

# AM3235 – Filter

## 8 GHz to 12 GHz Bandpass Filter

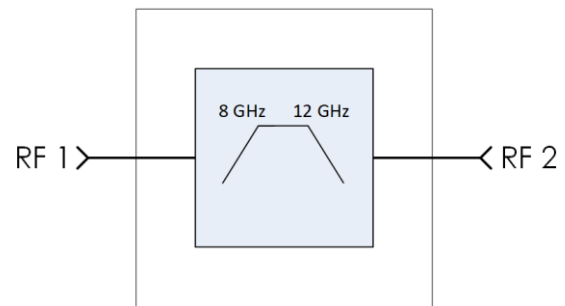
### Description

AM3235 is a passive bandpass filter implemented on chip that provides low loss and high rejection in a small 3 mm package. With a center frequency of 10 GHz and 4 GHz of bandwidth, AM3235 is useful as an IF filter for reducing unwanted mixer products and LO feedthrough in X-band systems. AM3235 is AC coupled and matched to 50 ohms while operating over the -40C to +100C temperature range.

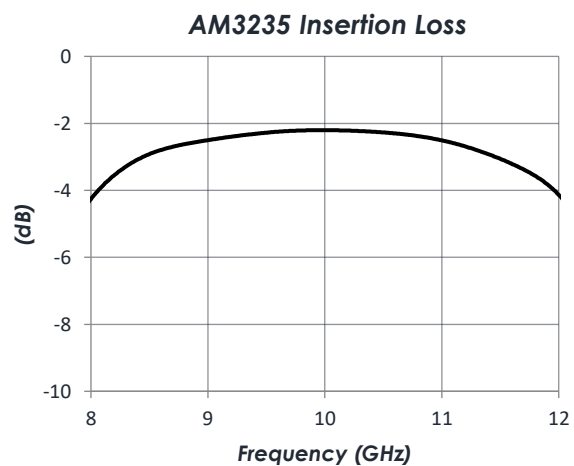
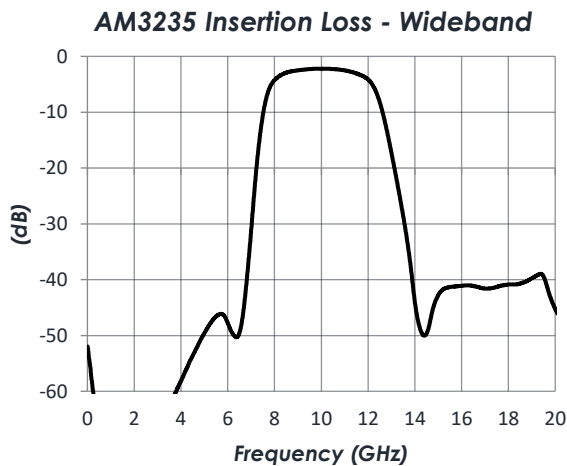
### Features

- 10 GHz Center Frequency
- 4 GHz Bandwidth
- 2dB Passband Flatness Typical
- >35 dB Stopband Rejection
- 0.5 W Power Handling
- 3mm QFN Package
- -40C to +100C Operation

### Functional Diagram



### Characteristic Performance



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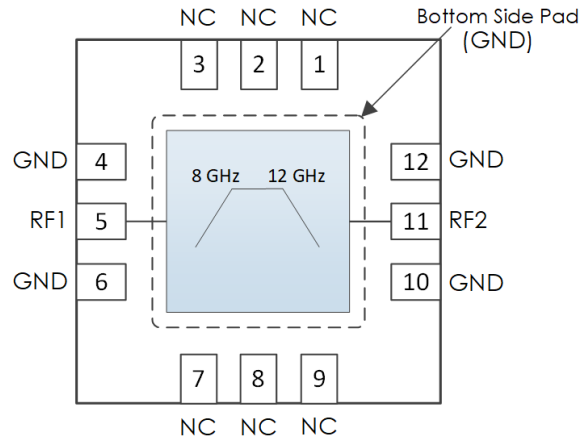
## Revision History

