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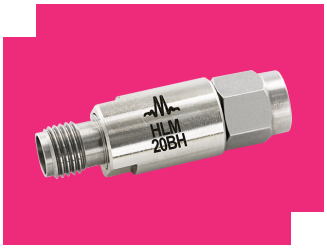
HLM-20BH

High Power 20GHz Limiter

DEVICE OVERVIEW

General Description

The HLM-20BH is a wide bandwidth GaAs Schottky diode signal limiter featuring high 30 dBm IP3 and high 4 W power handling over a broad DC-20 GHz bandwidth. It offers low 1 dB insertion loss and excellent return 15 dB loss from DC through K band and has a typical 1 dB compression point of 15 dBm. Its high power handling makes it ideal for protecting sensitive components and for applications requiring high linearity.



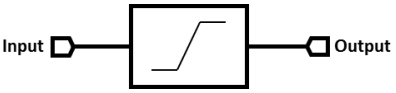
Features

- Insertion Loss, 0.9 dB @ 10 GHz Typical
- Power Handling, 4 W CW @ 10 GHz
- Flat Leakage, +14 to +17 dBm Typical
- P1dB, 15 dBm Typical

Applications

- RF Transceivers
- Test and Measurement Equipment
- SATCOM

Functional Block Diagram



Part Ordering Options

Part Number	Description	Package	Connectors	Green Status	Product Lifecycle	Export Classification
HLM-20BH	High Power 20GHz Limiter	BH	-	REACH RoHS	Released	EAR99

Table Of Contents

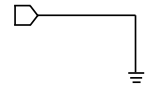
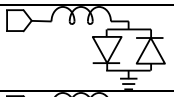
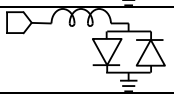
Revision History

Revision Code	Revision Date	Comment
-	2025-12-01	Initial Release

Port Configuration and Functions

Port Diagram

Port Functions

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

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Specifications

Absolute Maximum Ratings

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]	4	W

RF Power Handling represents an instantaneous, catastrophic limit and it isn't derated for frequency, temperature, pulse conditions, or unit to unit variation

[1] CW @ 10 GHz, 25°C

Package Information

Parameter	Details	Rating
Weight	Package name: BH	9.2g
Dimensions	-	30.1 x 9.5 mm

Electrical Specifications

The electrical specifications apply at TA=+25°C in a 50Ω system. Typical data shown is for the connectorized BH-package limiter unless otherwise specified.

Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
Insertion Loss	-	0	20	-	1	-	dB
Return Loss	-	0	20	-	15	-	dB
Flat Leakage	1 GHz CW	-	-	-	17	-	dBm
Flat Leakage	5 GHz CW	-	-	-	15.3	-	dBm
Flat Leakage	10 GHz CW	-	-	-	15	-	dBm
Flat Leakage	14 GHz CW	-	-	-	15	-	dBm
Flat Leakage	18 GHz CW	-	-	-	14.3	-	dBm
Flat Leakage	20 GHz CW	-	-	-	13.7	-	dBm
Input IP3	-5dBm Tone Powers at 1 MHz Spacing	0	20	-	30	-	dBm

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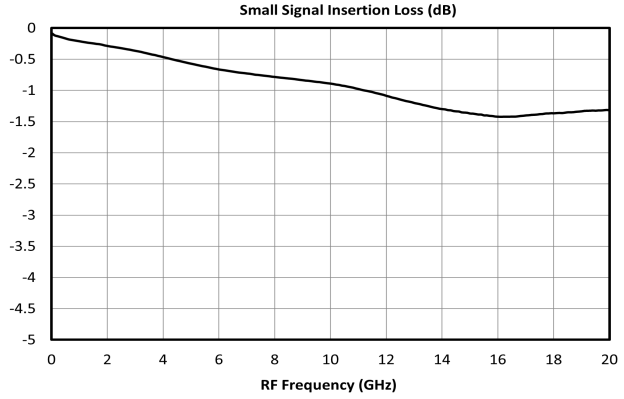
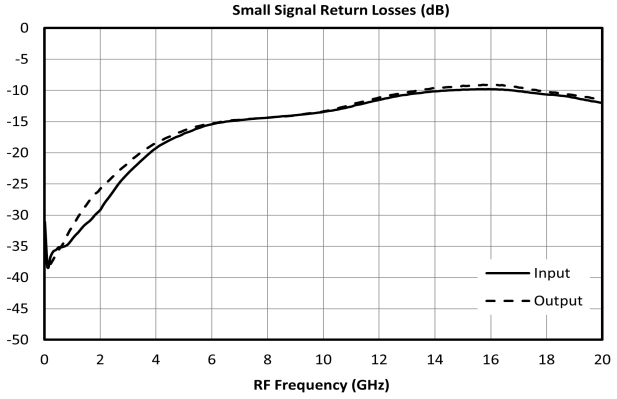
Typical Performance Plots

