

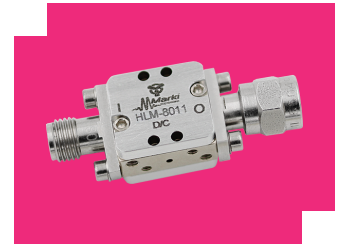
HLM-8011U

Low Flat Leakage DC-30GHz Limiter

DEVICE OVERVIEW

General Description

The HLM-8011 is a high-power GaAs Schottky diode signal limiter featuring high IP3 and high power handling. It offers low insertion loss and low return loss from DC through Ka band and has a typical 1dB compression point of +9dBm. Its low flat leakage makes it ideal for protecting sensitive components and for applications requiring high linearity. It is available as a wire bondable die and as a connectorized module.



[Download s-parameters here](#)

Features

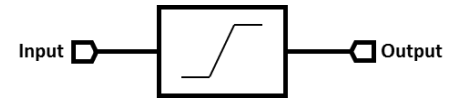
- DC to 30 GHz limiter
- 4.5W Peak Power (pulsed), 30dBm CW
- +7dBm Flat Leakage @ 1W CW
- Typical P1dB of +9dBm

Applications

N/A

Functional Block

Diagram



Part Ordering Options

Part Number	Description	Package	Connectors	Green Status	Product Lifecycle	Export Classification
HLM-8011U	Low Flat Leakage DC-30GHz Limiter	U	<u>Standard</u>	REACH RoHS	Released	EAR99

Table Of Contents

- **Device Overview**
 - General Description
 - Features
 - Applications
 - Functional Block Diagram
- **Port Configuration and Functions**
 - Port Diagram
 - Port Functions
- **Revision History**
- **Specifications**
 - Absolute Maximum Ratings
 - Package Information
 - Electrical Specifications
 - Typical Performance Plots
 - Input Power at Observed Failure
- **Mechanical Data**
 - Outline Drawing

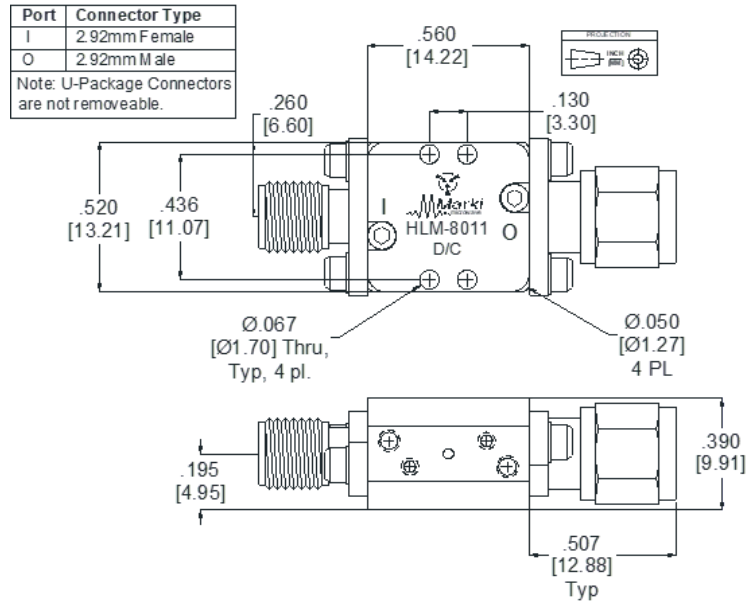
Revision History

Revision Code	Revision Date	Comment
-	2023-03-01	Initial Release


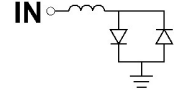

Port Configuration and Functions

Port Diagram

The HLM-8011 has the input and output ports given in Port Functions.



