RECOMMENDED FOR NEW DESIGNS

ATEK569

0.2 to 26 GHz MMIC Driver Amplifier, Die

Product Description

The ATEK569 is a GaAs PHEMT wideband distributed amplifier operating from 0.2 to 26GHz

The ATEK569 amplifier provides a flat gain of 14dB with an OIP3 of +35dBm and a +25dBm P1dB while operating from a single supply voltage of +10V drawing 190mA of current. The DC power bias of +5V to +12V can be supplied to the RF output port using an external bias-T.

The amplifier achieves a low noise figure of 3dB typical over the 6 to 18GHz band with +35dBm OIP3 enabling a high dynamic range driver amplifier.

The ATEK569 is supplied as a bare MMIC die and has outstanding drive/linearity for a wide range of radar, SATCOM, SDR, test instrument, & EW/ECM transceiver applications. MMICs are available from stock.

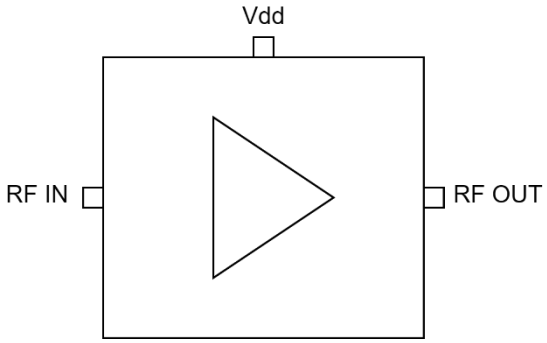
Product Features

- Frequency Range: 0.2 to 26 GHz
- Gain: 14 dB
- P1dB: +25.5 dBm
- IP3: +35 dBm
- Single Supply +5V to +12V
- VD= +10V @ 190mA

Applications

- Wideband Receivers, SDRs
- Microwave Radio
- Test and Measurement
- EW / ECM / C-UAS
- Military and Commercial Radar

Functional Block Diagram



0.2 to 26 GHz MMIC Driver Amplifier, Die

Electrical Specifications

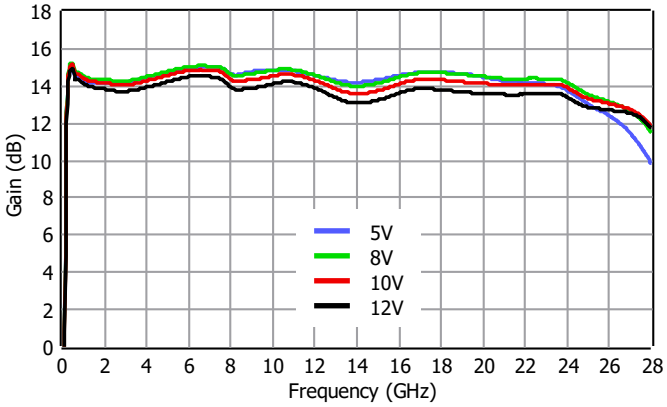
Conditions unless otherwise specified: V_{DD} = 12 V, Typical, T = 25 C, CW.

Parameter		Min	Typ	Max	Units
Operational Frequency Range		0.2		26	GHz
Gain	0.25 GHz		13.6		dB
	2 GHz		13.8		
	8 GHz		13.9		
	12 GHz		13.8		
	18 GHz		13.8		
	26 GHz		12.7		
Isolation	0.25 GHz		64		dB
	2 GHz		60		
	8 GHz		45		
	12 GHz		40		
	18 GHz		33		
	26 GHz		28		
Input Return Loss			-14		dB
Output Return Loss			-13		dB
Noise Figure at 5V			3		dB
Output IP3			35		dBm
Output P1dB			25.5		dBm
Psat			27.5		dBm
DC Supply Voltage (Vdd)			10 to 12	12.5	V
DC Supply Current (Idd)			190 to 200		mA
Operating Temperature		-40		85	°C

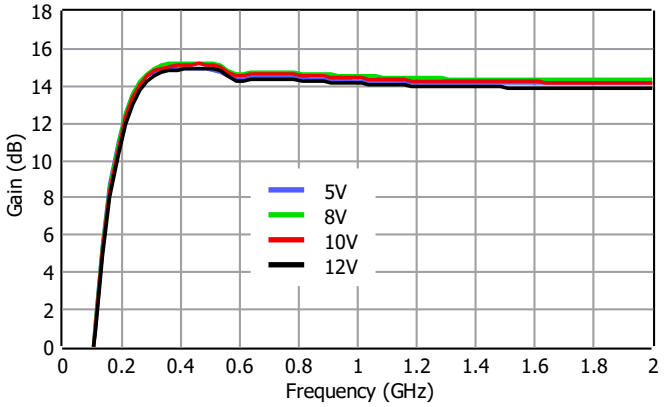
Typical Performance Plots

Conditions unless otherwise specified: V_{DD} = 12 V, Typical, T = 25 C, CW.

