

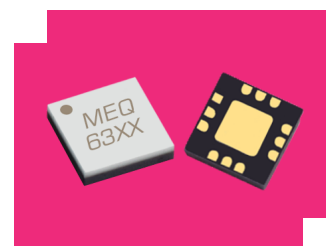
## MEQ10-7ASM

### Passive GaAs MMIC 7GHz Equalizer

## DEVICE OVERVIEW

### General Description

The MEQ10-7ASM passive MMIC equalizer QFN is an ideal solution for compensating for low pass filtering effects in RF/microwave and high speed digital systems. They provide positive slope from DC to 7GHz with DC attenuation options between 3 and 12dB. The unique design offers superior return loss to competitors. GaAs MMIC technology provides consistent unit-to-unit performance in a small, low cost form factor.



[Download s-parameters here](#)

### Features

- DC attenuation options from 3 to 12dB
- Typical Insertion Loss 1.1dB at 7GHz
- VSWR < 1.5:1 Over Entire Band

### Applications

- RF Transceivers
- High-Speed Data
- Telecom
- Cable Loss Compensation
- Amplifier Compensation

### Functional Block Diagram

N/A

### Part Ordering Options

| Part Number                   | Description                                         | Package | Packing Size | Green Status | Product Lifecycle | Export Classification |
|-------------------------------|-----------------------------------------------------|---------|--------------|--------------|-------------------|-----------------------|
| MEQ10-7ASM                    | Passive GaAs MMIC 7GHz Equalizer                    | SM      | -            |              | Released          | EAR99                 |
| <a href="#">EVAL-MEQ10-7A</a> | Evaluation Board, Passive GaAs MMIC 7 GHz Equalizer | -       | -            | RoHS         | Released          | EAR99                 |
| <a href="#">MEQ10-7A-TR</a>   | Tape and Reel, Passive GaAs MMIC 7GHz Equalizer     | SM      | 7"           |              | Released          | EAR99                 |

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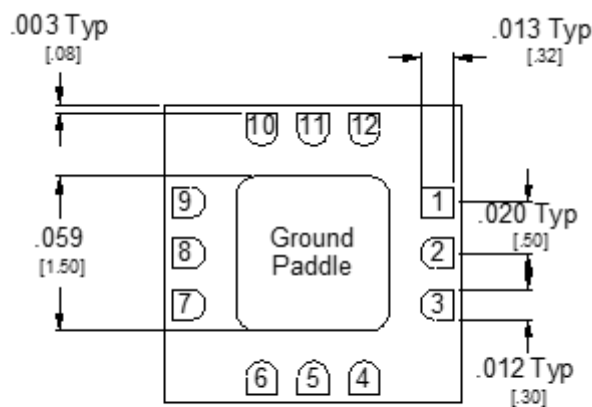
### Revision History

| Revision Code | Revision Date | Comment                                |
|---------------|---------------|----------------------------------------|
| -             | 2018-05-01    | Datasheet Initial Release              |
| A             | 2018-08-01    | Added EVAL Outline Section             |
| B             | 2018-11-01    | Updated Eval Outline Section           |
| C             | 2019-03-01    | Updated ESD Rating                     |
| D             | 2019-05-01    | Added Package Dimension Tolerance Spec |
| E             | 2019-08-01    | Added SM Footprint                     |

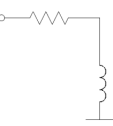
## Port Configuration and Functions

### Port Diagram

A top-down view of the MEQ10-7A CH package outline drawing is shown below. The MEQ equalizers are symmetrical allowing Port 1 or Port 2 to be used as the input.



## Port Functions

| Port  | Function          | Description                                                                                   | Equivalent Circuit for Package                                                                   |
|-------|-------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| GND   | Ground            | SM package ground path is provided through the ground paddle.                                 | <b>Pad</b>  |
| Pin 1 | RF Input / Output | Port 1 is DC connected to ground through a resistor. DC block is required if voltage present. | <b>P1</b>   |
| Pin 9 | RF Input / Output | Port 2 is DC connected to ground through a resistor. DC block is required if voltage present. | <b>P2</b>   |

### Specifications

#### Absolute Maximum Ratings

The Absolute Maximum Ratings indicate limits beyond which damage may occur to the device. If these limits are exceeded, the device may be inoperable or have a reduced lifetime.