Port Functions

Port	Function	Connector Type	Description	Equivalent Circuit for Package
GND	Ground	-	U package ground provided through metal housing and outer coax conductor.	GND 
IN	Input	2.92F	The input port is diode connected for the U package.	IN 
OUT	Output	2.92M	The output port is diode connected for the U package.	OUT 

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

Package Information

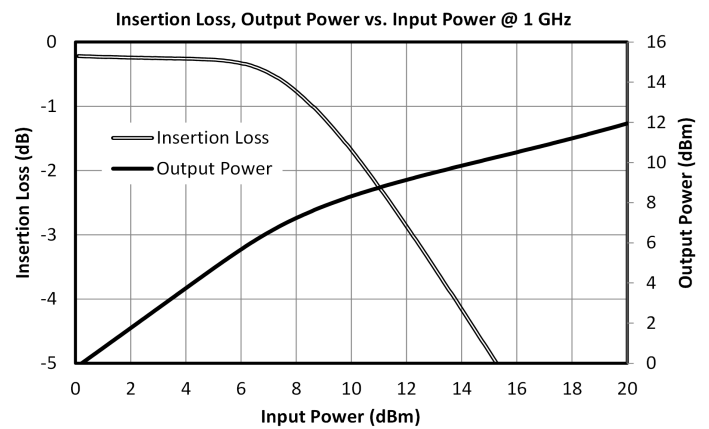
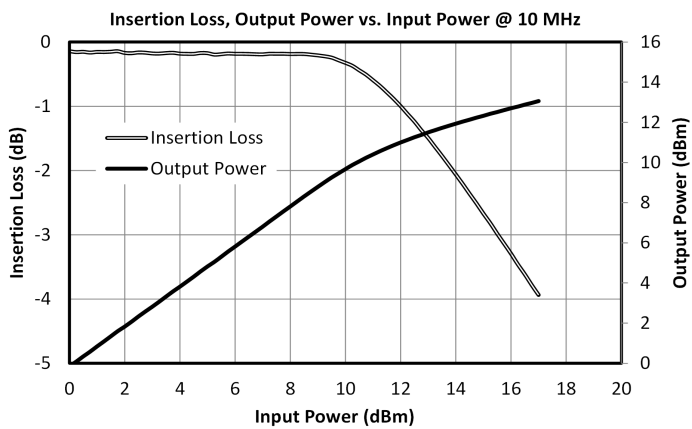
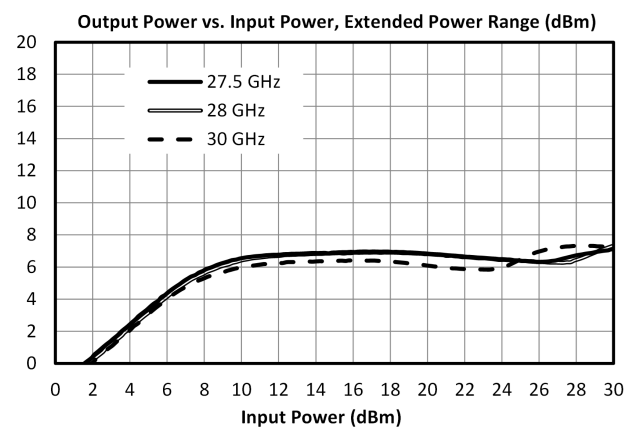
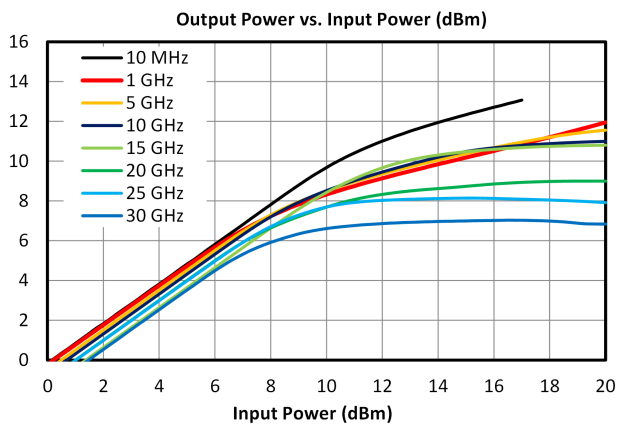
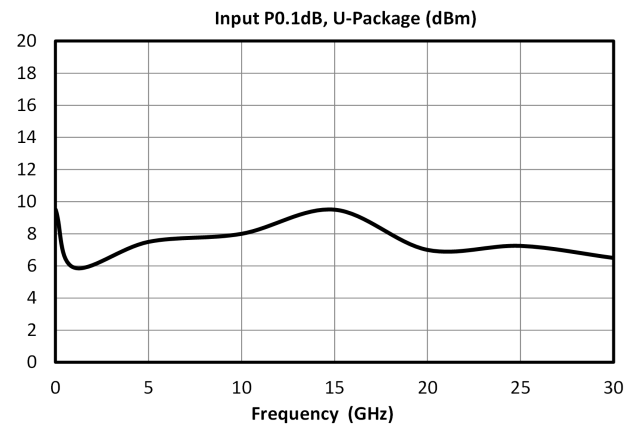
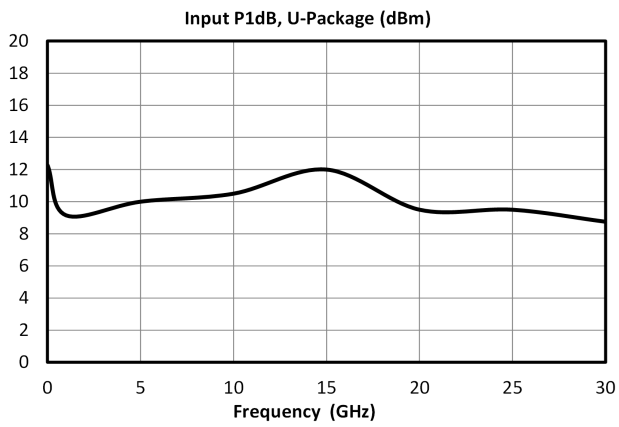
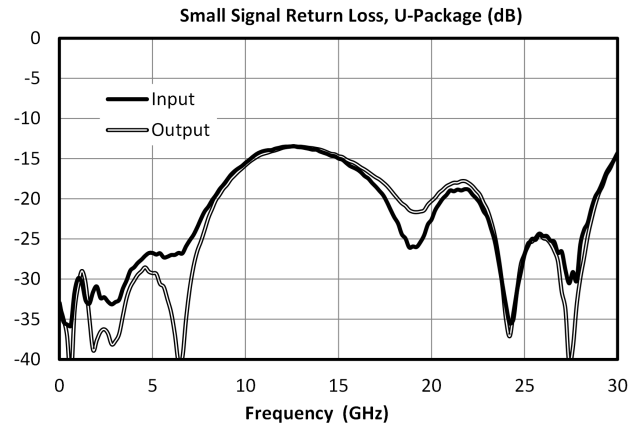
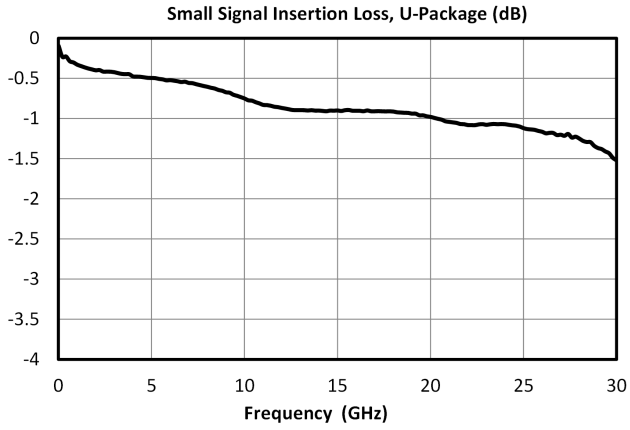
Parameter	Details	Rating
ESD	250 to < 500 Volts	HBM Class 1A
Weight	Package name: U	10g
Dimensions	-	14.22 x 13.21mm