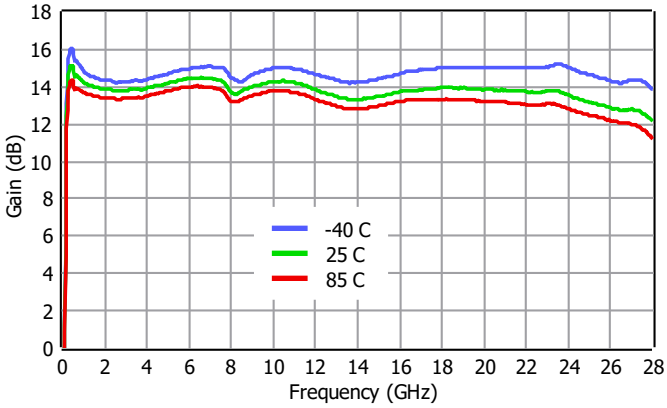
Gain



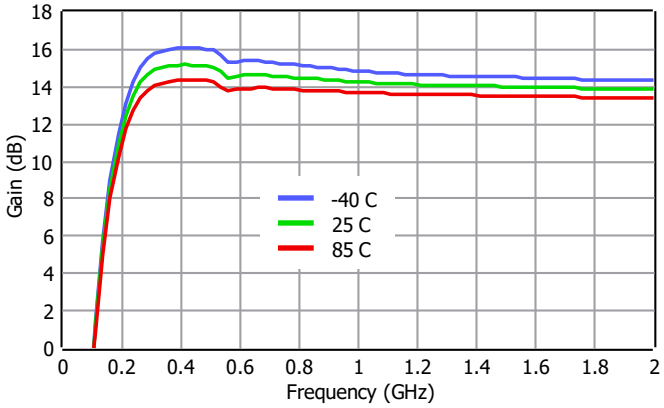
Gain at Low Frequency



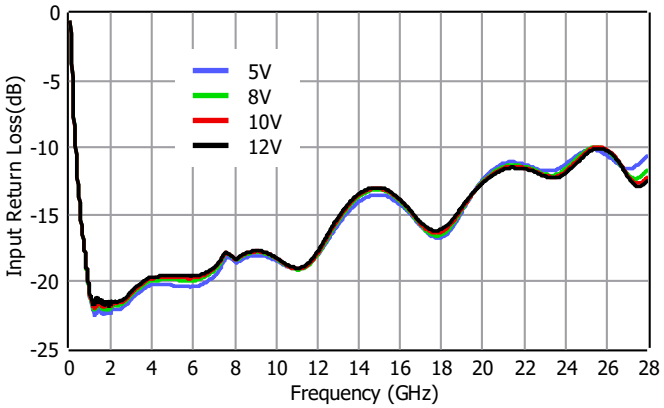
Gain vs Temperature



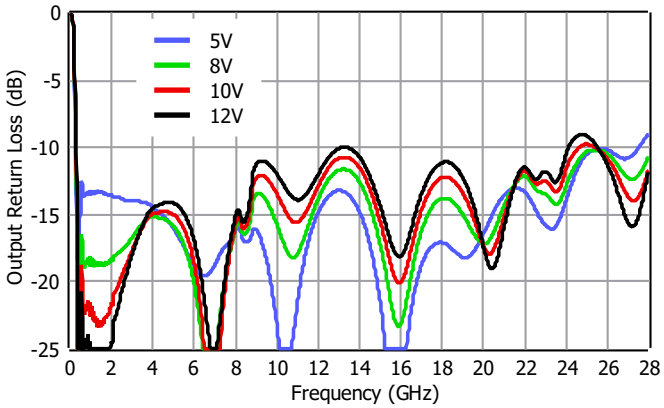
Gain vs Temperature at Low Frequency