| Parameter                     | Maximum Rating | Unit |
|-------------------------------|----------------|------|
| Maximum Operating Temperature | 100            | °C   |
| Maximum Storage Temperature   | 125            | °C   |
| Minimum Operating Temperature | -55            | °C   |
| Minimum Storage Temperature   | -65            | °C   |
| Port 1 DC Current             | 40             | mA   |
| Port 2 DC Current             | 40             | mA   |
| Power Handling, at any Port   | 30             | dBm  |

#### Package Information

| Parameter  | Details            | Rating       |
|------------|--------------------|--------------|
| ESD        | 250 to < 500 Volts | HBM Class 1A |
| Dimensions | -                  | 3x3 mm       |

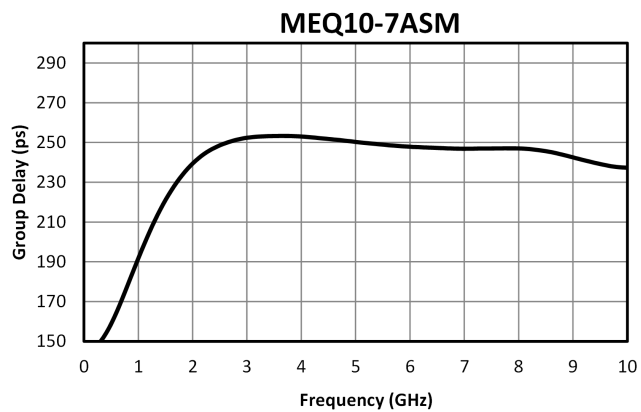
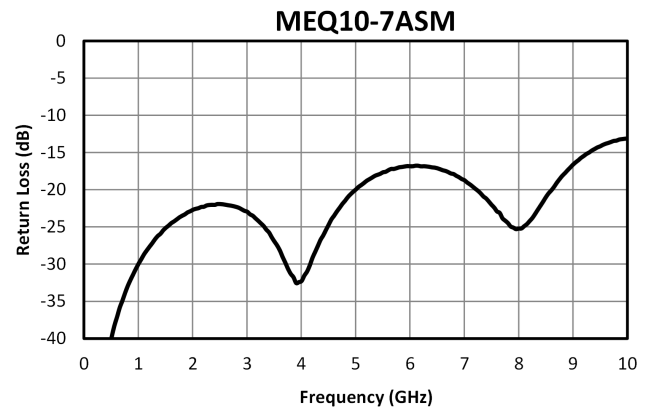
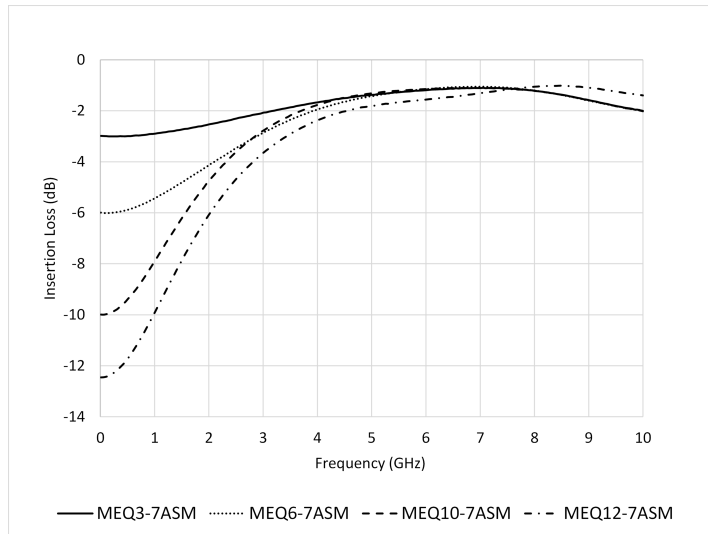
### Electrical Specifications

The electrical specifications apply at TA=+25°C in a 50Ω system. Typical data shown is for the equalizer in a CH package with a sine wave input applied to port 1. Min and Max limits are guaranteed at TA=+25°C. All bare die are 100% DC tested and visually inspected.

| Parameter      | Test Conditions | Minimum Frequency (GHz) | Maximum Frequency (GHz) | Min | Typ | Max | Unit |
|----------------|-----------------|-------------------------|-------------------------|-----|-----|-----|------|
| Insertion Loss | Freq=0GHz       | -                       | -                       | -   | 10  | -   | dB   |
| Insertion Loss | Freq=7GHz       | -                       | -                       | -   | 1.1 | -   | dB   |
| Return Loss    | Freq=0-7GHz     | 0                       | 7                       | -   | 27  | -   | dB   |