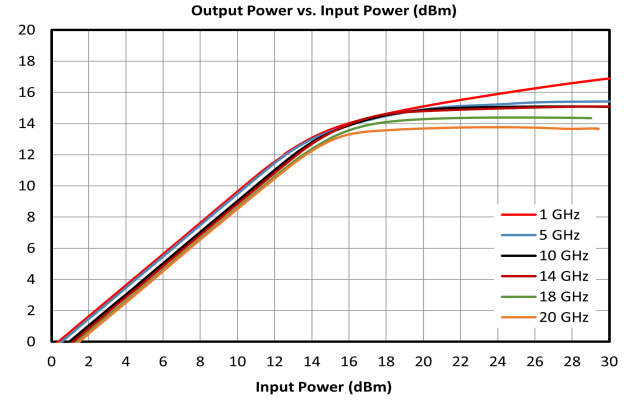
Small Signal Insertion Loss (dB)



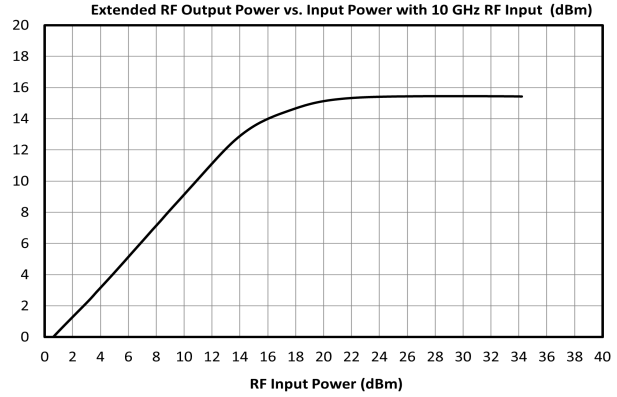
Small Signal Return Losses (dB)



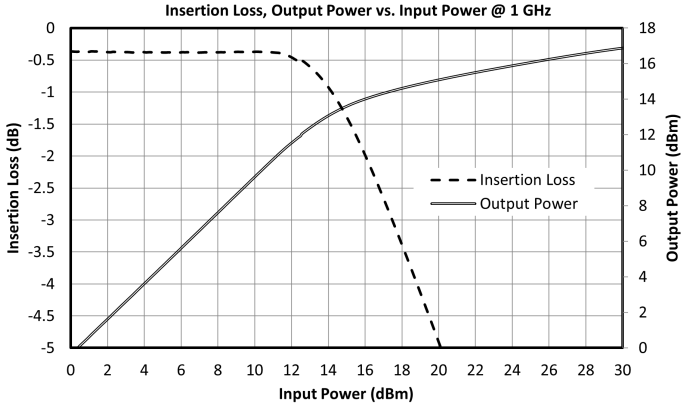
Output Power vs. Input Power (dBm)



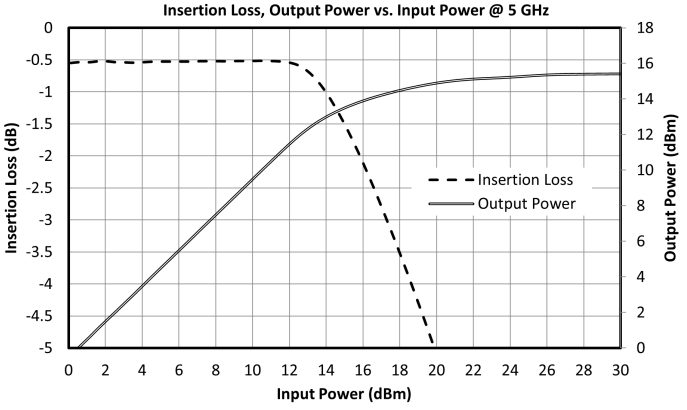
Extended RF Output Power vs. Input Power with 10 GHz RF Input (dBm)