Electrical Specifications

The electrical specifications apply at TA=+25°C in a 50Ω system. Typical data shown is for the connectorized U-package limiter unless otherwise specified. Linear Specifications valid for input power up to the 0.1dB compression point. See Typical Performance Plots for P0.1dB graph. Min and Max limits are guaranteed at TA=+25°C.

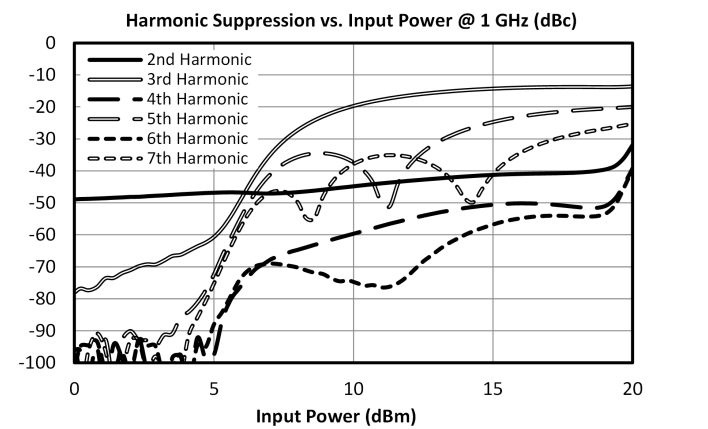
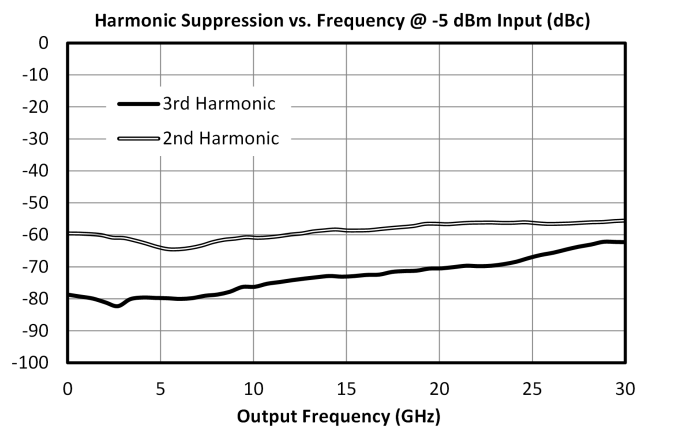