Date	Revision Number	Notes
October 12, 2023	1	Initial release

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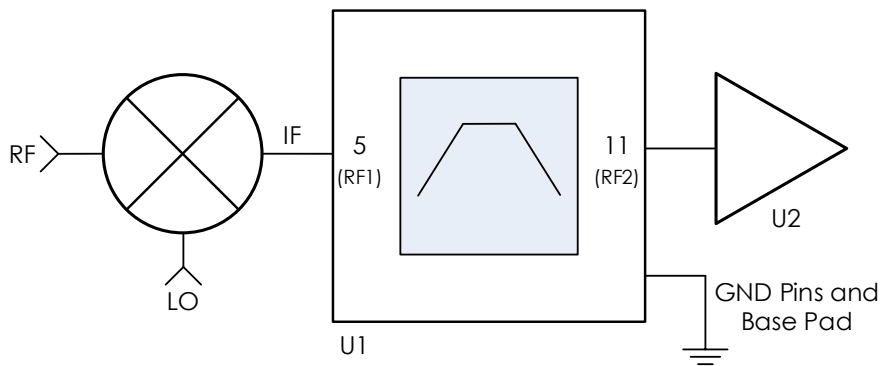
### Pin Layout and Definitions



Pin Number	Pin Name	Pin Function
1-3	NC	No Connect*
4	GND	Ground – Common
5	RF1	RF Port 1 – 50 ohms, AC coupled.
6	GND	Ground – Common
7-9	NC	No Connect
10	GND	Ground – Common
11	RF2	RF Port 2 – 50 ohms, AC coupled.
12	GND	Ground – Common

\*Note: NC pins may be grounded or left open

### Typical Application



### Recommended Component List (or equivalent):

Part	Part Number	Manufacturer
U1	AM3235	Atlanta Micro
U2	AM1111	Atlanta Micro

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# AM3235 – Filter

## 8 GHz to 12 GHz Bandpass Filter Specifications

### Absolute Maximum Ratings

	Minimum	Maximum
RF Input Power		+27 dBm
Operating Junction Temperature	-40 C	+150 C
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
Storage Temperature Range (Recommended)	-50 C	+125 C
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
Operating Junction Temperature	-40 C		+125 C

### RF Performance

(T = 25 °C unless otherwise specified)

Parameter	Testing Conditions	Minimum	Typical	Maximum
Passband Range		8 GHz		12 GHz
Bandwidth			4 GHz	
Passband Flatness			2 dB	
Stopband Rejection		35 dB		
Insertion Loss	f = 8 GHz		4.3 dB	
	f = 10 GHz		2.2 dB	
	f = 12 GHz		4.1 dB	
Return Loss	f = 8 GHz		14.7 dB	
	f = 10 GHz		19.0 dB	
	f = 12 GHz		12.1 dB	

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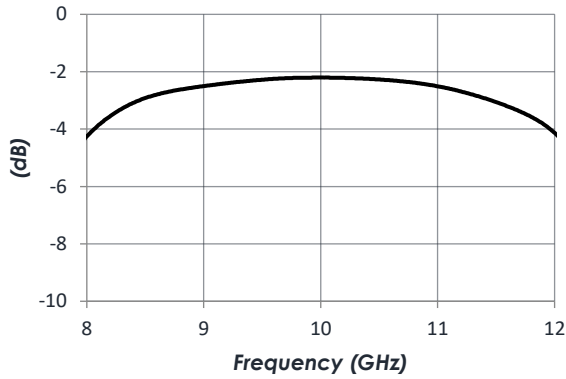
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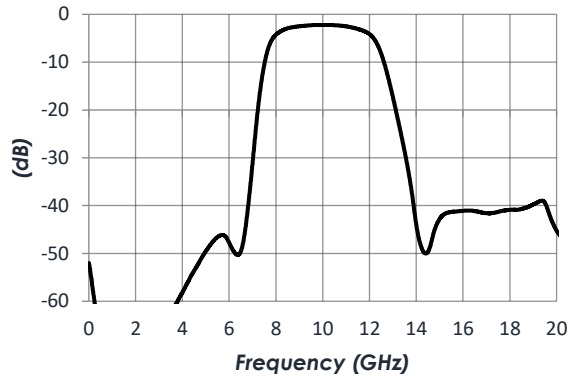
### Typical Performance

