

AM3073A – Amplifier Module

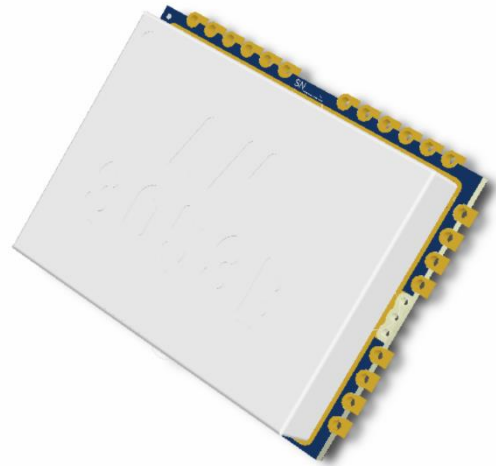
1.0 GHz A/D Driver, 500 MHz Bandwidth

Description

AM3073A is a shielded A/D driver module that provides amplification and anti-aliasing filtering of the 1.0 GHz IF output of the AM9017 tuner module. The AM3073A offers 500 MHz of bandwidth and 25 dB of gain packaged in a 18mm x 24mm x 4.0mm package while operating on +5.0V from -40C to +85C.

Features

- 500 MHz Bandwidth
- 1.0 GHz Center Frequency
- 25 dB Gain
- 7 dB Noise Figure
- +37 dBm OIP3
- +5.0 V Supply
- 0.83W Power Consumption
- 18mm x 24mm x 4.0mm Package
- -40C to +85C Operation



Functional Diagram

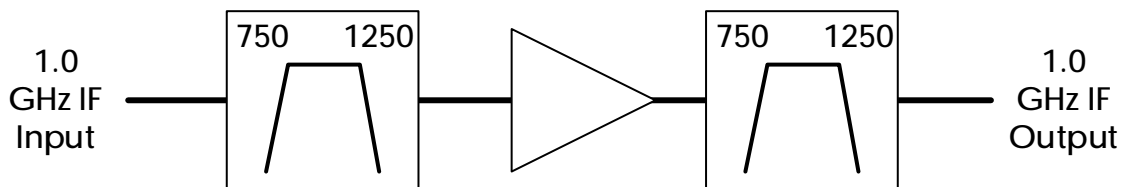


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Revision History

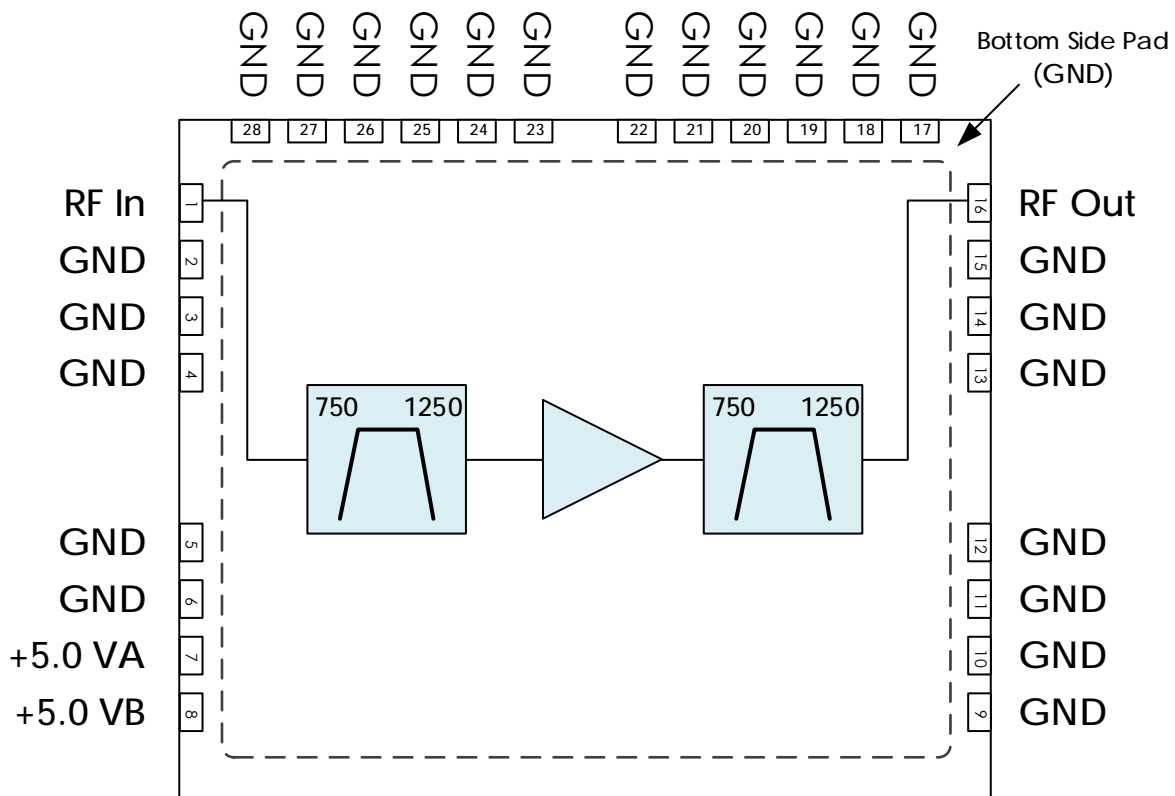
Date	Revision Number	Notes
October 10, 2019	1	Initial Release
October 7, 2020	2	Updated to latest datasheet format.
September 1, 2021	3	Updated plot in Typical performance section.

