

HLM-70CSP2

DC - 70GHz Chip Scale Package Limiter

DEVICE OVERVIEW

General Description

The HLM-70CSP2 is a high-linearity GaAs Schottky diode signal limiter featuring high IP3 over a broad DC - 70GHz bandwidth. It offers low insertion loss and excellent return loss over a wide operating bandwidth. Its small size makes it ideal for protecting sensitive components and for applications requiring high channel counts. It is available as a plastic surface mount chip scale package or as a connectorized evaluation board.



Features

N/A

Applications

- RF Transceivers
- Test and Measurement Equipment
- SATCOM

Functional Block

Diagram



Part Ordering Options

Part Number	Description	Package	Green Status	Product Lifecycle	Export Classification
HLM-70CSP2	DC - 70GHz Chip Scale Package Limiter	CSP2	REACH RoHS	Released	EAR99
<u>EVB-HLM-70CSP2</u>	DC - 70 GHz Chip Scale Package Limiter	EVB		Released	-

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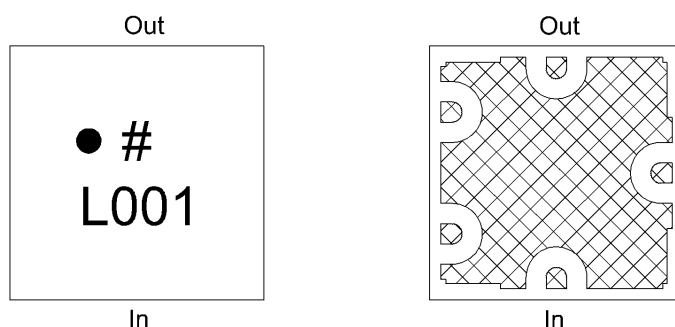
Revision History

Revision Code	Revision Date	Comment
-	2024-06-03	Initial Release

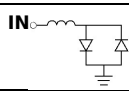
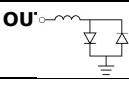
Port Configuration and Functions

Port Diagram

A top-down view of the HLM-70CSP2's CSP2 package outline drawing is shown below. The HLM-70CSP2 has the input and output ports given in Port Functions.



Port Functions

Port	Function	Description	Equivalent Circuit for Package
Ground Paddle	Ground	CSP2 package ground path is provided through the ground paddle and should be connected to RF ground	GND 
IN	Input	The input port is diode connected for the CSP2 and EVAL package.	IN 
Out	Output	The output port is diode connected for the CSP2 and EVAL package.	OU 

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
RF Power Handling , Average	1	W

