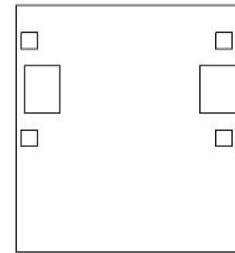


Product Features

- 6.5 dB Slope
- Excellent power handling 32 dBm
- Wide Bandwidth, DC-6 GHz
- Excellent Return Loss, 20 dB typ.

Typical Applications

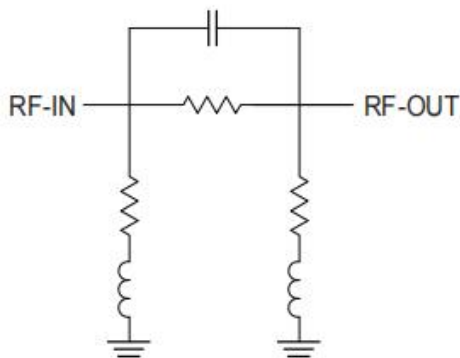
- Cellular
- PCS
- Communications
- Radar
- Defense



General Description

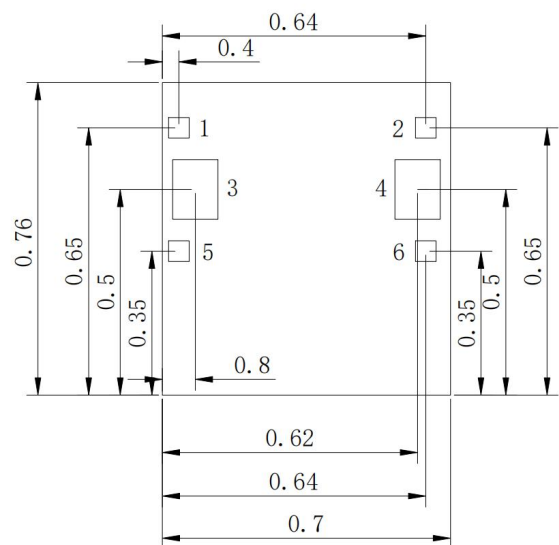
EQYT-6-63-D is an absorptive Gain Equalizer Die fabricated using highly repetitive GaAs IPD MMIC process incorporating resistors, capacitors and inductors having negative insertion loss slope. EQYT-6-63-D has a nominal attenuation slope of 6.5 dB.

Simplified Schematic and Pad description



Pad Number	Function	Description
3	RF-IN	RF-Input pad
4	RF-OUT	RF-Output pad
1,2,5,6 & Bottom of Die	GND	Ground

Bonding Pad Position



Thickness	Die Size	Bond Pad #1, #2, #5, #6	Bond Pad #3, #4
100	700x760	50 X 50	110X145

Electrical Specifications¹ at 25°C, 50Ω, unless otherwise noted.

Parameter	Condition (GHz)	Min.	Typ.	Max.	Units
Frequency Range		DC		6	GHz
Insertion Loss	0.01		7.0		dB
	1		6.1		
	2		4.2		
	3		2.6		
	4		1.5		
	5		0.8		
	6		0.5		
VSWR	0.01 -1		1.02		:1
	1 - 2		1.1		
	2 - 3		1.2		
	3 - 4		1.2		
	4 - 5		1.2		
	5 - 6		1.2		

1. Measured on Mini-Circuits Characterization Test Board. Die is packaged in 2x2mm, 8-lead MCLP and soldered on testboard TB-1041-6-63+ See Characterization Test Circuit (Fig. 1)