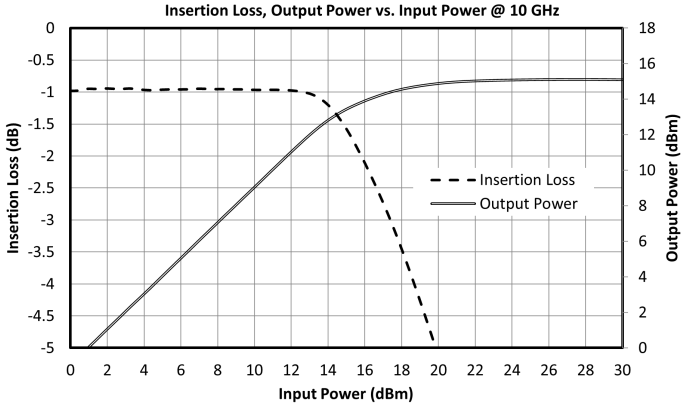
Insertion Loss, Output Power vs. Input Power @ 1 GHz



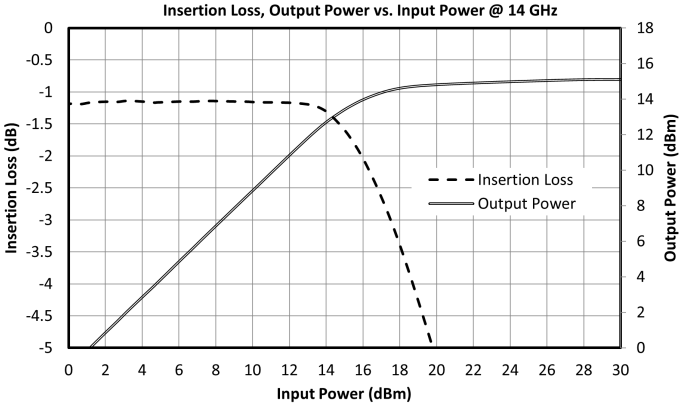
Insertion Loss, Output Power vs. Input Power @ 5 GHz



Insertion Loss, Output Power vs. Input Power @ 10 GHz



Insertion Loss, Output Power vs. Input Power @ 14 GHz



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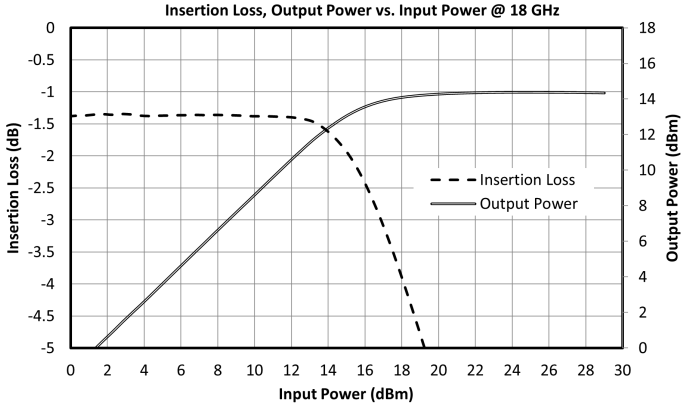