Package Information

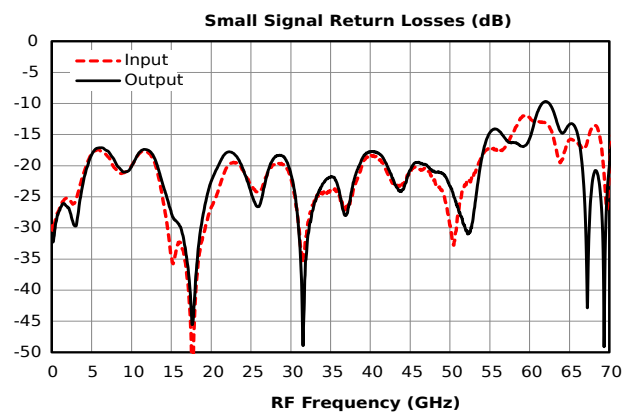
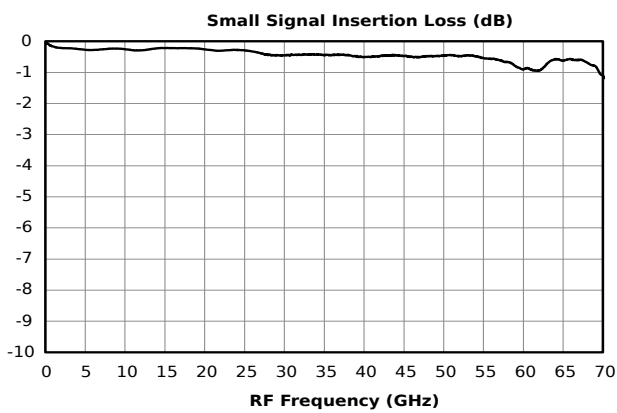
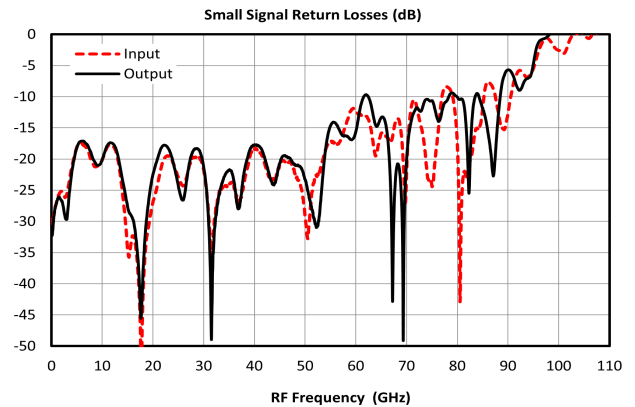
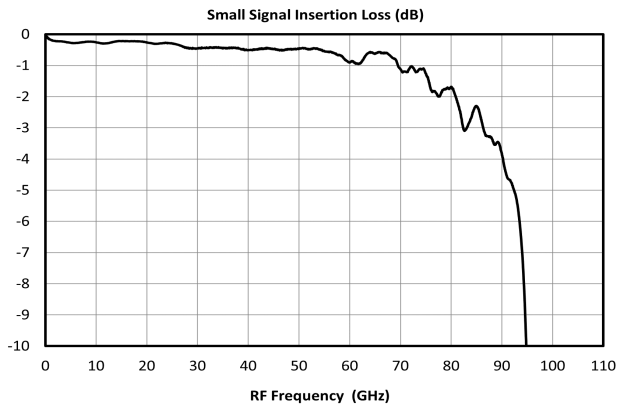
Parameter	Details	Rating
Dimensions	-	2.50 x 2.50 mm
Moisture Sensitivity Level	-	MSL 3

Electrical Specifications

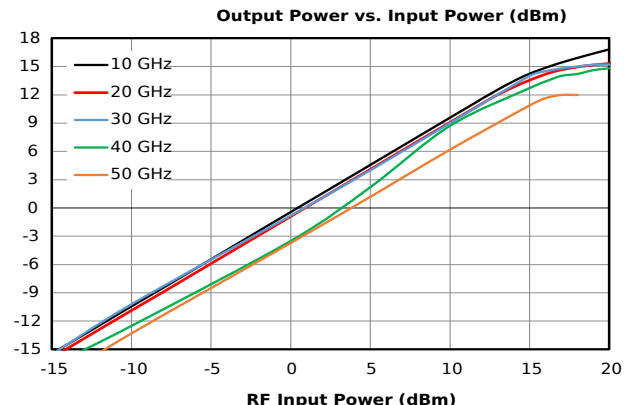
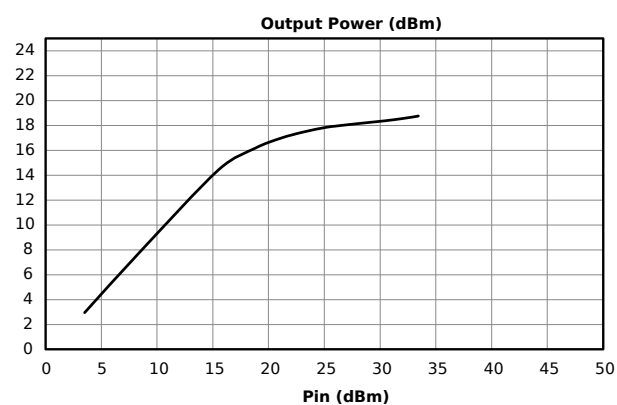
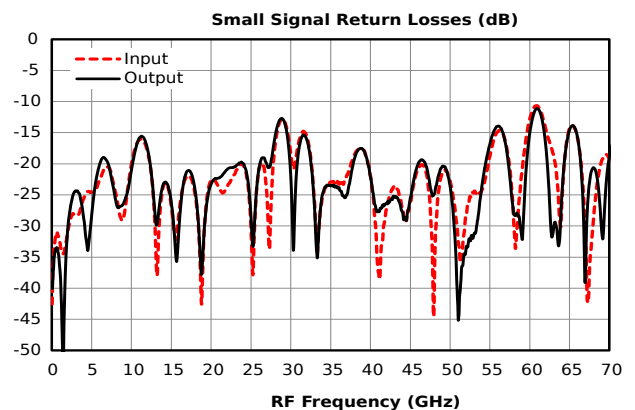
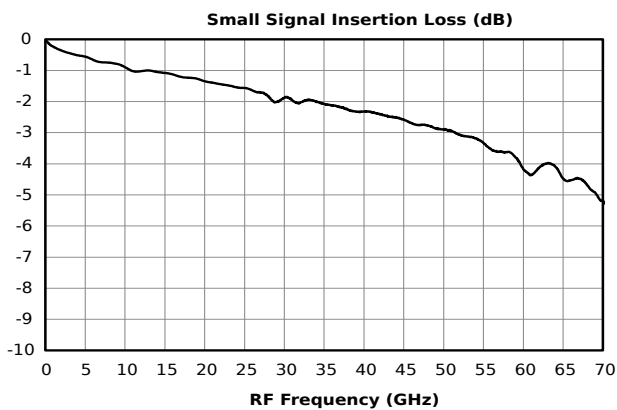
The electrical specifications apply at TA=+25°C in a 50Ω system. Typical data shown is for the connectorized EVAL-package limiter unless otherwise specified. CSP1-package data shown is deembedded from the EVAL-package data. Linear Specifications valid for input power up to the 0.1dB compression point. See page 5 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	DC - 70GHz	0	70	-	0.5	-	dB
Return Loss	DC - 70GHz	0	70	-	21	-	dB
Flat Leakage	18 GHz CW	-	-	-	18	-	dBm
Flat Leakage	20GHz CW	-	-	-	17	-	dBm
Flat Leakage	40GHz CW	-	-	-	13	-	dBm
Input IP3	DC - 60GHz	0	70	-	32	-	dBm

