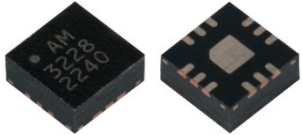


AM3228 – Filter

18GHz Lowpass Filter

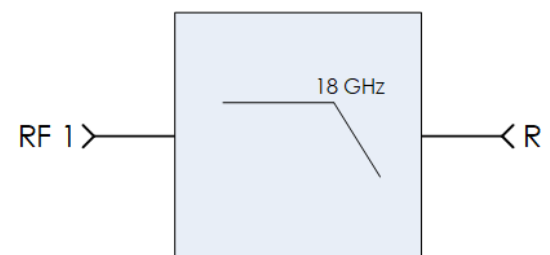


AM3228 is a passive lowpass filter implemented on chip that provides low loss and high rejection. It excels in 18GHz direct digitization applications. With internal 50Ω matching and packaged in a 3mm QFN, the AM3228 represents a compact total PCB footprint and operates over the -40C to +100C temperature range.

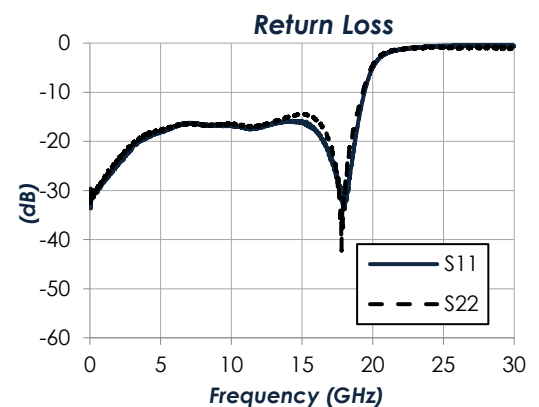
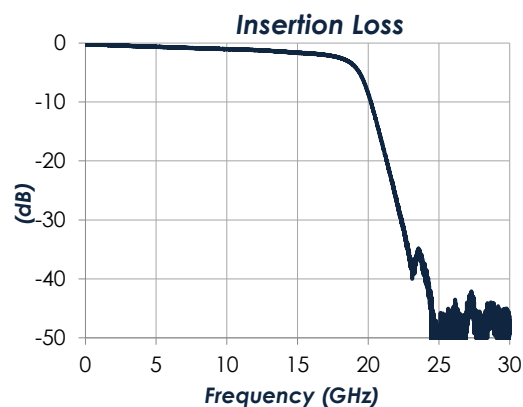
FEATURES

- 18 GHz Cutoff Frequency
- >45 dB Rejection in Stopband typ
- 1.2 dB Insertion Loss
- 3mm QFN Package
- -40C to +85C Operation

FUNCTIONAL DIAGRAM



CHARACTERISTIC PERFORMANCE



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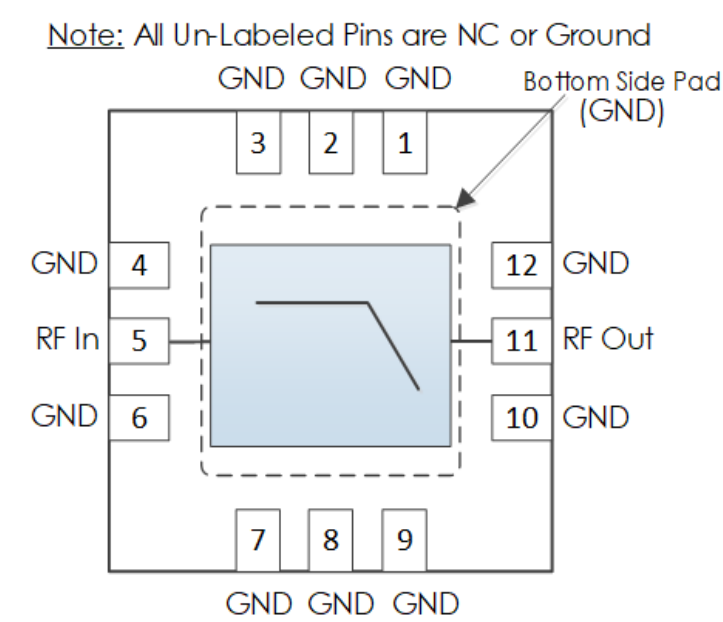
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REVISION HISTORY

Date	Revision	Notes
April 25, 2024	1	Initial Release
February 17, 2025	2	Changed to Mercury branding. No content changes.