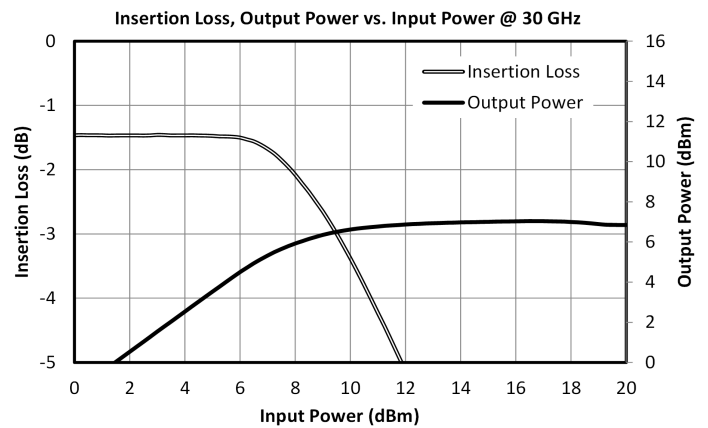
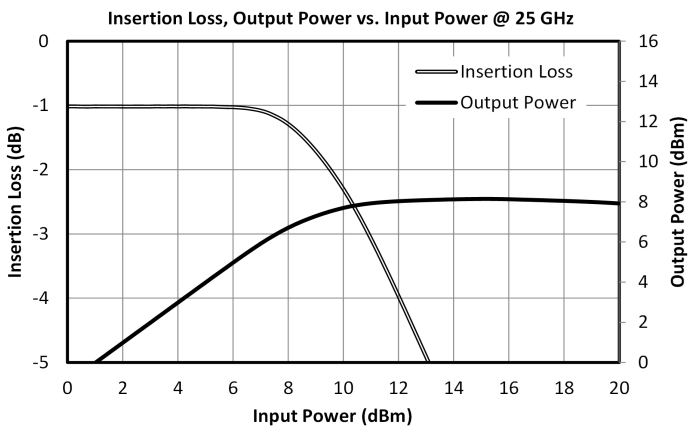
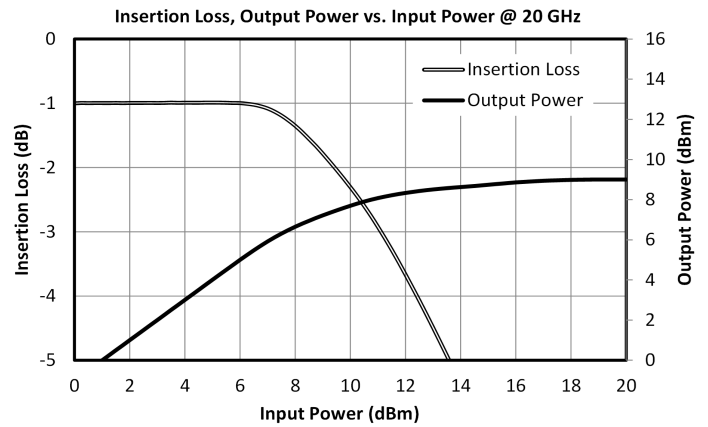
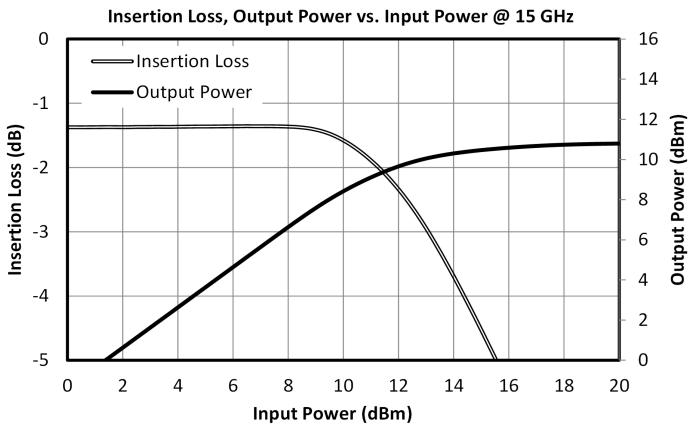
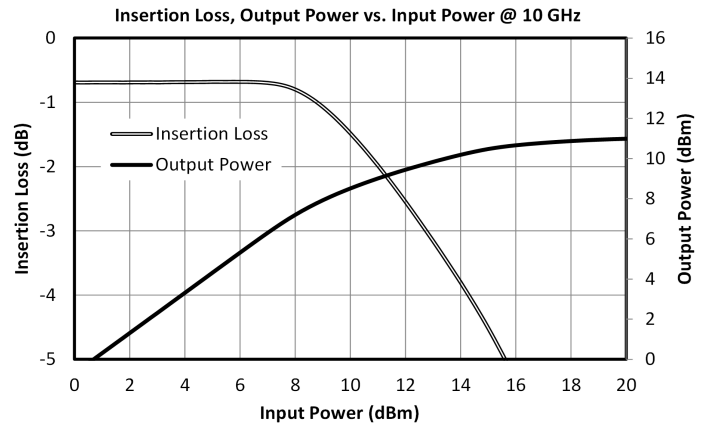
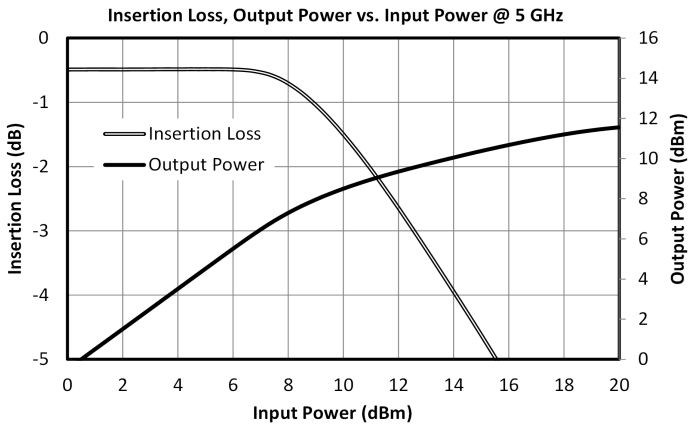
Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
Insertion Loss	-	0	30	-	0.8	2.5	dB
Return Loss	-	0	30	-	24	-	dB
Flat Leakage	-	30	30	-	7	-	dBm
Input P1dB	-	0	30	-	10	-	dBm
Flat Leakage at 1W	-	0	30	-	7	-	dBm