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Pin Layout and Definitions



Pin Number	Pin Name	Pin Function
1	RF In	1 GHz RF Input Port – 50 Ohms – AC Coupled
2 – 6	GND	Ground – Common
7	+5.0 VA	+5.0V DC Power Input
8	+5.0 VB	+5.0V DC Power Input
9 – 15	GND	Ground – Common
16	RF Out	1 GHz RF Output Port – 50 Ohms – AC Coupled
17 – 28	GND	Ground – Common
Bottom Pad	GND	Ground – Common

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Specifications

Absolute Maximum Ratings

	Minimum	Maximum
Supply Voltage	-0.3 V	+6.0 V
RF Input Power		+17 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
Supply Voltage	+4.8 V	+5.0 V	+5.2 V
Operating Case Temperature	-40 C		+85 C
Operating Junction Temperature	-40 C		+125 C

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DC Electrical Characteristics

(T = 25 °C unless otherwise specified)

Parameter	Testing Conditions	Minimum	Typical	Maximum
DC Supply Voltage		+4.8 V	+5.0 V	+5.2 V
DC Supply Current			166 mA	200 mA
Power Dissipated			0.83 W	1.0 W

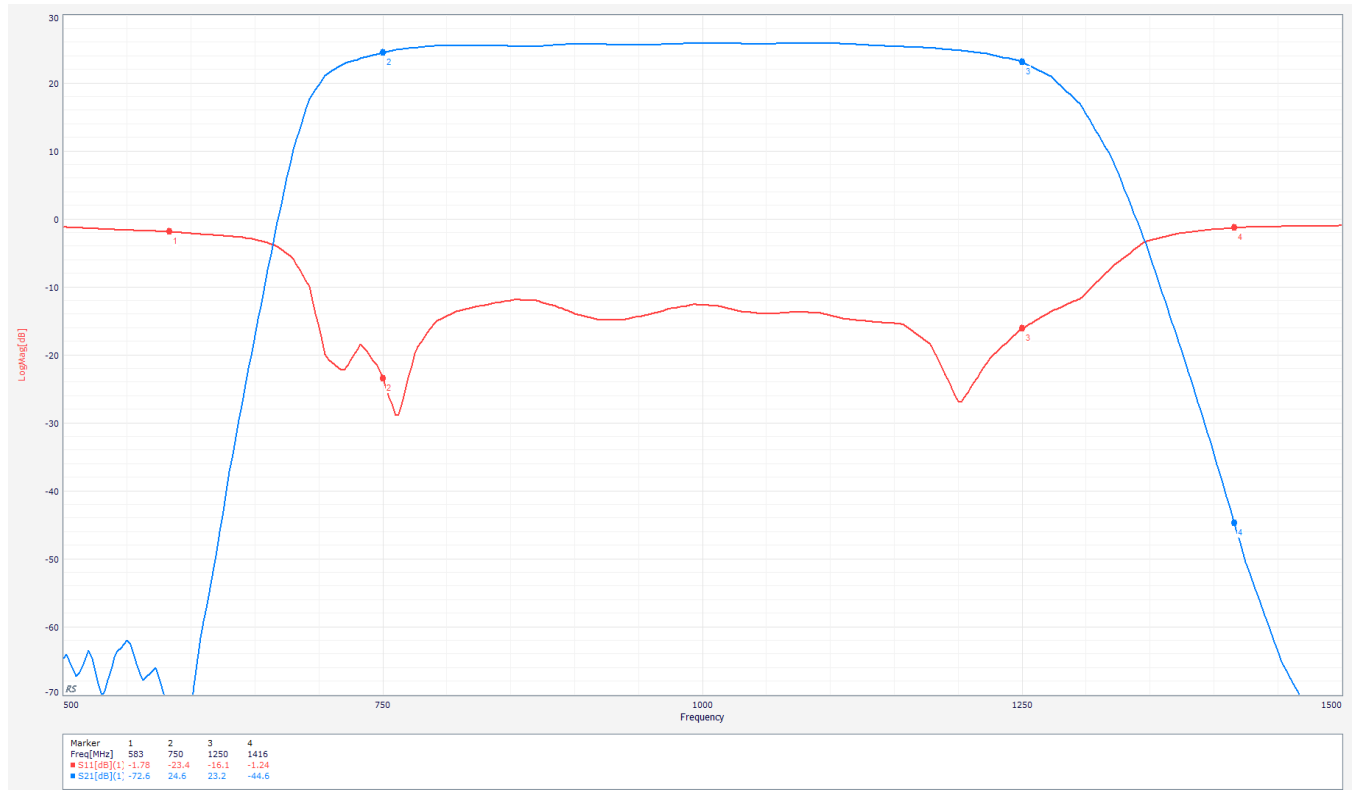
RF Performance

(T = 25 °C unless otherwise specified)