Input Return Loss



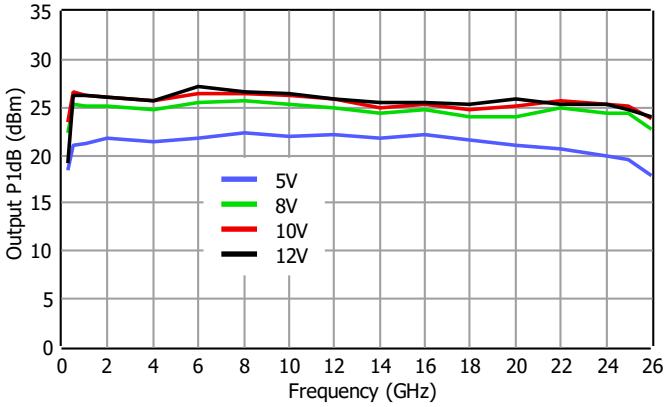
Output Return Loss



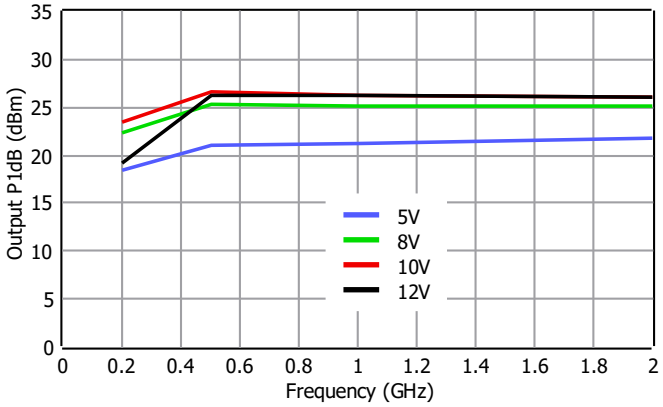
Typical Performance Plots

Conditions unless otherwise specified: V_{DD} = 12 V, Typical, T = 25 C, CW.

