

# Equalizer, 6 dB 20 GHz



MAFL-011126-DIE

Rev. V2

## Features

- 6 dB Equalizer
- Broadband: 20 GHz
- Low Insertion Loss: <1 dB
- Broadband Matched
- Wire Bondable Bare Die
- RoHS\* Compliant

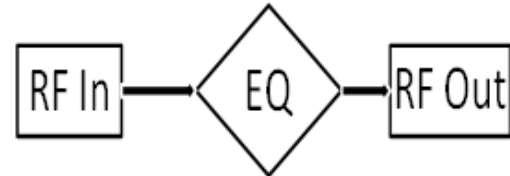
## Applications

- Cable Loss Compensation
- Amplifier Gain Slope Compensation

## Description

The MAFL-011126 equalizer is broadband matched with excellent power handling. Offering best in class RF performance in a wire bondable die.

## Functional Schematic



## Pin Configuration<sup>2</sup>

Function
RF In
RF Out
Ground

2. The exposed pad centered on the package bottom must be connected to RF, DC and thermal ground.

## Electrical Specifications: $T_A = 25^\circ\text{C}$ , $Z_0 = 50 \Omega$ , $P_{IN} = 0 \text{ dBm}$

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Insertion Loss	0 GHz 20 GHz	dB	—	6.0 0.5	—
Return Loss	0 - 20 GHz	dB	—	20	—

## Ordering Information<sup>1</sup>

Part Number	Package
MAFL-011126-DIE	Vacuum release gel pack <sup>1</sup>

1. Die quantity varies.

## Absolute Maximum Ratings<sup>3,4</sup>

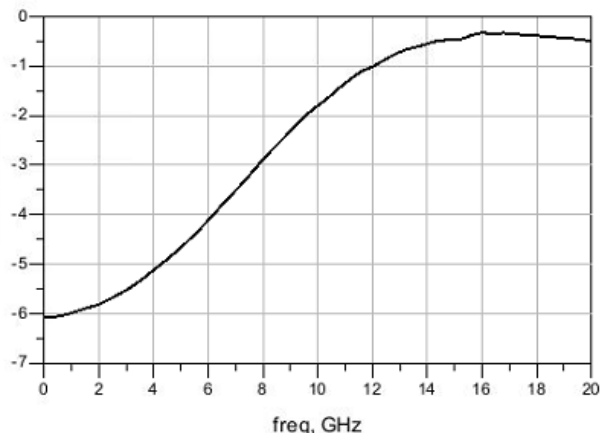
Parameter	Absolute Maximum
Input RF Power	1 W
DC Current	100 mA
Operating Temperature	-40°C to +85°C

3. Exceeding any one or combination of these limits may cause permanent damage to this device.
4. MACOM does not recommend sustained operation near these survivability limits.

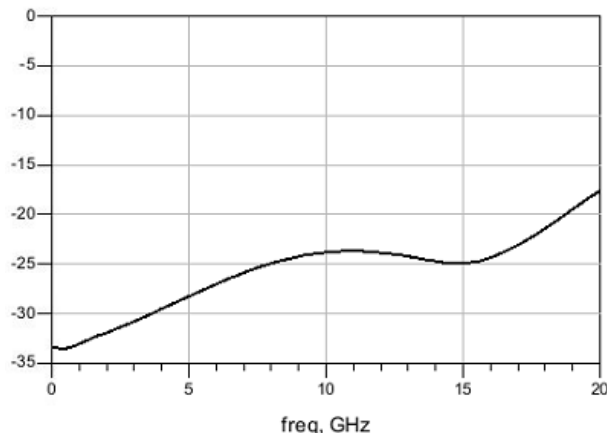
\* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

**Typical Performance Curves**

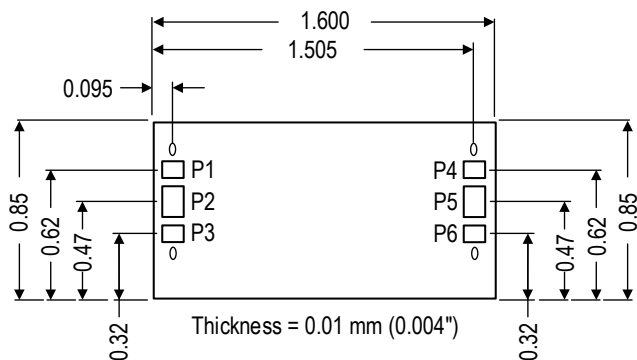
**Insertion Loss**



**Return Loss**



**Die Dimensions**<sup>5,6,7,8,9,10</sup>



**Bond Pad Dimensions (µm)**

Pad #	Size (x)	Size (y)	Description
1,3,4,6 <sup>11</sup>	70	70	GND
2 <sup>12</sup>	90	150	RF IN
5 <sup>12</sup>	90	150	RF OUT

- 5. All dimensions are shown in mm (+/- 5 µm).
- 6. DIE exterior dimensions are street center to street center.
- 7. Nominal KERF +/-20 µm.
- 8. Bond PAD / Backside metallization: Gold
- 9. DIE thickness: 100 µm (4 mil) +/-10 µm.
- 10. No exposed airbridges.
- 11. Capable of having 1 x 25 µm (1 mil) bond wire placed.
- 12. Capable of having 2 x 25 µm (1 mil) bond wire placed.

**Handling Procedures**

Please observe the following precautions to avoid damage:

**Static Sensitivity**

These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these Class 1C devices.

**Wire Bonding**

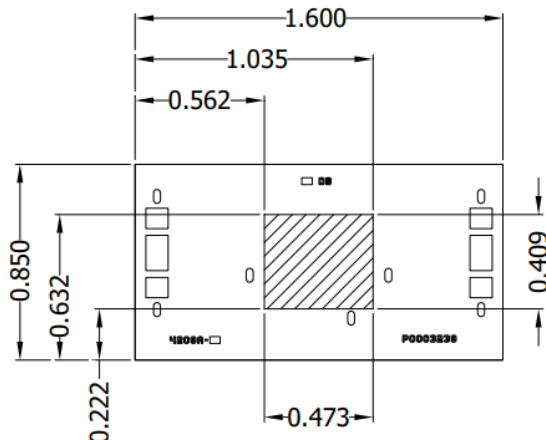
The loop height of the RF bonds should be minimized. Where the die is mounted above the PCB, it is recommended to use Reverse Ball-Stitch-on-Ball bonds (BSOB). If the die is mounted inside a cavity on the board, forward loop bonding may result in a lower loop height. V-shape RF bond with two wires (diameter = 25 µm) along with a ground bond on both sides of the RF, is recommended for optimum RF performance. RF bond wire length to be minimized to reduce the inductance effect.

**Die Attach**

For mounting the die either an electrically conductive epoxy, or an AuSn eutectic preform can be used. If using eutectic, an 80% Au / 20% Sn preform is recommended.

### Die Exclusion Area For Pickup Tool

Keep out area for surface contact type pickup collets



EXCLUSION AREA FOR PICKUP

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