Typical Performance Plots

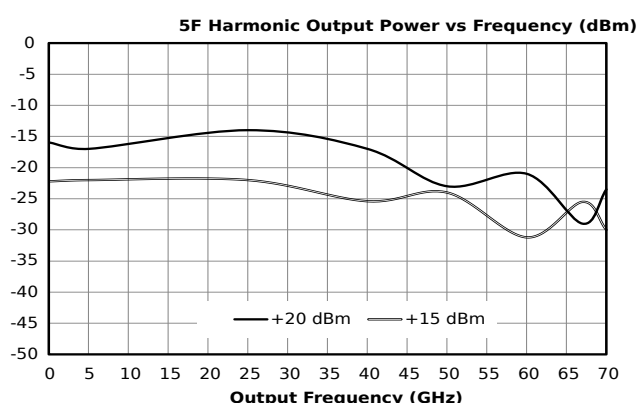
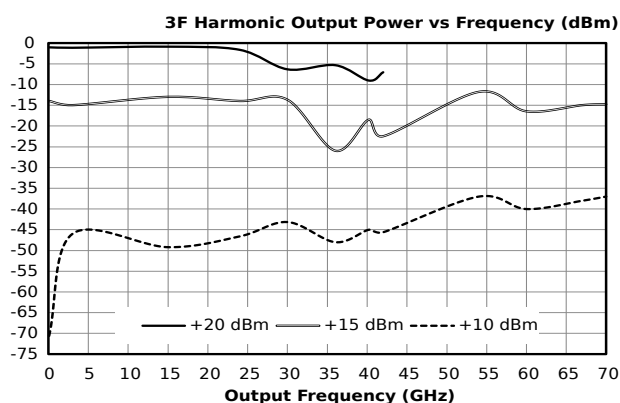
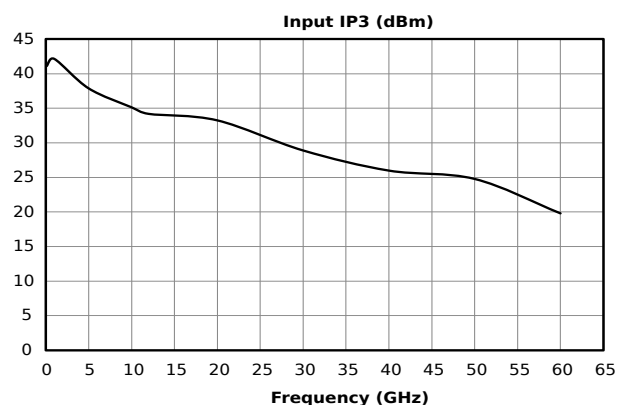
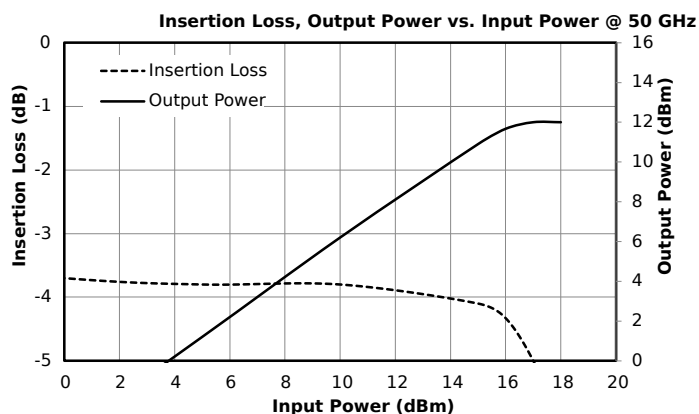
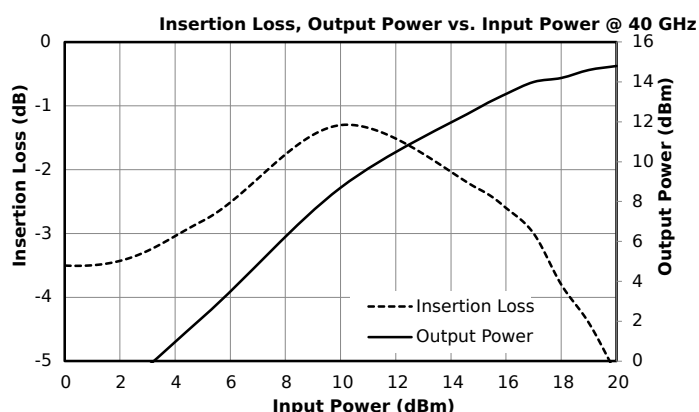
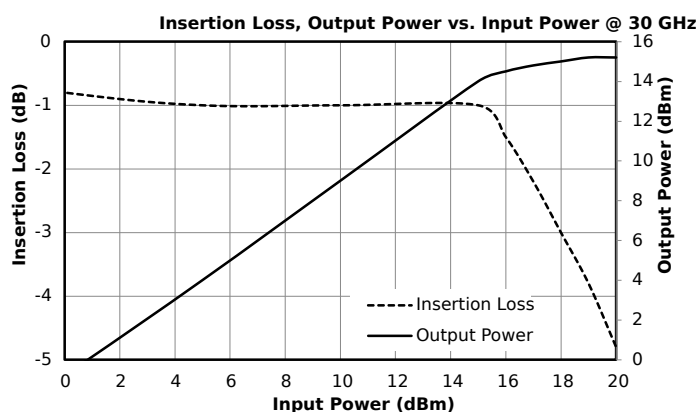
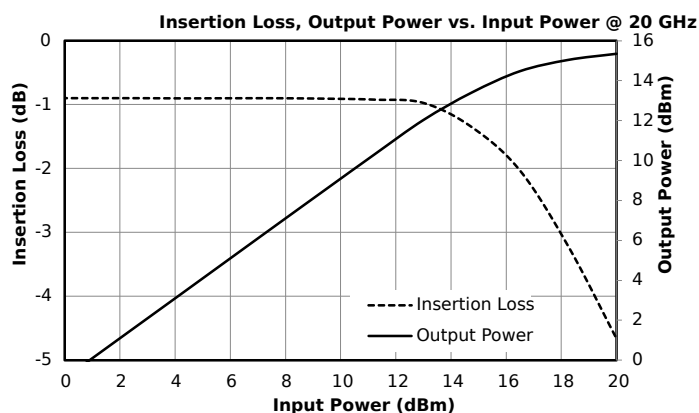
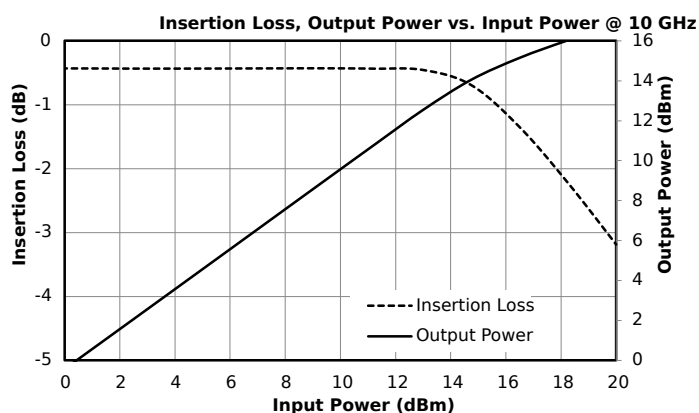


