AM1022 - Amplifier

20 MHz to 8 GHz Gain Block

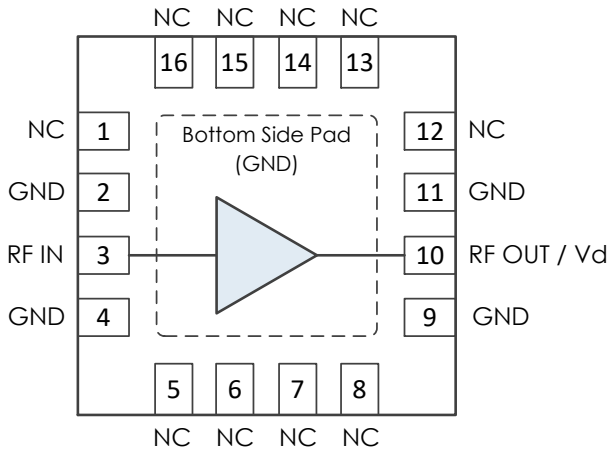
Not Recommended For New Designs.
See AM1031C or AM1063-1 For Replacement Device.
Drop In +1.8V Device Replacement In Development.

AM1022 is a high dynamic range cascadable gain block covering the 20 MHz to 8 GHz frequency range. It operates from either a +1.8VDC or +3.3VDC supply, exhibits low noise figure and respectable P1dB and third order intercept performance while also providing excellent gain stability over the operating temperature range.

Features

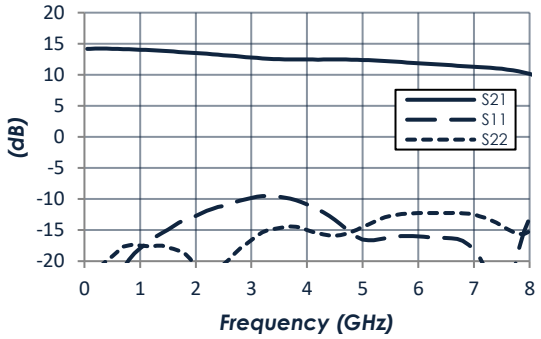
- 13 dB Gain
- 2.0 dB Noise Figure
- +24 dBm OIP3
- +12 / +15 dBm P1dB
- +1.8V, 26 mA / +3.3V, 45 mA Supply
- 3mm QFN Package
- -40C to +85C Operation
- Unconditionally Stable

Functional Diagram

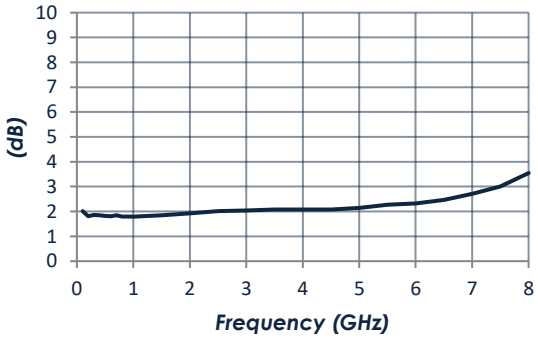


Performance (at +1.7V device voltage, Vd)

Gain and Return Loss at +25C

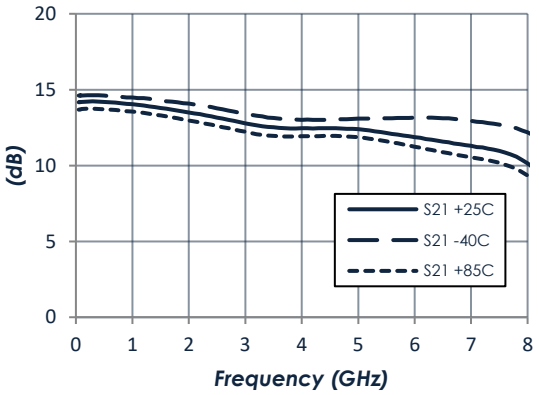


Noise Figure at +25C

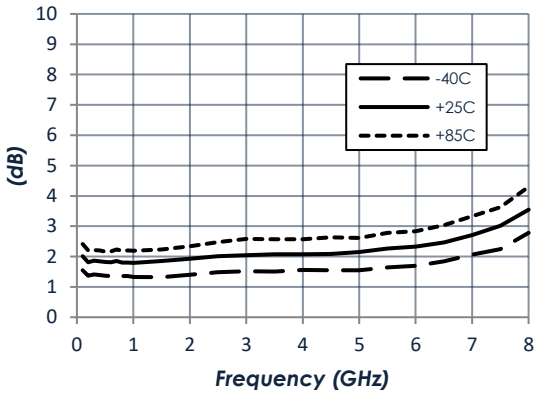


Performance (at +1.7V device voltage, Vd)