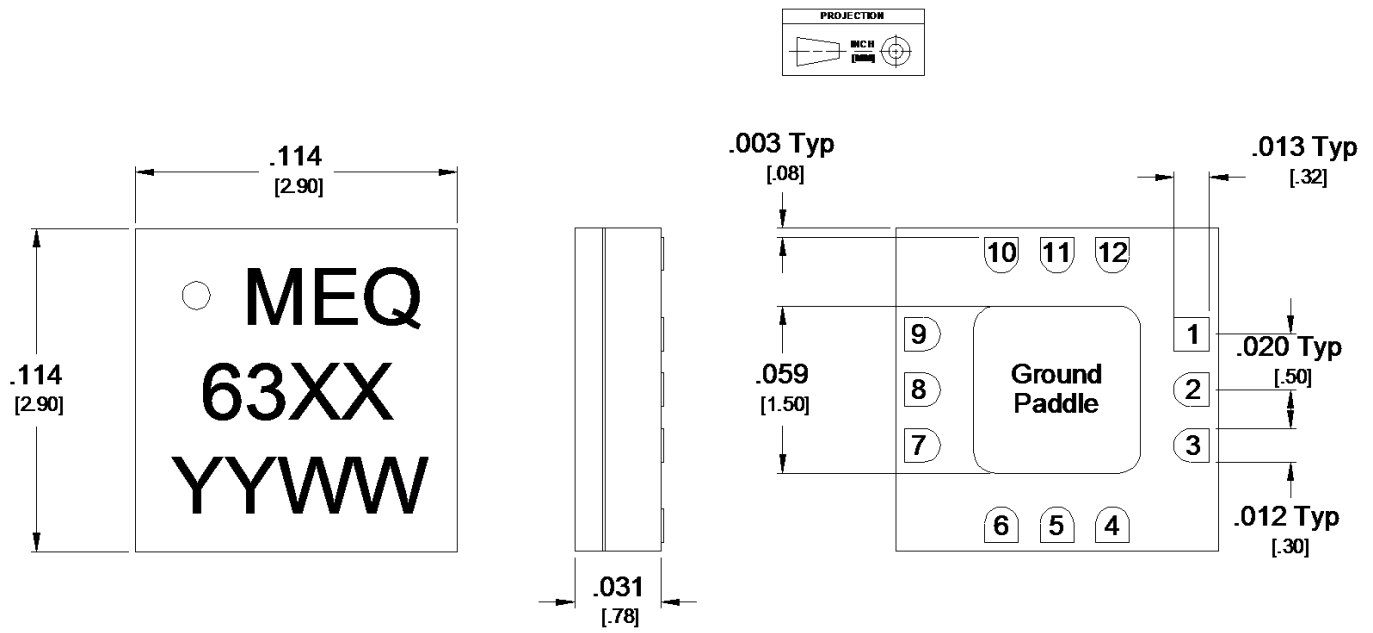
Equalizer is symmetrical. Reverse measurement is equivalent to forward measurement. All measurements taken in eval board without de-embedding.