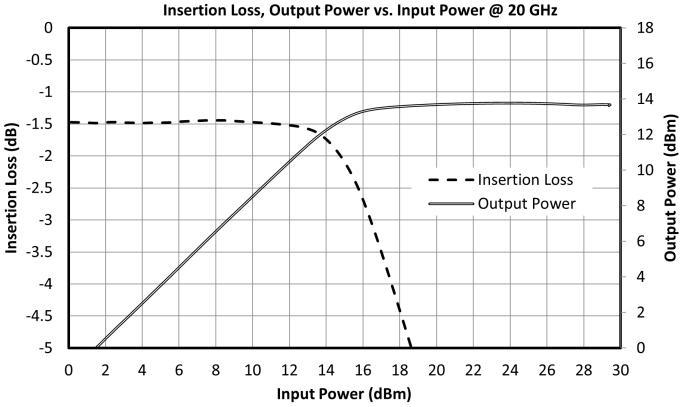

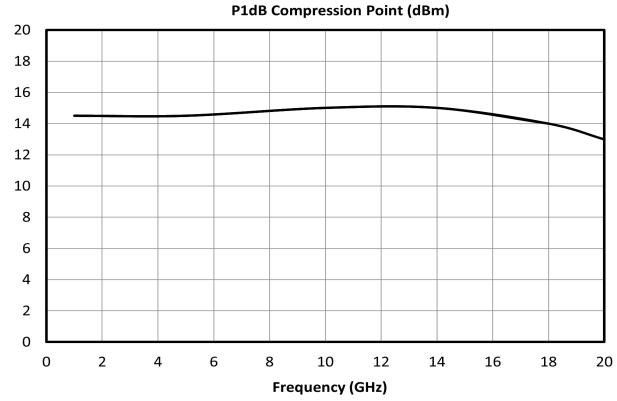

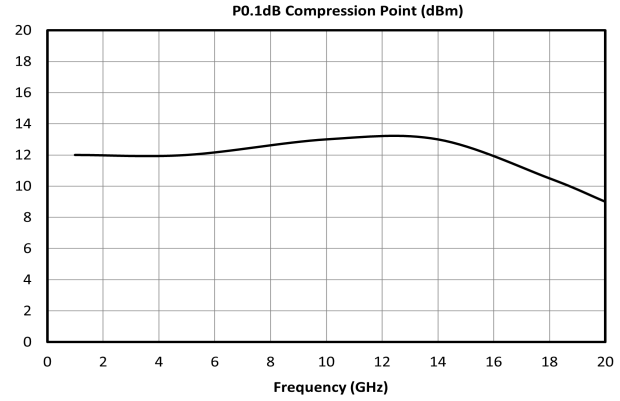

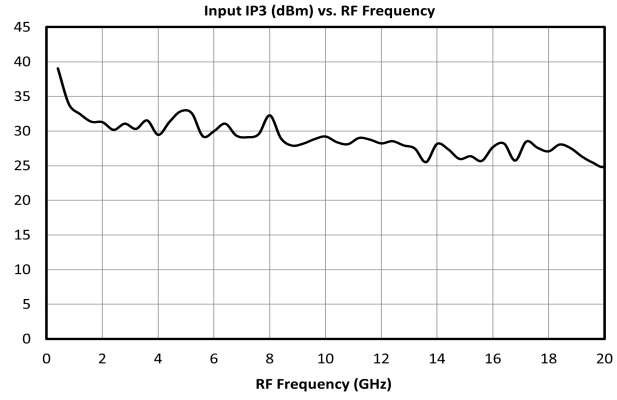

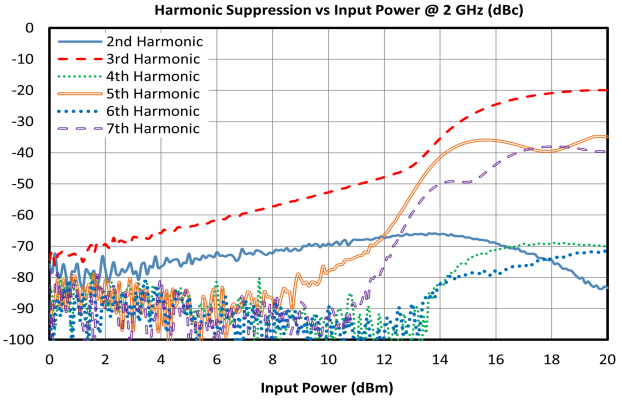

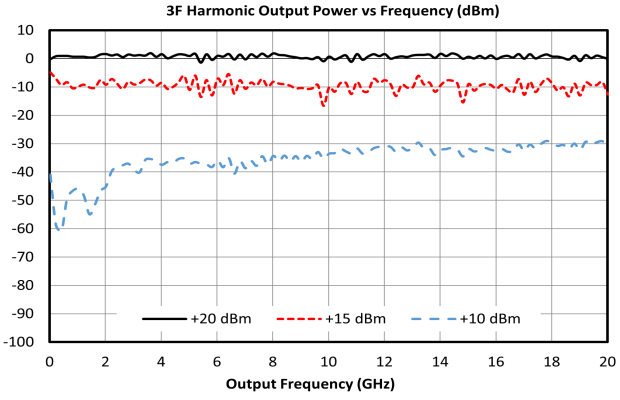