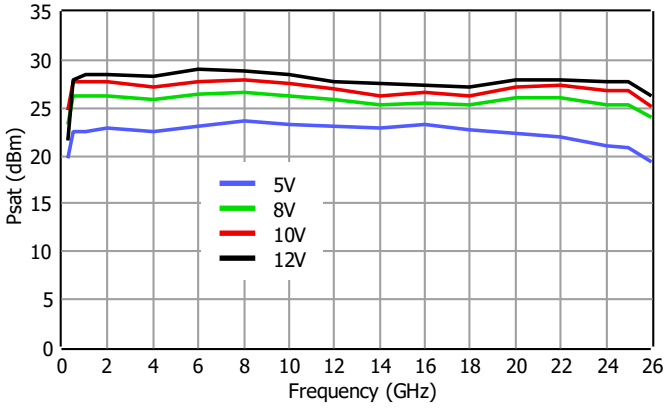
P1dB



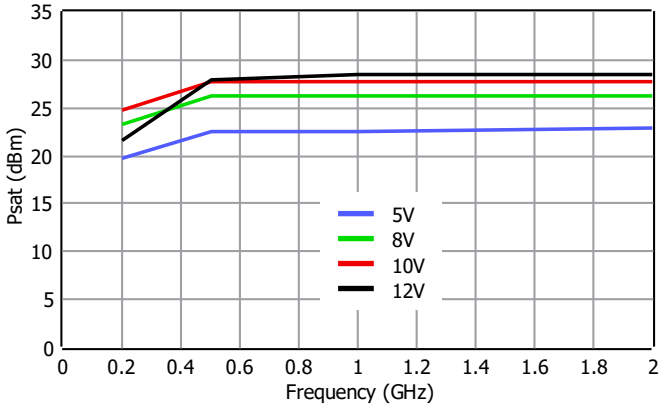
P1dB at Low Frequency



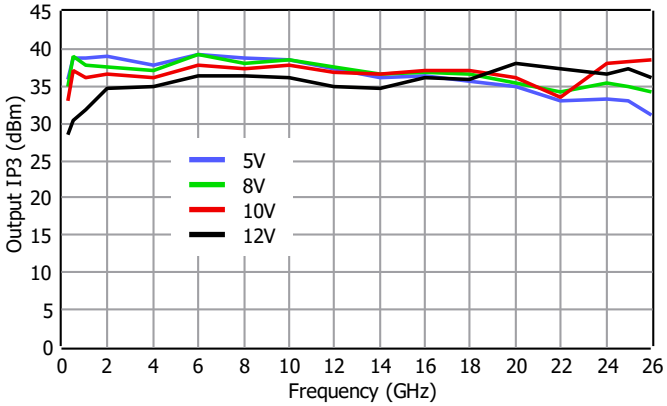
Psat



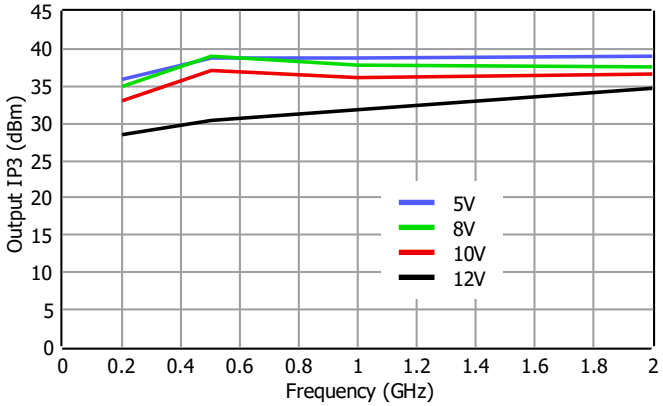
Psat at Low Frequency



IP3



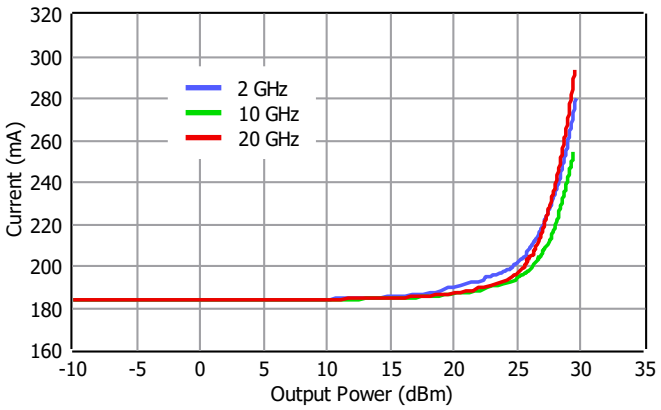
IP3 at Low Frequency



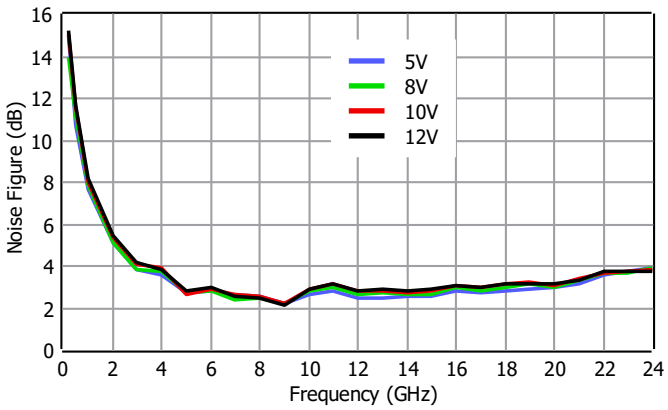
Typical Performance Plots

Conditions unless otherwise specified: V_{DD} = 12 V, Typical, T = 25 C, CW.