Absolute Maximum Ratings²

Operating Case Temperature	-40°C to 85°C
RF Input Power	32dBm

2. Permanent damage may occur if any of these limits are exceeded.

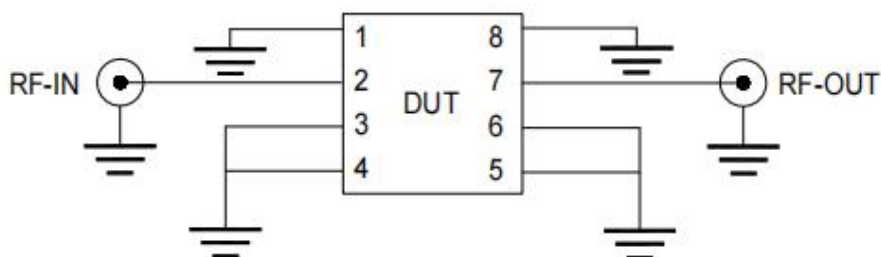
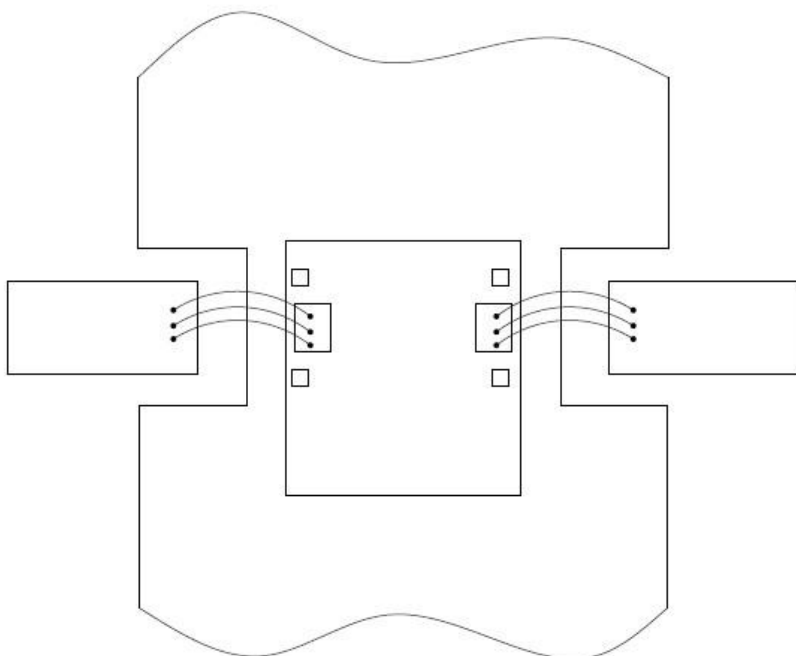
Characterization Test Circuit


Fig 1. Block Diagram of Test Circuit used for characterization. Die is packaged in 2x2mm, 8-lead MCLP and soldered on testboard TB-1041-6-63+

Conditions: Attenuation & Return Loss Pin=0 dBm

Assembly Diagram



Assembly and Handling Procedure

1. Storage

Dice should be stored in a dry nitrogen purged desiccators or equivalent.

2. ESD

MMIC GaAs Gain equalizer dice are susceptible to electrostatic and mechanical damage. Die are supplied in antistatic protected material, which should be opened in clean room conditions at an appropriately grounded anti-static workstation. Devices need careful handling using correctly designed collets, vacuum pickup tips or sharp antistatic tweezers to deter ESD damage to dice.

3. Die Attach

The die mounting surface must be clean and flat. Using conductive silver filled epoxy, recommended epoxies are DieMat DM6030HK-PT/H579 or Ablestik 84-1LMISR4. Apply sufficient epoxy to meet required epoxy bond line thickness, epoxy fillet height and epoxy coverage around total die periphery. Parts shall be cured in a nitrogen filled atmosphere per manufacturer's cure condition. It is recommended to use antistatic die pick up tools only.

4. Wire Bonding

Bond pad openings in the surface passivation above the bond pads are provided to allow wire bonding to the dice gold bond pads. Thermosonic bonding is used with minimized ultrasonic content. Bond force, time, ultrasonic power and temperature are all critical parameters. Suggested wire is pure gold, 1 mil diameter. Bonds must be made from the bond pads on the die to the package or substrate. All bond wires should be kept as short as low as reasonable to minimize performance degradation due to undesirable series inductance.