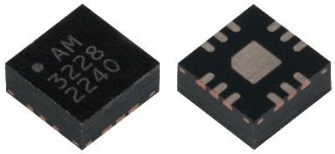
AM3228 – Filter

18GHz Lowpass Filter

Description

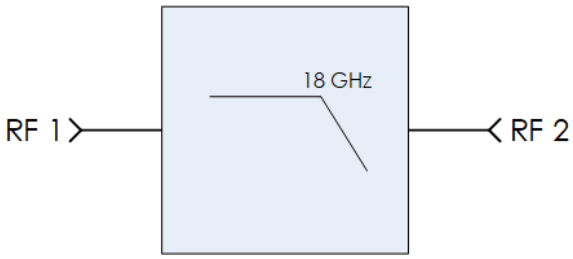
AM3228 is a passive lowpass filter implemented on chip that provides low loss and high rejection. It excels in 18GHz direct digitization applications. With internal 50Ω matching and packaged in a 3mm QFN, the AM3228 represents a compact total PCB footprint and operates over the -40C to +100C temperature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



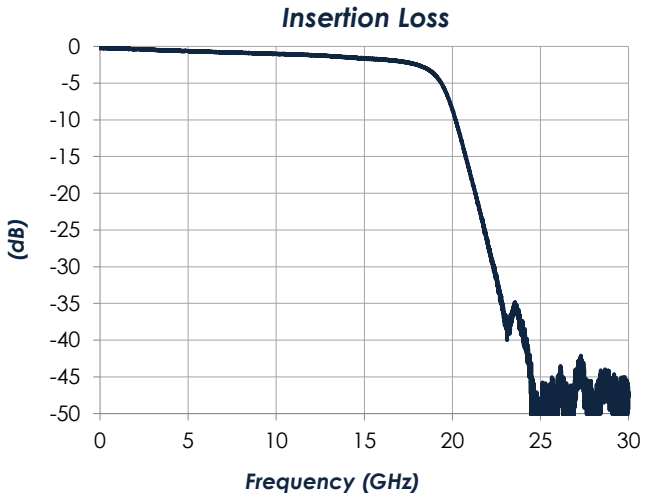
Features

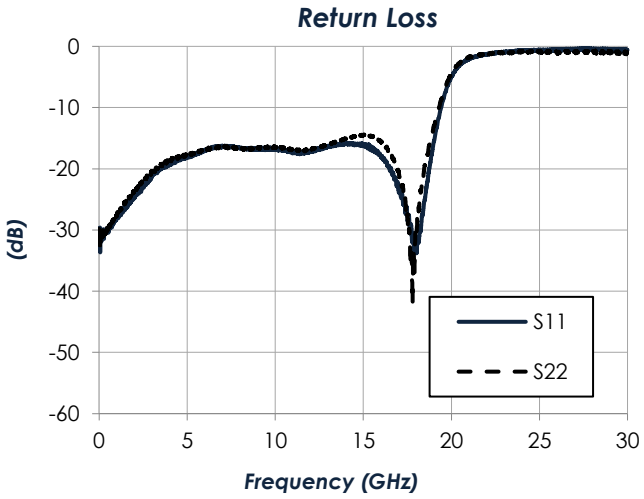
- 18 GHz Cutoff Frequency
- >45 dB Rejection in Stopband typ.
- 1.2 dB Insertion Loss
- 3 mm QFN Package
- -40C to +100C Operation

Functional Diagram



Characteristic Performance





To obtain price, delivery, or to place an order contact MMICsales@mrcy.com
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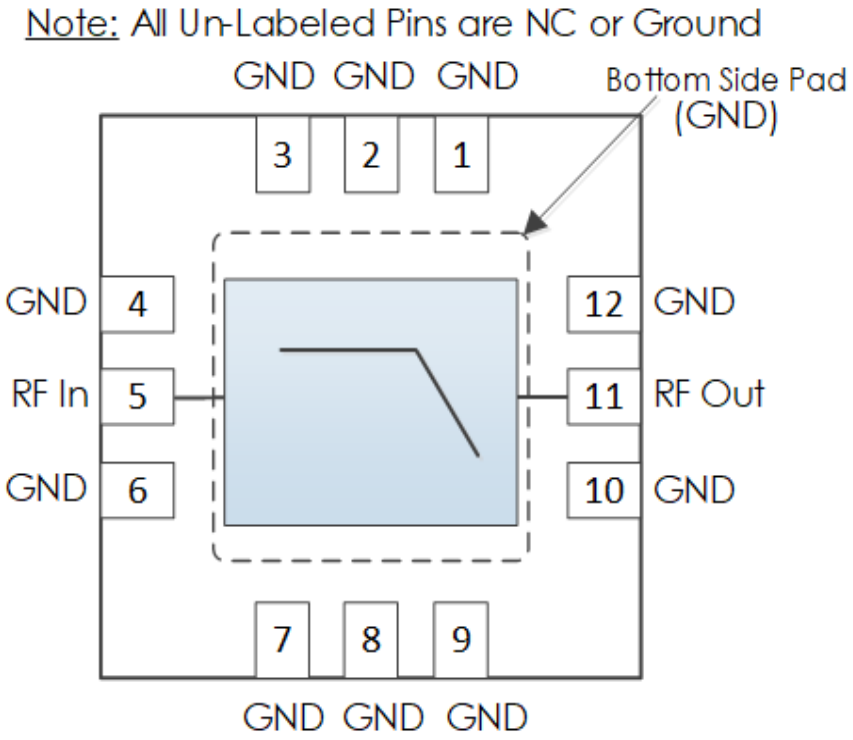
Table of Contents

