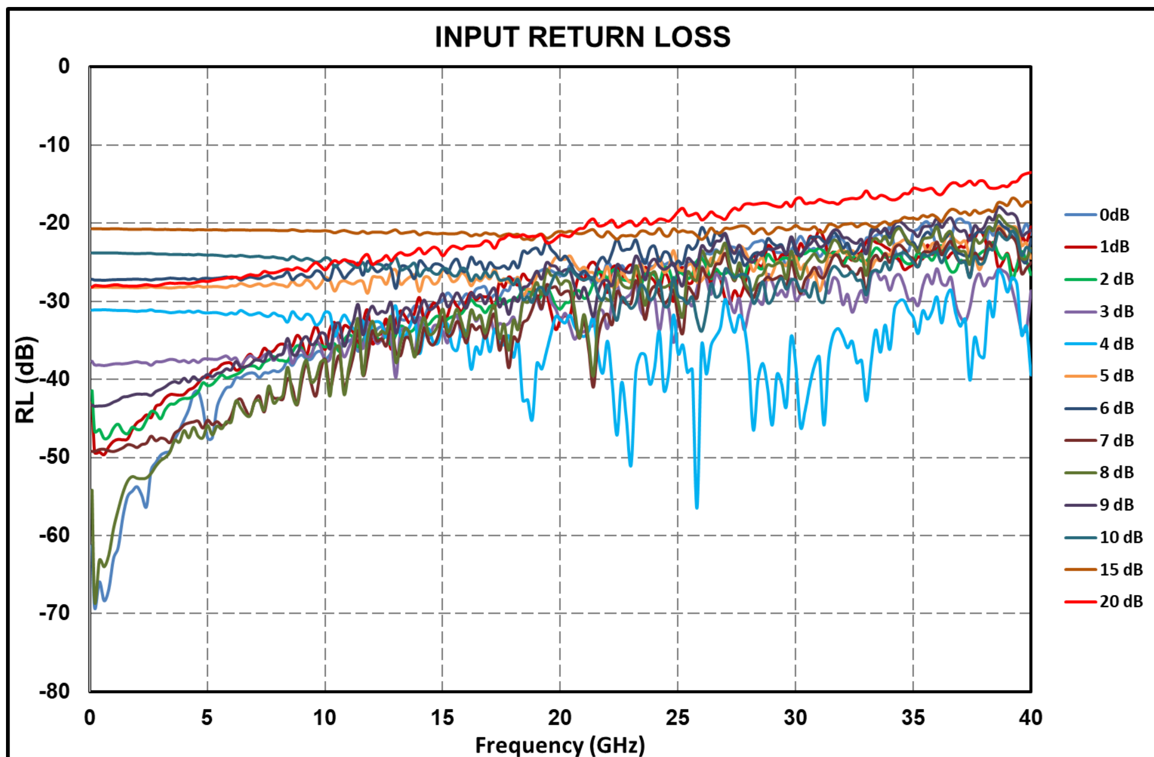
1. Operation beyond these limits may cause permanent damage to the component