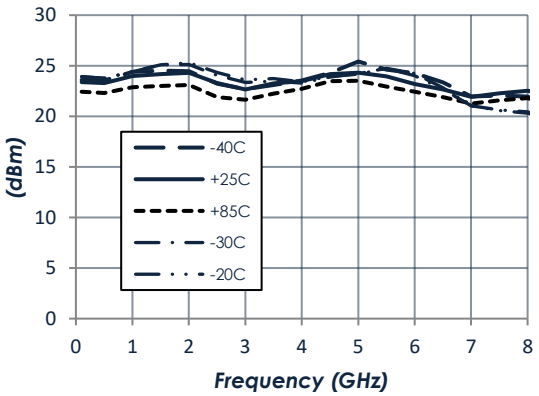
Gain vs Temperature



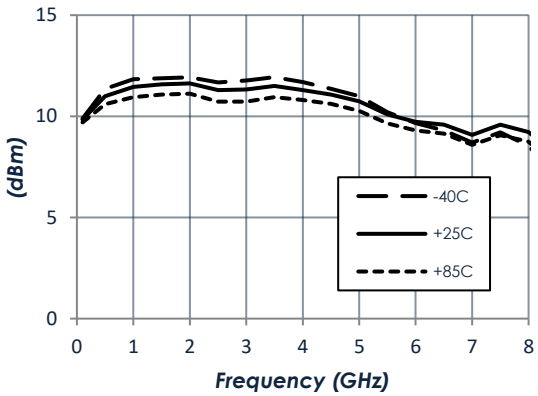
Noise Figure vs Temperature

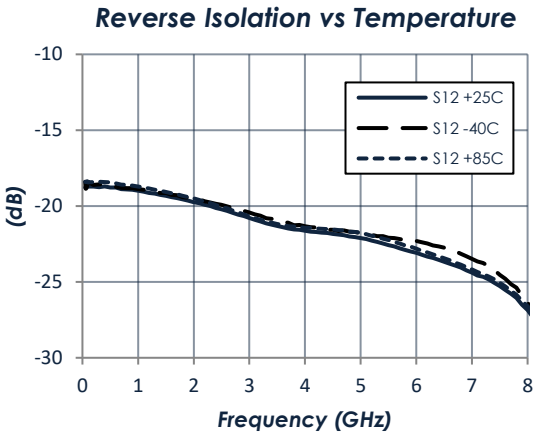


Output IP3 vs Temperature

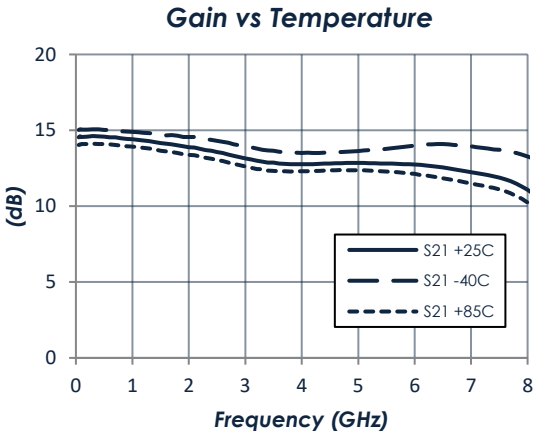


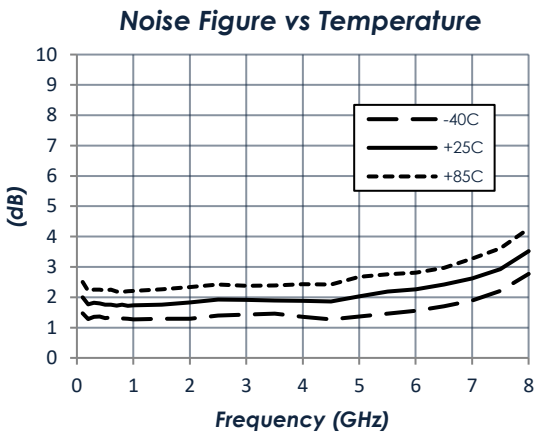
P1dB vs Temperature





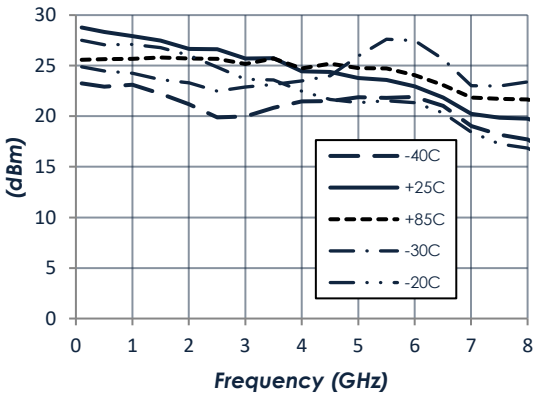
Performance (at +3.0V device voltage, Vd)



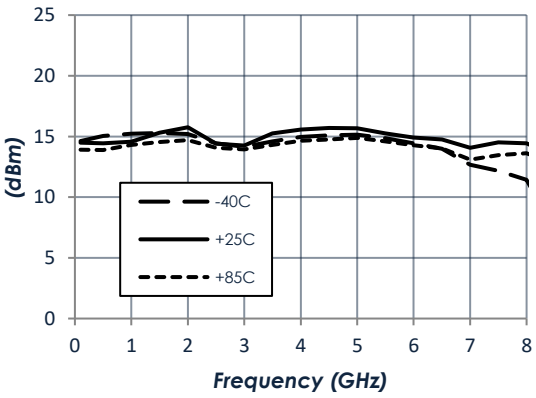


Performance (at +3.0V device voltage, Vd)