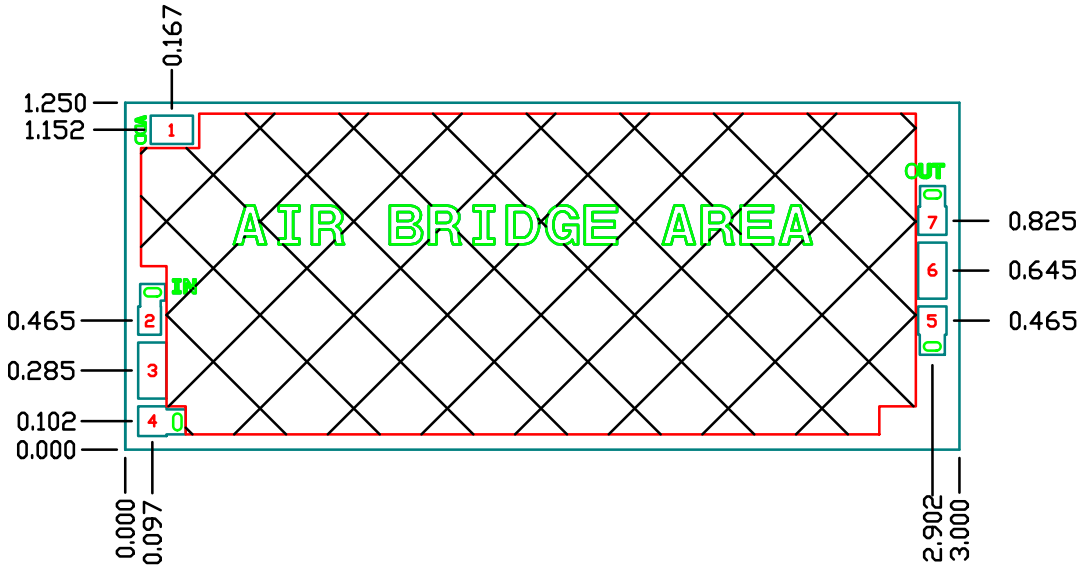
Output Power vs Current, Frequency



Noise Figure



Pad Description and Mechanical Dimensions

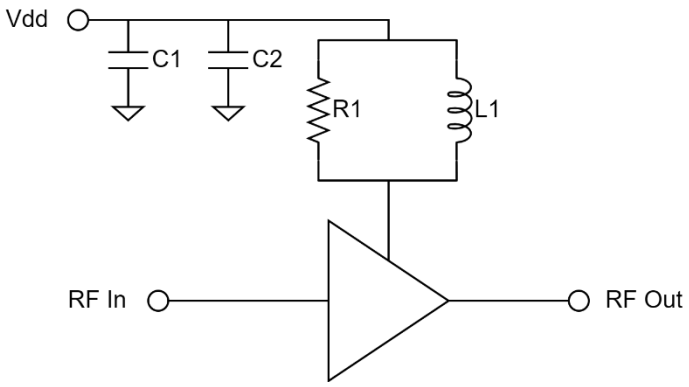


Units: millimeters
Thickness: 0.10
Die x, y size tolerance: ±0.05
Backside of die is ground

Pad Number	Pad Name	Pad Size (mm)	Description
3	RFIN	0.101x0.202	RF input pad. AC coupled.
6	RFOUT	0.101x0.202	RF output pad. AC coupled.
1	VDD	0.152x0.102	Vdd bias pad.
2	GND	0.082x0.102	Ground.
4	GND	0.102x0.107	Ground.
5, 7	GND	0.102x0.102	Ground.
	Die Bottom		Ground.

Applications Information

Signal entering from RF IN goes to RF OUT with an amplification.
A typical application schematic to operate the amplifier is given below.



The amplifier is optimized for simple biasing circuitry. It only requires low cost L1 and R1 for biasing. DC block capacitors and self-biasing circuity are realized inside the MMIC. Contact for further information on L1 and R1.

C1 and C2 are used to filter out the ripples and unwanted signals coming from the Vdd supply. Using additional capacitors in parallel to C1 and C2 will improve this filtering. If this filtering is of no concern, then the amplifier can be operated without C1 and C2.

Absolute Maximum Ratings

Parameter	Value/Range
Supply Voltage (Vdd)	+12.5 V
RF Input Power (Vdd = +10.0 V)	+25 dBm
Channel Temperature	175 °C
Power Dissipation (Ta=85 °C)	3.79 W
Thermal Resistance	24 °C/W
Storage Temperature	−55 to +125°C
Operating Temperature	−40 to +85°C

Operation of this device outside the parameter ranges given above may cause damage. These conditions should not be applied simultaneously.

Handling Precautions

Caution!
ESD-Sensitive Device
Handle Accordingly

Contact Information

For the latest specifications, additional product information, support, and sales.
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Email: support@atekmidas.com

Notice

Revisions

Revision No	Revision Date	Revision Reason	Section / Page No
0.1	16.01.2026	Initial Release	
0.2	06.02.2026	Plots Added and AMR Table Revised	
0.3	25.02.2026	Format and Content Fixed	
0.4	05.06.2026	Product Release, Format and Content Fixed	