Electrical Specifications @ T_A = 25 ºC, Z_o =50Ω,

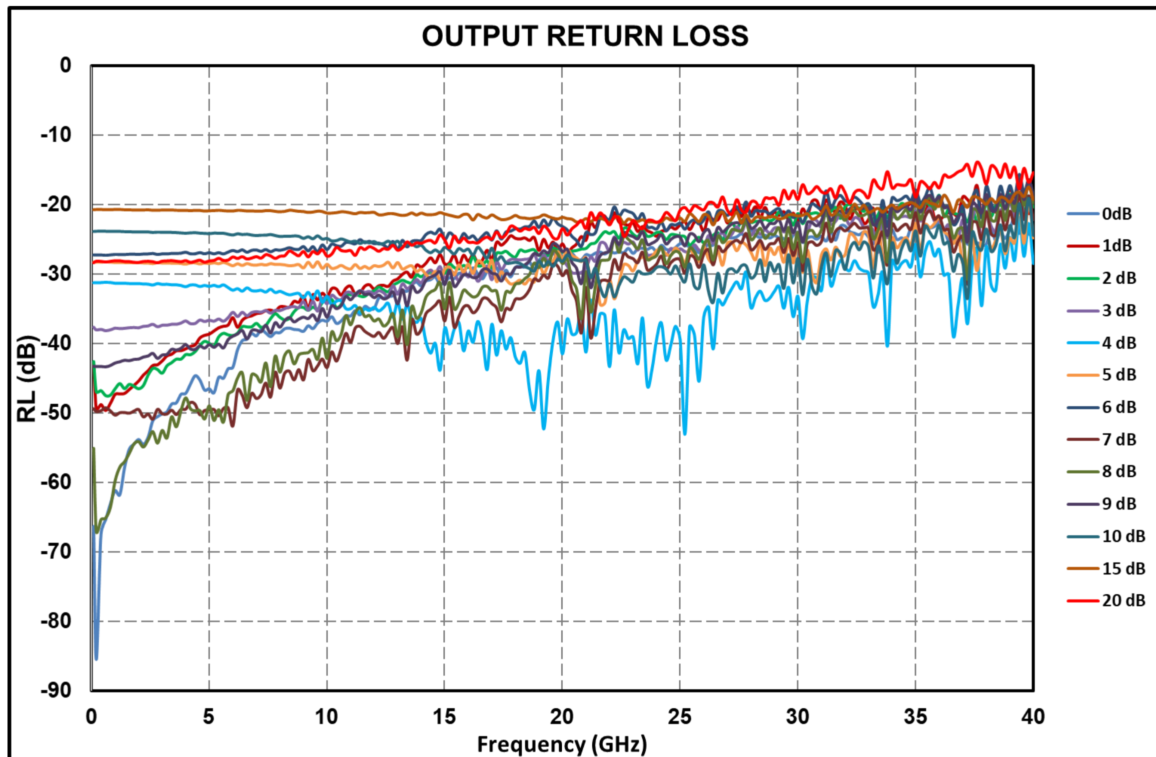
Parameter	**Min**	**Typ**	**Max**	**Units**
Frequency	DC	--	40	GHz
Attenuation	0 to 10 (with 1dB step),15 & 20			dB
Attenuation Flatness	±0.2	--	±2.5	dB
Input Return Loss(min.)	--	20	--	dB
Output Return Loss (min.)	--	20	--	dB
Power Handling	--	25	---	dBm

On Wafer Measured Results





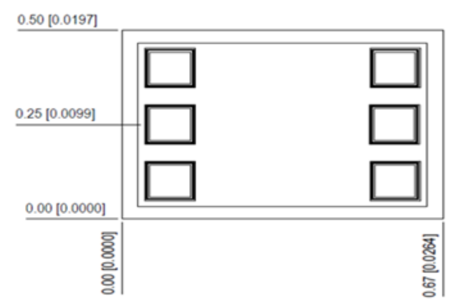
On Wafer Measured Results



For Ordering Information: Attenuator Part Numbers

Attenuation Value	Part Number		Attenuation Value	Part Number
0dB	ASTRA 2373001		7dB	ASTRA 2373071
1dB	ASTRA 2373011		8dB	ASTRA 2373081
2dB	ASTRA 2373021		9dB	ASTRA 2373091
3dB	ASTRA 2373031		10dB	ASTRA 2373101
4dB	ASTRA 2373041		15dB	ASTRA 2373151
5dB	ASTRA 2373051		20dB	ASTRA 2373201
6dB	ASTRA 2373061			

Mechanical Characteristics



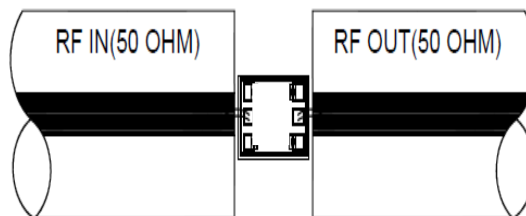
Units: millimeters

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 300um should be used for RF Input.
2. Double 1 mil (0.0254 mm) bond wire of length 300um 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

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