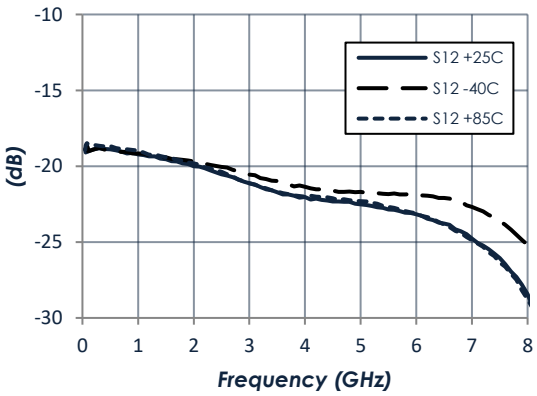
Output IP3 vs Temperature



P1dB vs Temperature



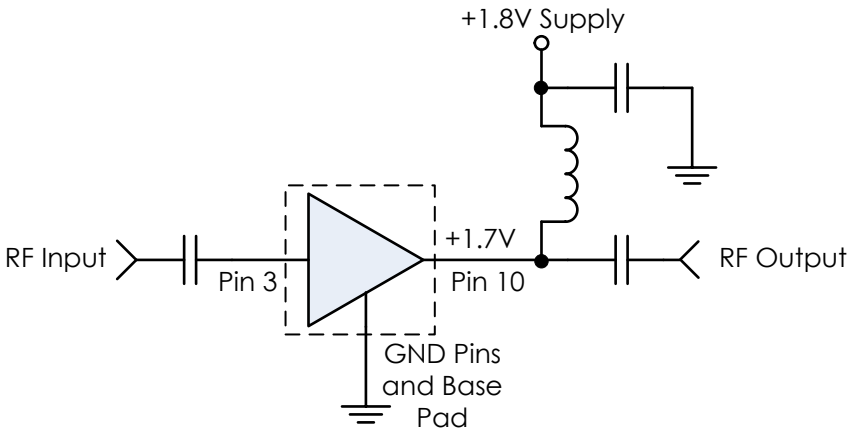
Reverse Isolation vs Temperature



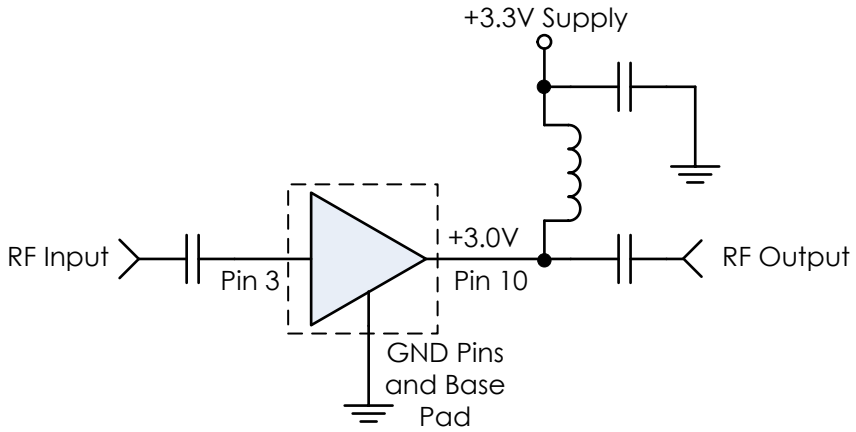
Additional Specifications

Current at +1.7V Device Voltage (Vd)	26 mA typ, 22 to 30mA max
Current at +3.0V Device Voltage (Vd)	45 mA typ, 40mA to 50mA max
Device Voltage (Vd)	+1.7V to +3.3V max
Maximum RF Input	+13 dBm
Operating Temperature Range	-40C to +85C