## Typical Performance Plots

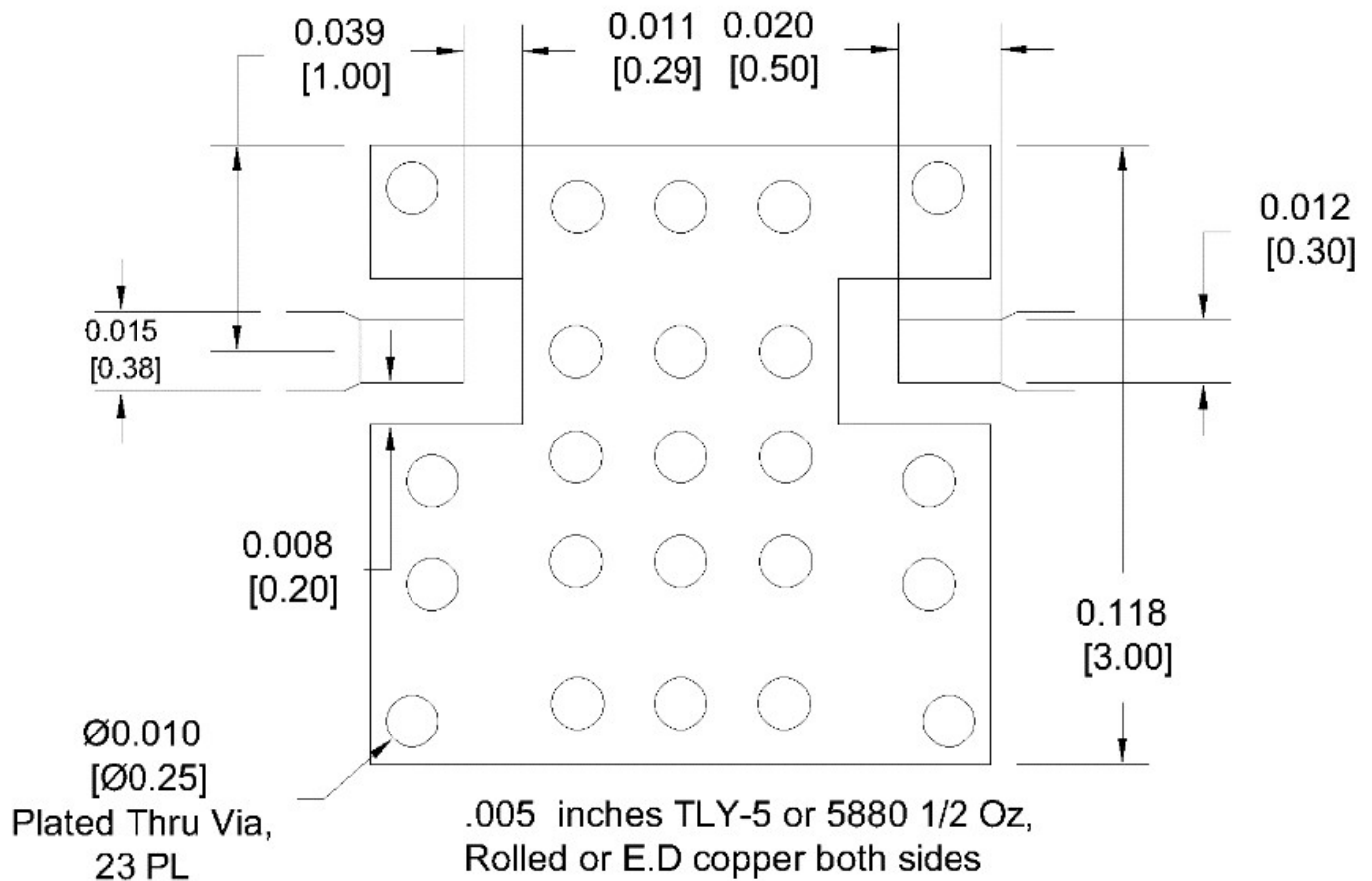


## Mechanical Data

### Outline Drawing



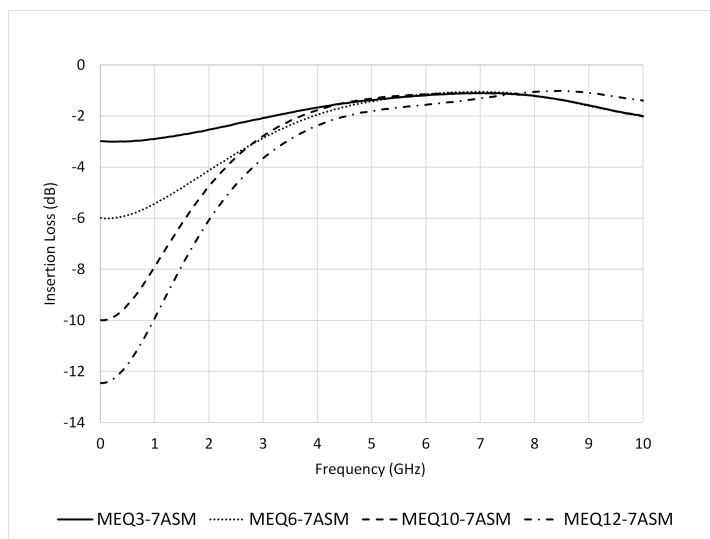
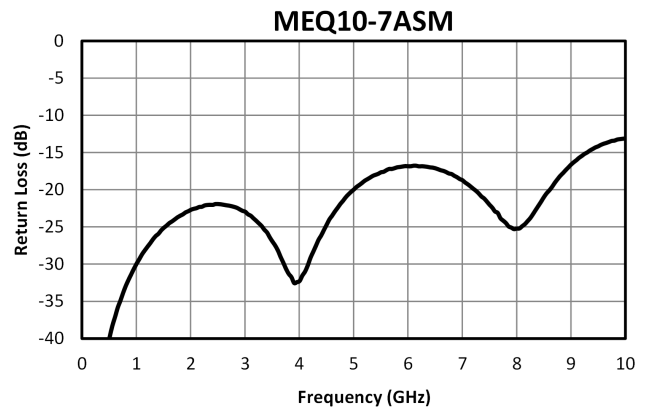
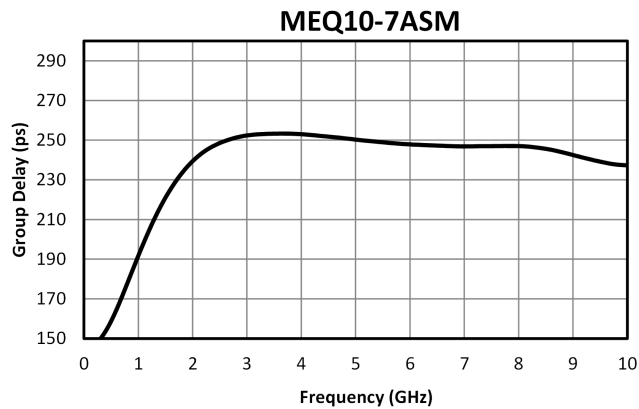
**Footprint Image**



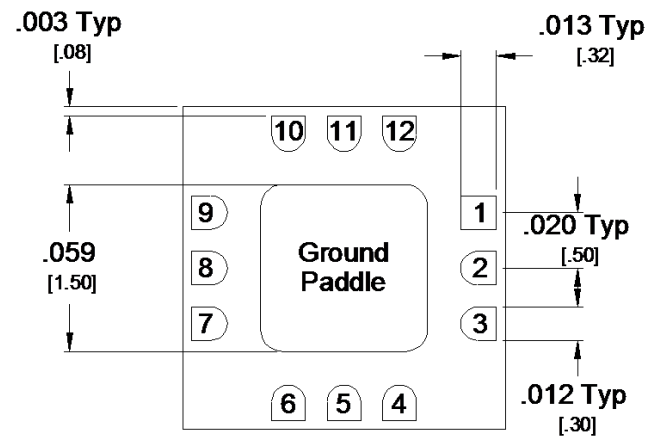
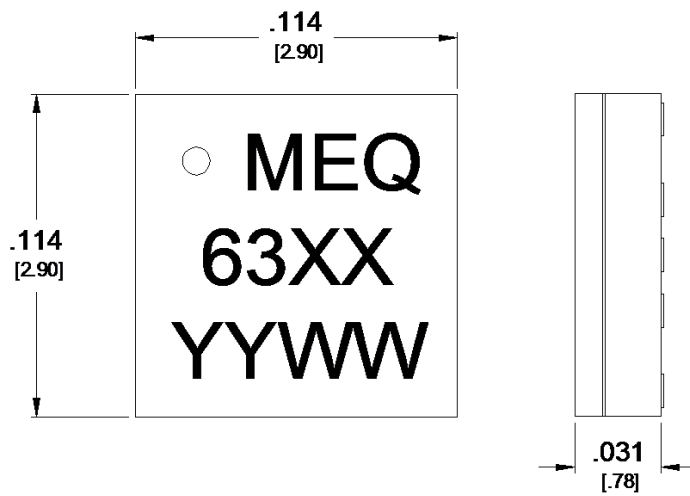
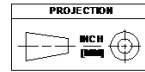
**Evaluation Board - Performance Data**

| Parameter      | Test Conditions | Frequency Range (GHz) | Min | Typ | Max | Unit |
|----------------|-----------------|-----------------------|-----|-----|-----|------|
| Insertion Loss | Freq=7GHz       | -                     | -   | 1.1 | -   | dB   |
| Return Loss    | Freq=0-7GHz     | 0 - 7                 | -   | 27  | -   | dB   |
| Insertion Loss | Freq=0GHz       | -                     | -   | 10  | -   | dB   |

## Evaluation Board - Typical Performance Plots



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