Typical Performance Plots



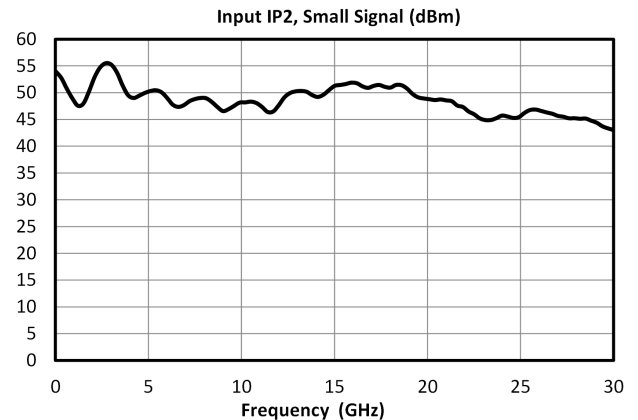
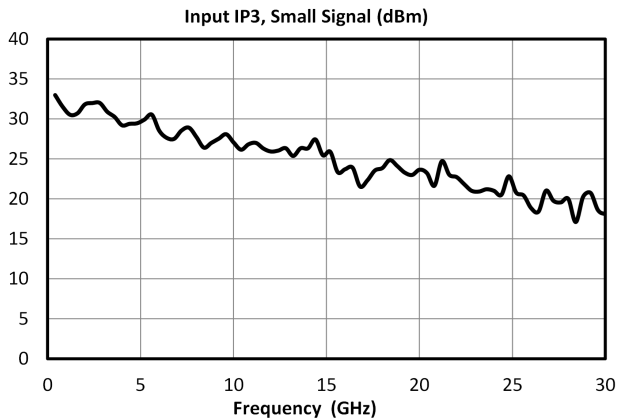
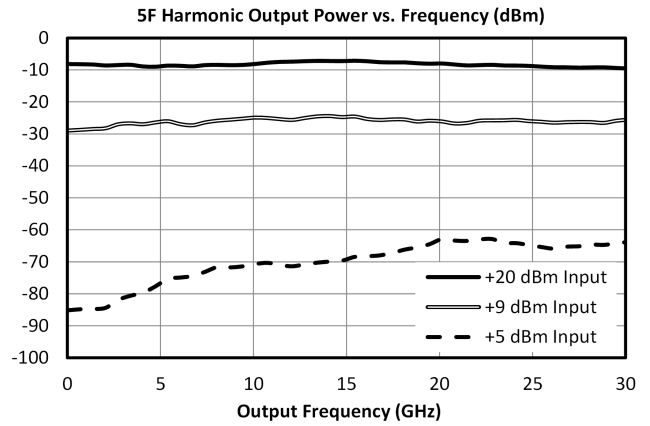
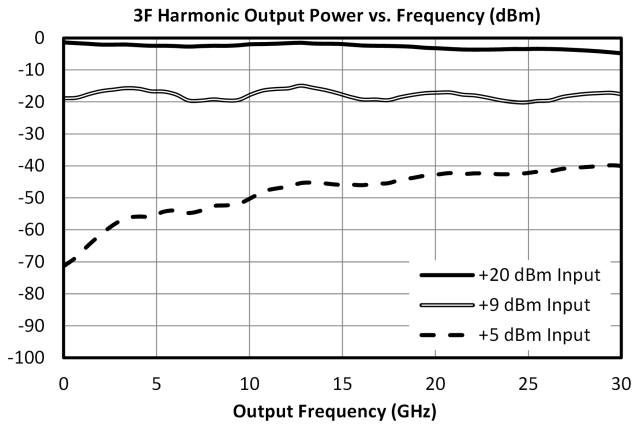
HLM-8011U