Parameter	Testing Conditions	Minimum	Typical	Maximum
Frequency Range		750 MHz		1250 MHz
Gain			25 dB	
Return Loss			15 dB	
Output IP3	Output tones at 0 dBm each		+37 dBm	
Output P1dB			+17 dBm	
Noise Figure			7 dB	
Alias Rejection	Assuming 1.333 GHz clock	60 dBc	75 dBc	

Typical Performance

(VDD = +5.0V, T = 25 °C)

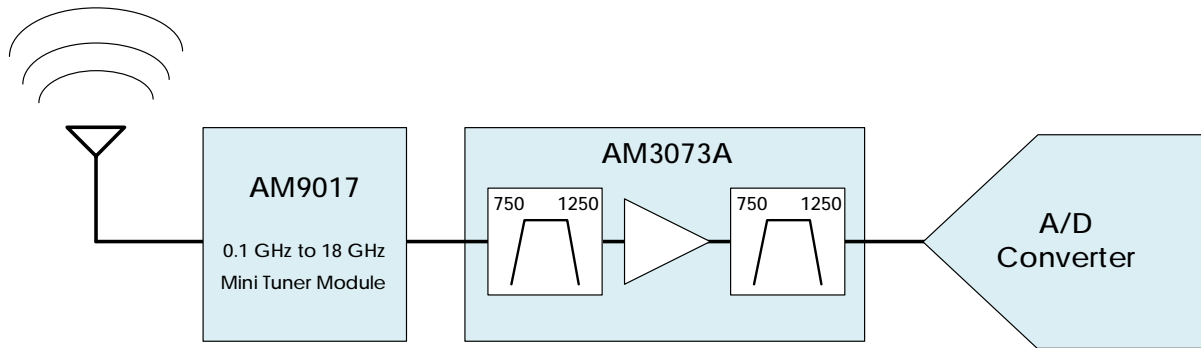


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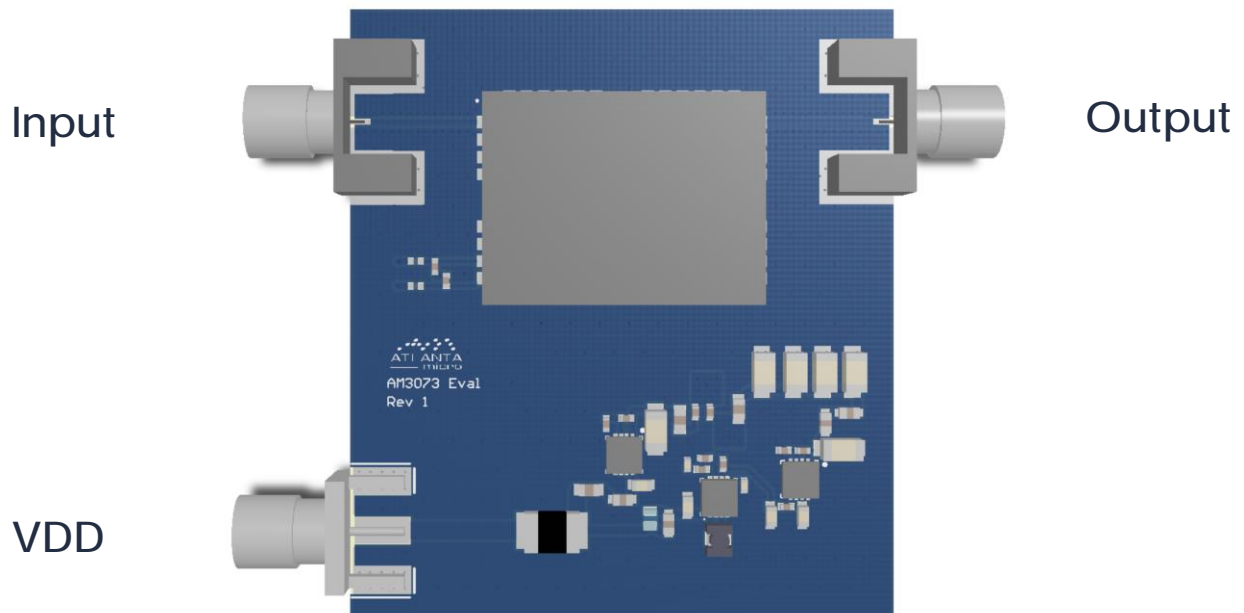
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Typical Application



Evaluation PC Board



Part Ordering Details

Description	Part Number
18mm x 24mm x 4.0mm RF Shielded Package	AM3073A
AM3073A Evaluation Board with Connectors	AM3073A Eval

Related Parts

Part Number	Description
AM9017	0.1 GHz to 18 GHz Miniature Tuner Module

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Component Compliance Information

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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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