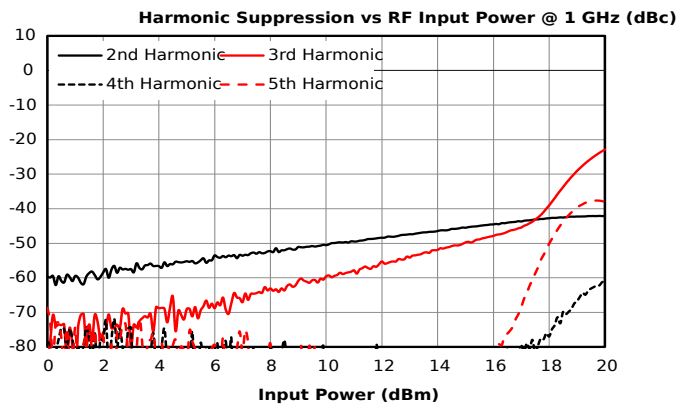
Typical Performance Plots EVB Package



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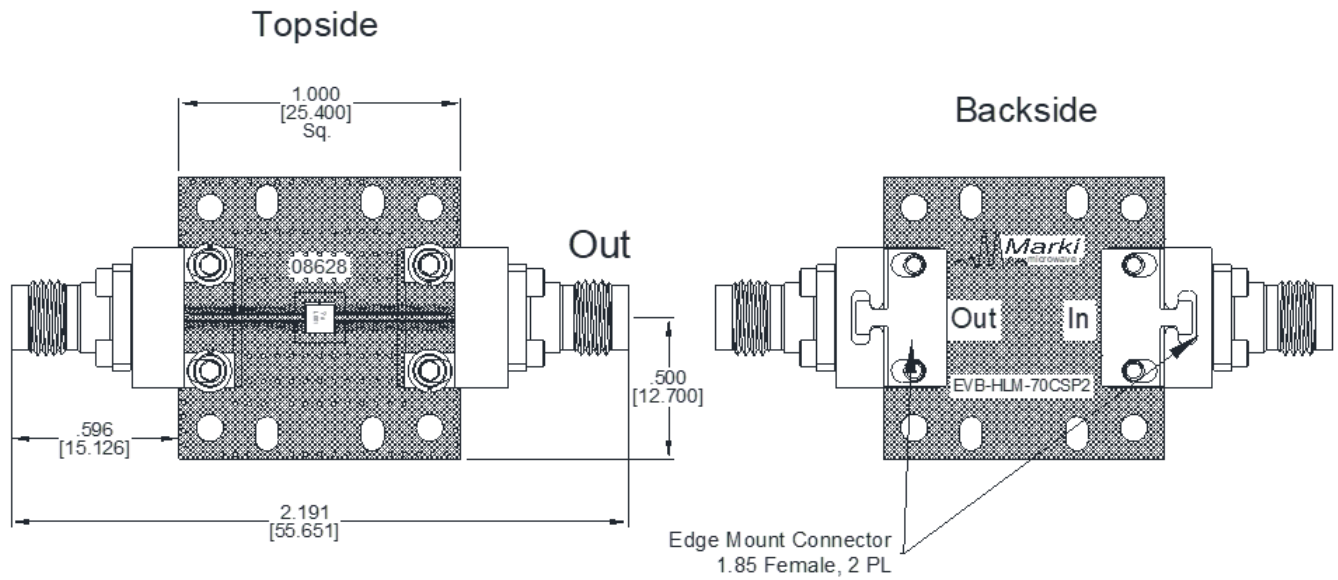


Input Power at Observed Failure

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.

Frequency	Maximum Average Power Handling	Unit
2 GHz	6	W
18 GHz	2.5	W

Evaluation Board - Outline Drawing



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