Low Flat Leakage DC-30GHz Limiter



HLM-8011U

Low Flat Leakage DC-30GHz Limiter



Input Power at Observed Failure

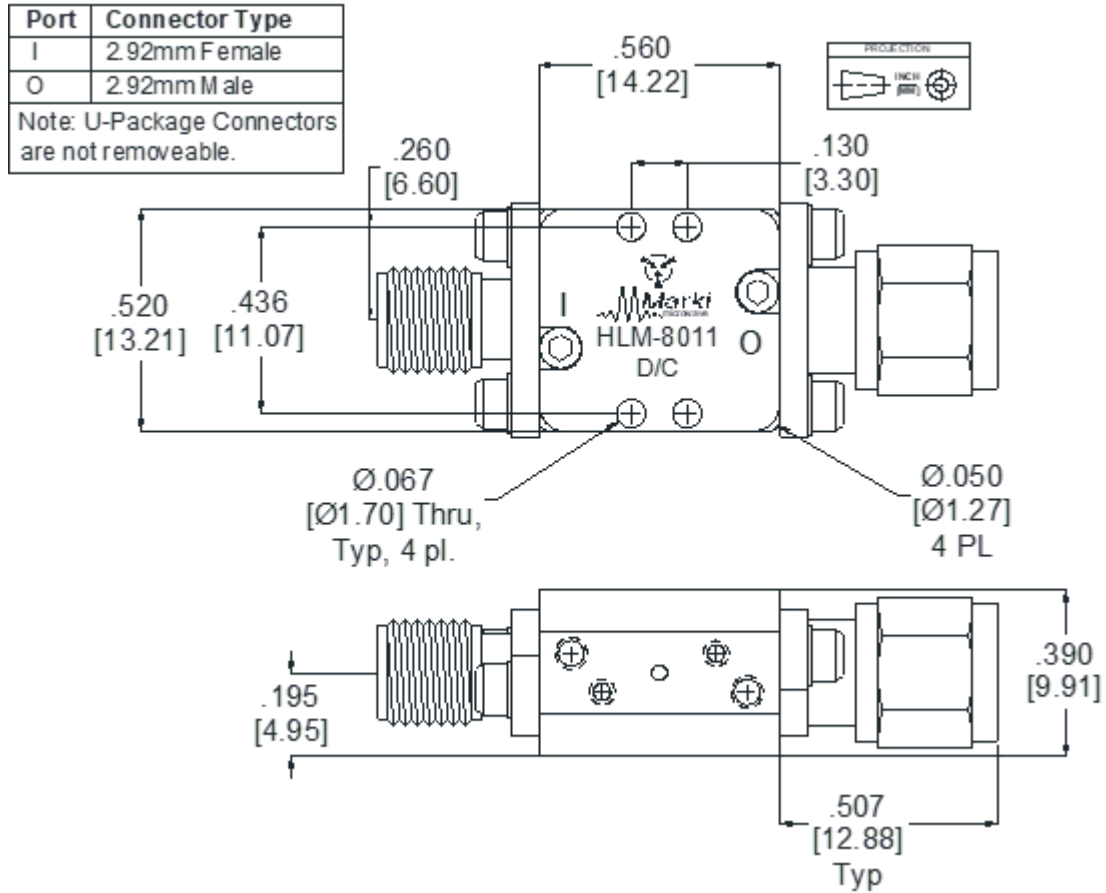
Power handling specification is based on tests performed at different combinations of temperature and frequency. Input power was increased until catastrophic failure was observed. Results are shown in the following table. The power handling specification listed in the Absolute Maximum Ratings section is based on the worst observed power handling derated by 3dB.

Frequency	Maximum Average Power Handling	Unit	Frequency	Maximum Peak Power Handling	Unit
2 GHz	+36.5	dBm	2 GHz	13	W
30 GHz	+33.0	dBm	18 GHz	9	W

Mechanical Data

Outline Drawing

Download : [Outline 3D Drawing](#) | [Outline 3D STP](#)



DISCLAIMER

MARKI MICROWAVE, INC., ("MARKI") PROVIDES TECHNICAL SPECIFICATIONS AND DATA (INCLUDING DATASHEETS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, AND OTHER INFORMATION AND RESOURCES "AS IS" AND WITH ALL FAULTS. MARKI DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT.

These resources are intended for developers skilled in the art designing with Marki products. You are solely responsible for (1) selecting the appropriate products for your application, (2) designing, validating, and testing your application, and (3) ensuring your application meets applicable standards and other requirements. Marki makes no guarantee regarding the suitability of its products for any particular purpose, nor does Marki assume any liability whatsoever arising out of your use or application of any Marki product. Marki grants you permission to use these resources only for development of an application that uses Marki products. Other reproduction or use of these resources is strictly prohibited. No license is granted to any other Marki intellectual property or to any third-party intellectual property. Marki reserves the right to make changes to the product(s) or information contained herein without notice.

MARKI MICROWAVE and T3 MIXER are trademarks or registered trademarks of Marki Microwave, Inc. All other trademarks used are the property of their respective owners.

© 2023, Marki Microwave, Inc