Revision History

Date	Revision Number	Notes
April 25, 2024	1	Initial release

Pin Layout and Definitions



Pin Number	Pin Name	Pin Function
1-4	GND	Ground
5	RF In	RF Port 1 – 50 ohms, AC coupled
6-10	GND	Ground
11	RF Out	RF Port 2 – 50 ohms, AC coupled
12	GND	Ground

Specifications

Absolute Maximum Ratings

	Minimum	Maximum
RF Input Power		+27 dBm
Storage Temperature Range	-55 C	+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. *Any part subjected to conditions outside of what is recommended for an extended amount of time may suffer from reliability concerns.*

Handling Information

	Minimum	Maximum
Moisture Sensitivity Level	MSL 3	

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

Recommended Operating Conditions

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

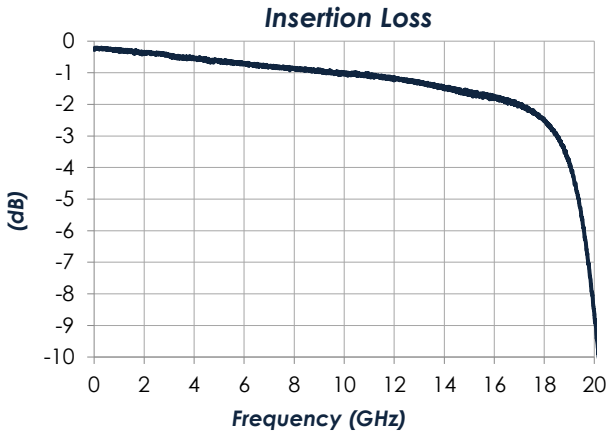
RF Performance

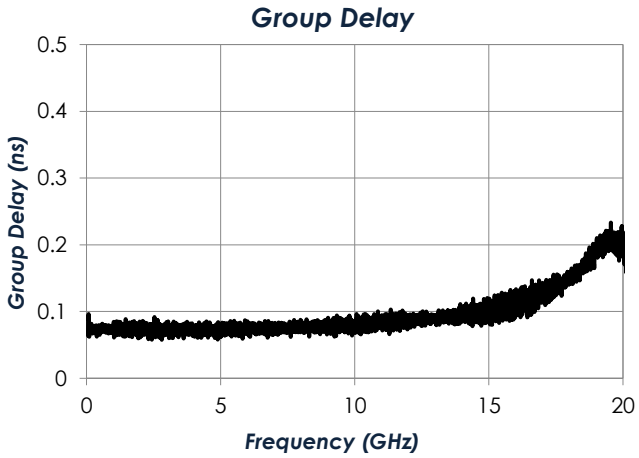
(T = 25 °C unless otherwise specified)

Parameter	Testing Conditions	Minimum	Typical	Maximum
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. Refer to s-parameters available for download on Atlanta Micro website for more information)





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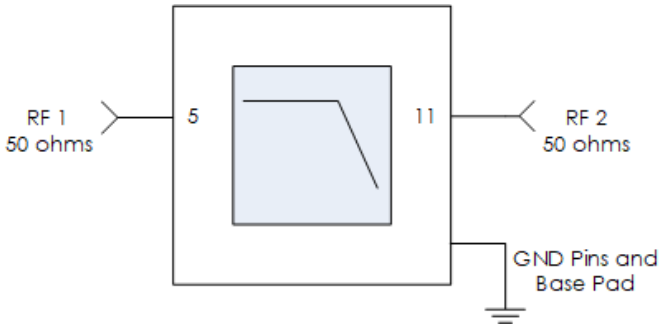
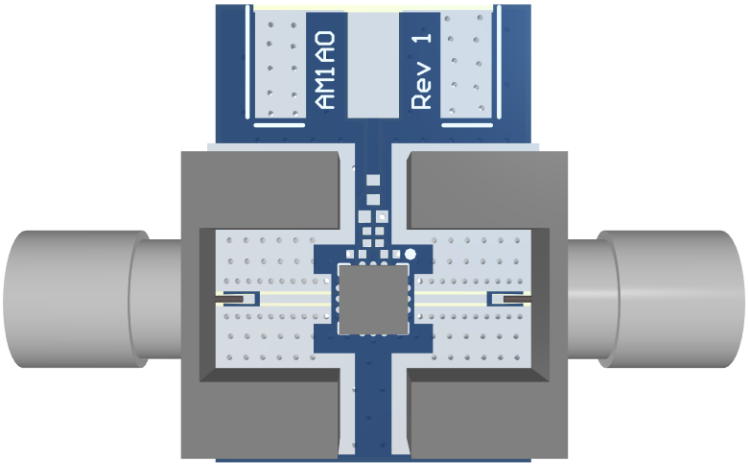
Typical Application



Evaluation PC Board



Part Ordering Details

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

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: Atlanta Micro, 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 Atlanta Micro 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-ethylheyl) 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)

REACH: Atlanta Micro, Inc. neither uses nor intentionally adds any of the substances considered to be a Substance of Very High Concern (SVHC) as defined by the EU Regulation (EC) No. 1907-2006 on Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH).

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Atlanta Micro 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.