PIN LAYOUT AND DEFINITIONS



Pin	Name	Function
1-4	GND	Ground - Common
5	RF In	RF Port 1 - 50 Ohms - AC Coupled
6-10	GND	Ground - Common
11	RF Out	RF Port 2 - 50 Ohms - AC Coupled
12	GND	Ground - Common

SPECIFICATIONS

Absolute Maximum Ratings

	Minimum	Maximum
RF Input Power		+27 dBm
Storage Temperature Range	-55C	+150 C

Note: Any device operation beyond the Absolute Maximum Ratings may result in permanent damage to the device. The values listed in this table are extremes and do not imply functional operation of the device at these or any other conditions beyond what is listed under Recommended Operating Conditions. Devices subjected to conditions outside of what is recommended for extended periods may affect device reliability.

Handling Information

	Minimum	Maximum
Moisture Sensitivity Level	MSL 3	



Mercury products are electrostatic sensitive.
Follow safe handling practices to avoid damage.

Recommended Operating Conditions

	Minimum	Typical	Maximum
Operating Case Temperature	-40 C		+100 C

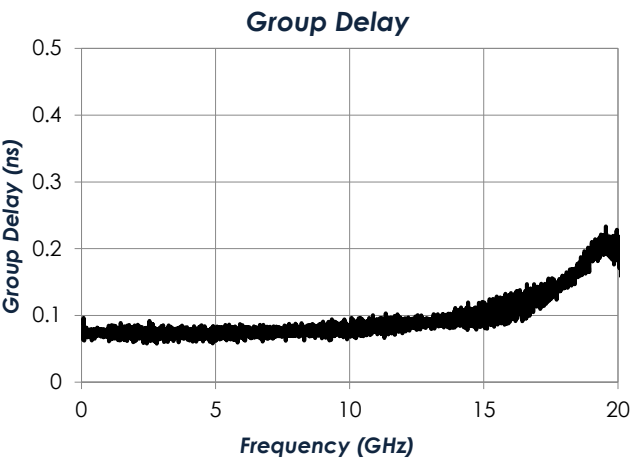
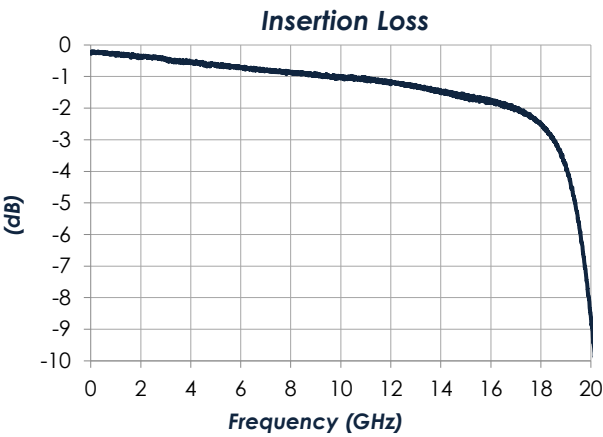
RF Performance

(T = 25 °C unless otherwise specified)

Param	Testing Conditions	Min	Typical	Max
Passband Range		DC		18 GHz
Stopband Rejection	f=23 GHz	39 dB		
Insertion Loss	f=3 GHz		0.4 dB	
	f=6 GHz		0.8 dB	
	f=12 GHz		1.2 dB	
	f=15 GHz		1.6 dB	
	f=18 GHz		2.5 dB	
Return Loss	f=3 GHz		-20 dB	
	f=6 GHz		-18 dB	
	f=12 GHz		-18 dB	
	f=15 GHz		-15 dB	
	f=18 GHz		-30 dB	

