

Equalizer, 12 dB 20 GHz



MAFL-011128
Rev. V1

Features

- 12 dB Equalizer
- Broadband: 20 GHz
- Low Insertion Loss: <1 dB
- Broadband Matched
- RoHS* Compliant

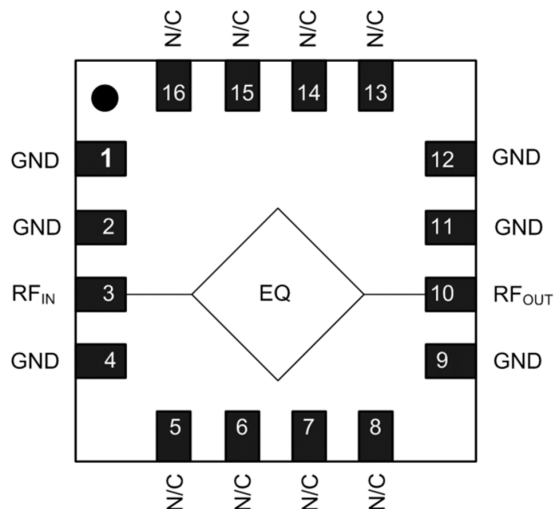
Applications

- Cable Loss Compensation
- Amplifier Gain Slope Compensation

Description

The MAFL-011128 equalizer is broadband matched with excellent power handling. Offering best in class RF performance.

Functional Schematic



Ordering Information^{1,2}

| Part Number | Package |
|--------------------|------------------|
| MAFL-011128 | Cut Tape or Tray |
| MAFL-011128-TR0100 | 100 Piece Reel |
| MAFL-011128-TR0500 | 500 Piece Reel |
| MAFL-011128-SB1 | Sample Board |

1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

Pin Names^{3,4}

| Pin # | Function |
|--------------------|---------------------|
| 1, 2, 4, 9, 11, 12 | Ground |
| 3 | Input |
| 5 - 8, 13 - 16 | N/C ³ |
| 10 | Output |
| 17 | Paddle ⁴ |

3. MACOM recommends connecting unused package pins to ground.
4. 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 | — | 12.0 0.9 | — |
| Return Loss | 0 - 20 GHz | dB | — | 20 | — |

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

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Absolute Maximum Ratings^{5,6}

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

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

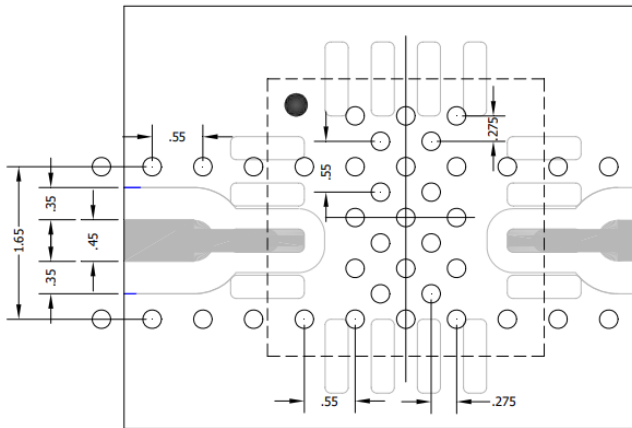
Handling Procedures

Please observe the following precautions to avoid damage:

Static Sensitivity

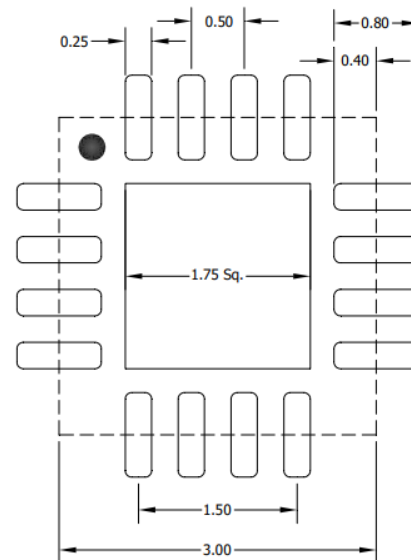
These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these Class 1C devices.

Recommended PCB Layout^{7,8,9,10,11}

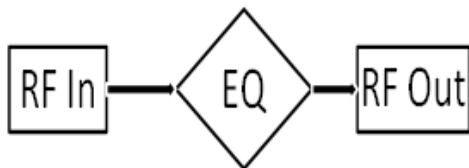


- Dielectric: 0.25 mm ROGERS 4350B.
- Copper Thickness 10 oz, ENIG Finish.
- All VIAs to be filled and over plated.
- Line width tolerance to be +/- 0.025 µm.
- Drawing dimension is in µm.