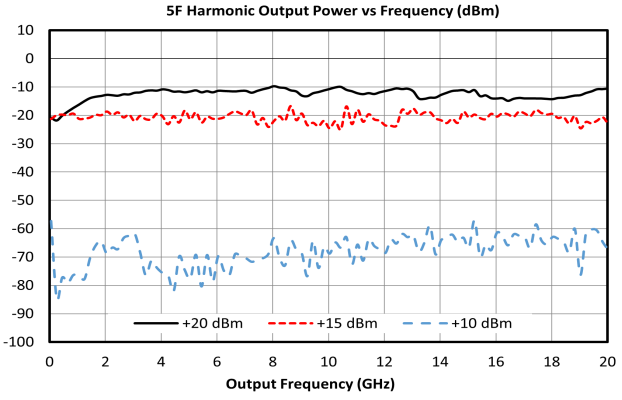

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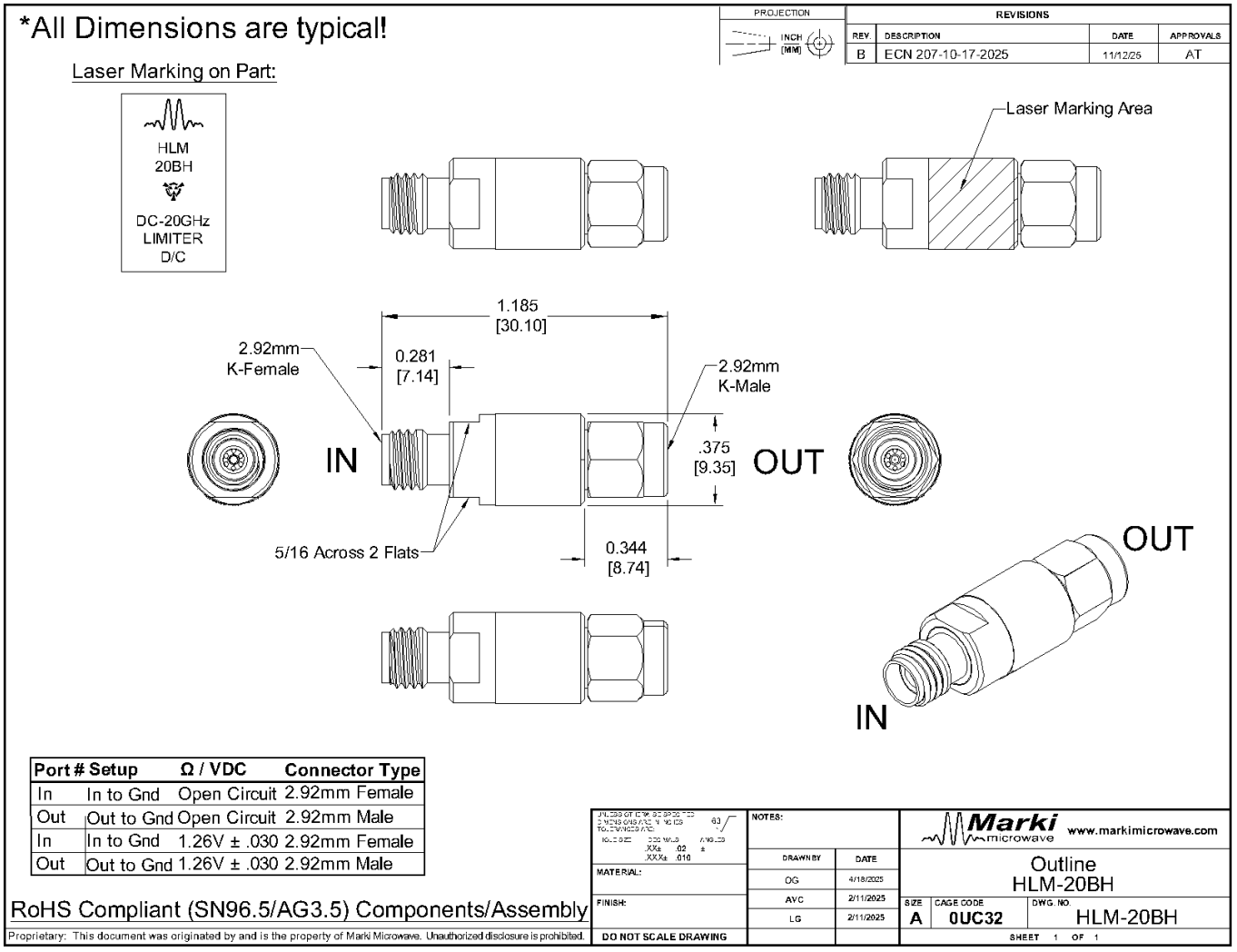
Mechanical Data

Outline Drawing

Download : Outline 2D Drawing



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