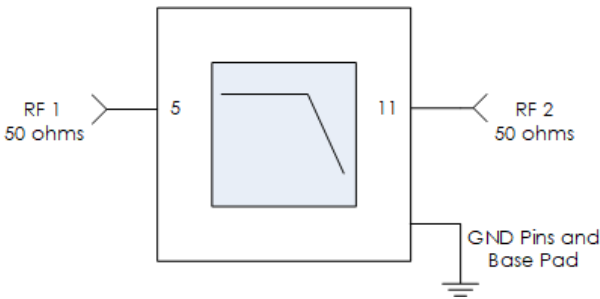
TYPICAL PERFORMANCE

(T = 25 °C unless otherwise specified)

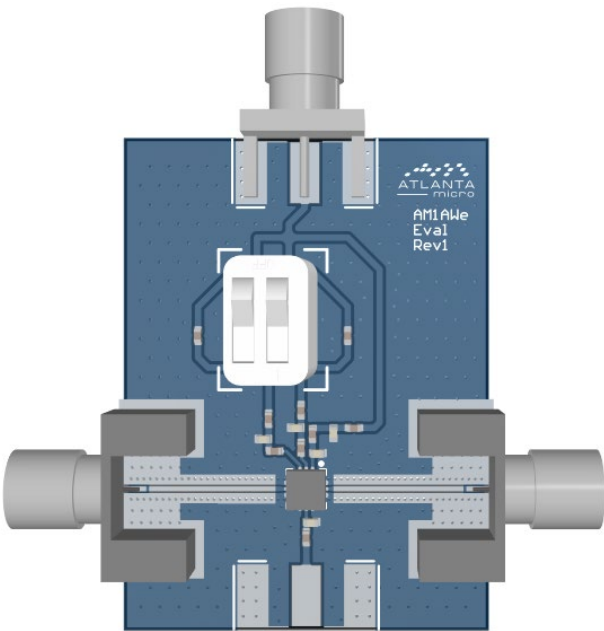


*Note: ID = ID2 + IDSW

TYPICAL APPLICATION



EVALUATION PC BOARD



PART ORDERING DETAILS

Part Number	Description
AM3228	3 mm x 3 mm x 1.2 mm QFN package
AM1134	AM3228 Evaluation Board with Connectors

RELATED PARTS

Part Number	Description	
AM3046	DC to 7 GHz	Lowpass Filter
AM3189	9 GHz to 10 GHz	IF Bandpass Filter
AM3039	9 GHz to 18 GHz	Digitally Tunable Lowpass Filter
AM3163	2 GHz to 18 GHz	Digitally Tunable Bandpass Filter

COMPONENT COMPLIANCE INFORMATION

RoHS: Mercury Systems, Inc. hereby certifies that all products comply with the EC Directive 2011/65/EC on the Restriction of Hazardous Substances, commonly known as EU-RoHS 6 and 10. All products supplied by Mercury shall be compliant with the European Directive 2011/65/EC based on the following substance list.

Substance List	Allowable Maximum Concentration
Lead (Pb)	<1000 PPM (0.1% by weight)
Mercury (Hg)	<1000 PPM (0.1% by weight)
Cadmium (Cd)	<75 PPM (0.0075% by weight)
Hexavalent Chromium (CrVI)	<1000 PPM (0.1% by weight)
Polybrominated Biphenyls (PBB)	<1000 PPM (0.1% by weight)
Polybrominated Diphenyl ethers (PBDE)	<1000 PPM (0.1% by weight)
Decabromodiphenyl Deca BDE	<1000 PPM (0.1% by weight)
Bis (2-ethylhexyl) Phthalate (DEHP)	<1000 PPM (0.1% by weight)
Butyl Benzyl Phthalate (BBP)	<1000 PPM (0.1% by weight)
Dibutyl Phthalate (DBP)	<1000 PPM (0.1% by weight)
Diisobutyl Phthalate (DIBP)	<1000 PPM (0.1% by weight)

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Mercury takes its responsibility as a global partner seriously and will use due diligence within our supply chain to ensure all standards are met to the best of our knowledge.



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