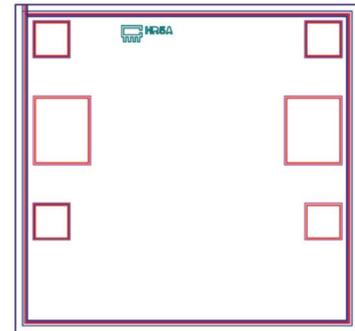


### Product Features

- 5.3 dB Slope from DC to 28 GHz  
Can work up to 30 GHz
- Good Return Loss, 17 dB typ.

### Typical Applications

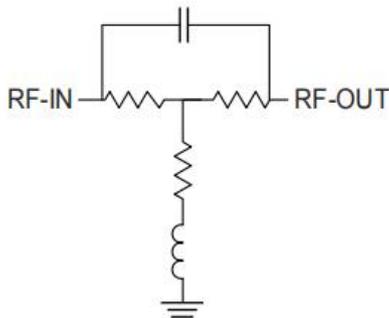
- Cellular Infrastructure
- 5G
- Wideband Communications
- Test Instrumentation
- Defense



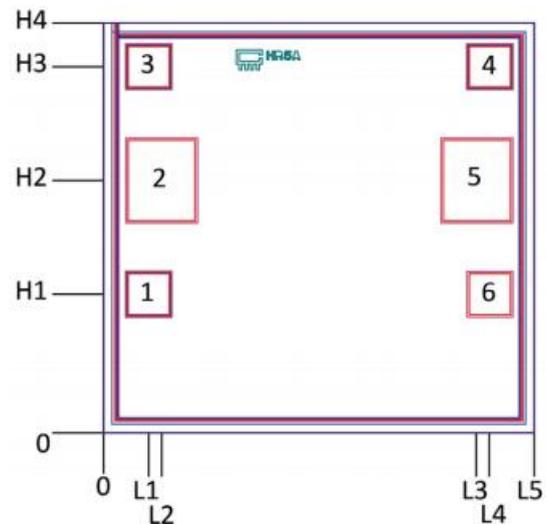
### General Description

EQYT-5-283-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-5-283-D has a nominal attenuation slope of 5.3 dB.

### Simplified Schematic and Pad description



### Bonding Pad Position



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

Dimensions in  $\mu\text{m}$ , Typical

L1	L2	L3	L4	L5	H1	H2	H3	H4	Thickness	Die Size	Pad Size 2 & 5	Pad Size 1,3,4,6
79	101	650	673	750	244	444	644	720	100	750x720	117x142	72x72

### Electrical Specifications<sup>1</sup> at 25°C, 50Ω, unless otherwise noted.

Parameter	Condition (GHz)	Min.	Typ.	Max.	Units
Frequency Range		DC		20	GHz
Insertion Loss	0.01	—	5.9	—	dB
	10	—	4.4	—	
	20	—	1.8	—	
	28	—	0.6	—	
	30	—	0.6	—	
VSWR	0.01 - 10	—	1.16	—	:1
	10 - 20	—	1.12	—	
	20 - 28	—	1.12	—	
	28-30	—	1.12	—	

1. Electrical specifications are measured with die being packaged in 2x2 6L MCLP and mounted on Characterization Test Board TB-EQYT-5-283.

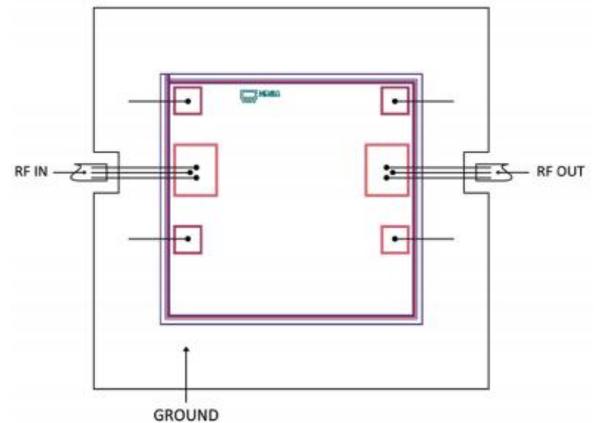
### Absolute Maximum Ratings<sup>2</sup>

Operating Case Temperature	-55°C to 105°C
RF Input Power <sup>3</sup>	30dBm

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

3. Derates linearly to 26dBm at 105° C

### 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 Ablestik 84-1LMISR4 or equivalent. 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.