(T = 25 °C unless otherwise specified. Refer to s-parameters available for download on Atlanta Micro website for more information)

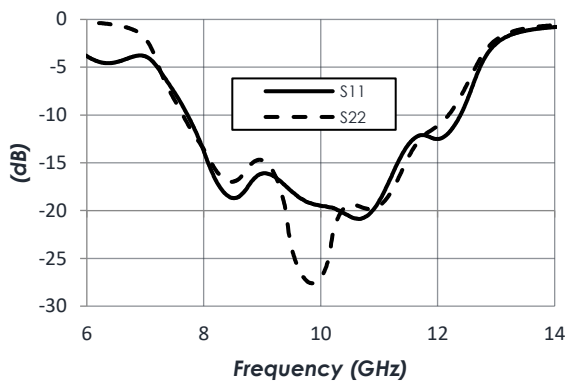
**AM3235 Insertion Loss**



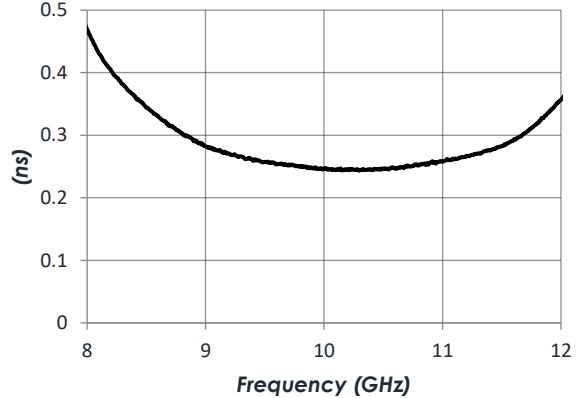
**AM3235 Insertion Loss - Wideband**



**AM3235 Return Loss**



**AM3235 Group Delay**

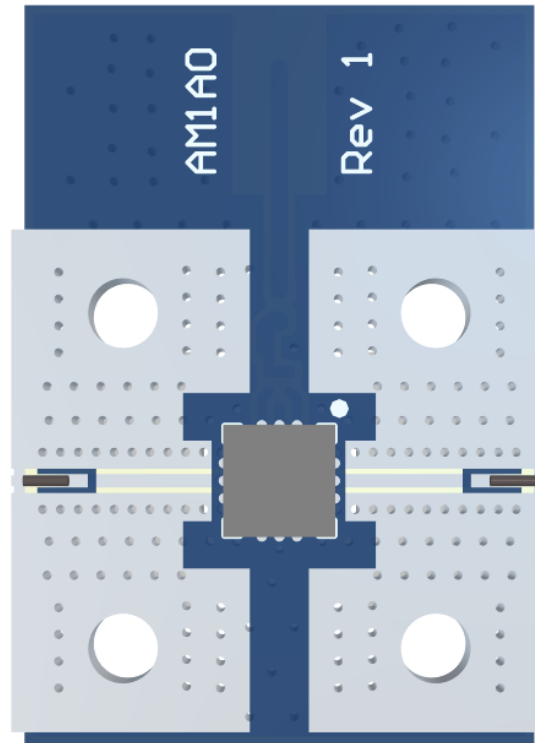


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Evaluation PC Board



## Part Ordering Details

Description	Part Number
3mm x 3mm x 1.2mm QFN package	AM3235
AM3235 with Connectorized Evaluation Board	AM3235 Eval

## Related Parts

Part Number	Description
AM1111	2 GHz to 18 GHz Driver Amplifier
AM3187	3.25 GHz to 4.25 GHz IF Bandpass Filter
AM3188	2.5 GHz to 3.5 GHz IF Bandpass Filter
AM3189	9 GHz to 10 GHz IF Bandpass Filter

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### 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-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)

**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).

**Conflict Materials:** Atlanta Micro does not knowingly use materials that are sourced from the Democratic Republic of Congo (DRC) or any other known conflict regions. Atlanta Micro's supply chain is comprised of sources that are both environmentally and socially responsible. We periodically review this requirement with our vendors to ensure continued compliance.

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.

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