Recommended Solder Mask Openings for DUT in PCB layout



Application Schematic



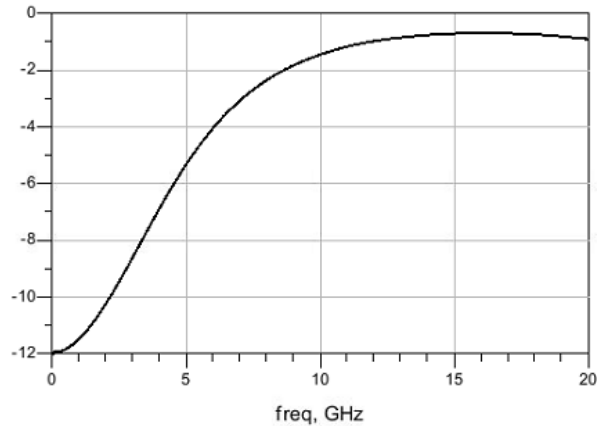
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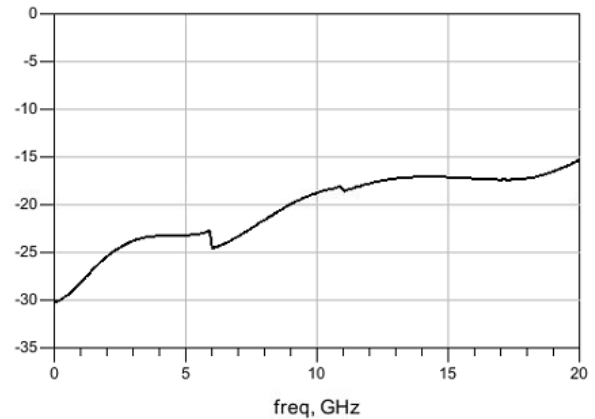
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Typical Performance Curves

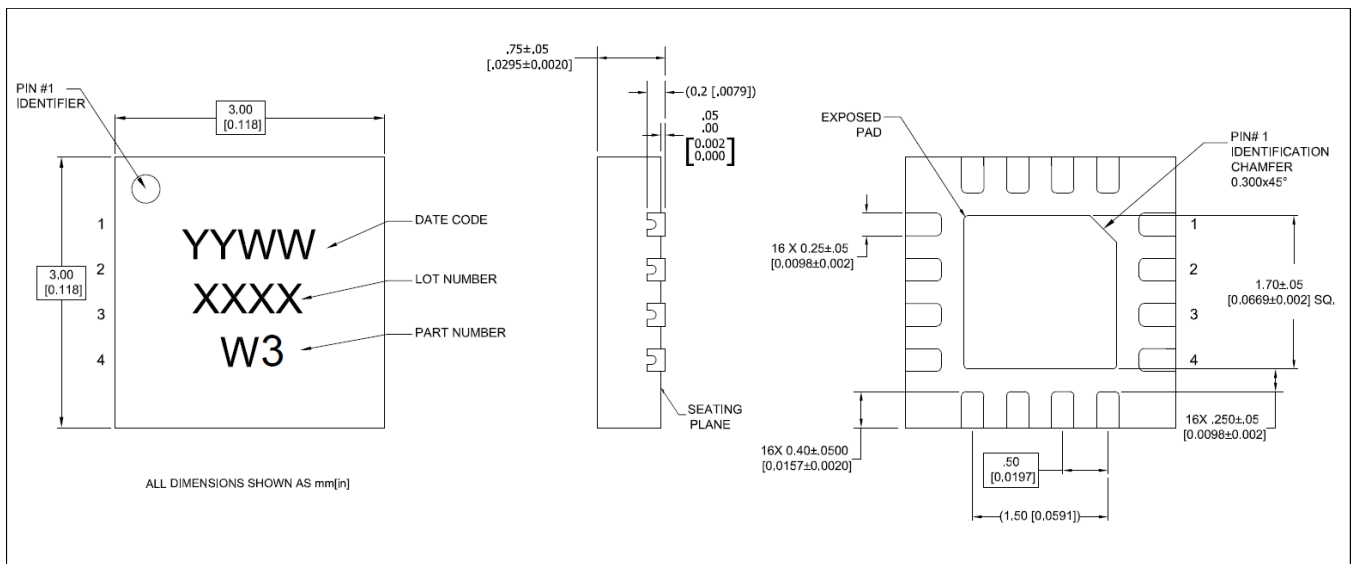
Insertion Loss



Return Loss



Lead-Free 3 mm 16-Lead PQFN[†]



[†] Reference Application Note S2083 for lead-free solder reflow recommendations.
 Meets JEDEC moisture sensitivity level (MSL) 1 requirements in accordance to JEDEC J-STD-020D.
 Plating is 100% matte tin over copper.
 Tolerance is ±0.05 mm unless otherwise noted.

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