Storage Temperature Range	-50C to +125C

Typical Application Circuit from a +1.8V Supply

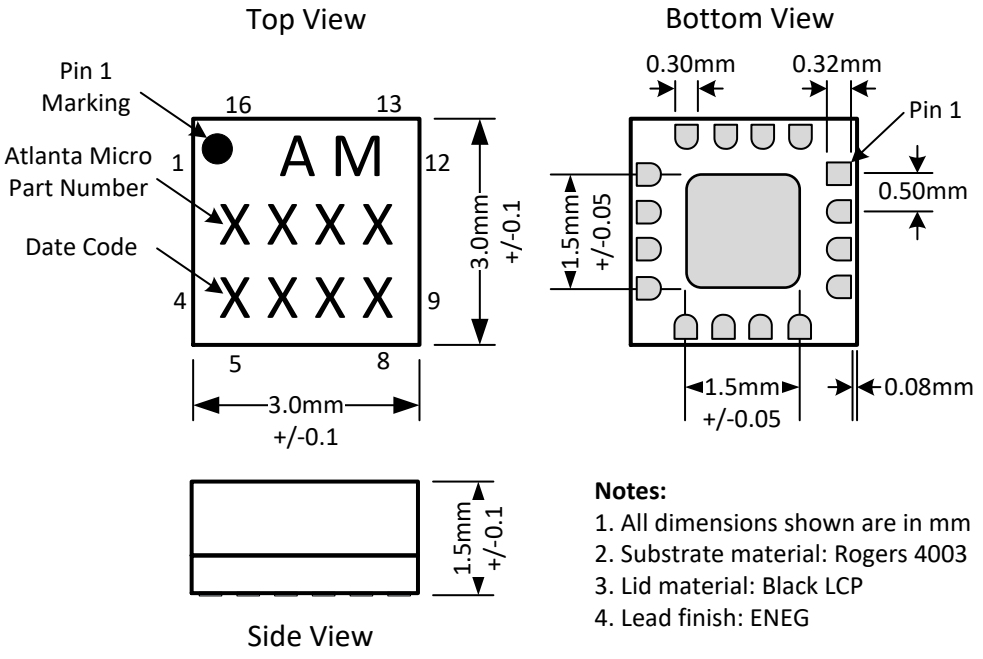


Typical Application Circuit from a +3.3V Supply



*External DC blocking capacitors and RF choke are required. Select values for the frequency range of interest. No input or output matching is required. NC pins may be left open or connected to ground.

Package Details



Notes:

1. All dimensions shown are in mm
2. Substrate material: Rogers 4003
3. Lid material: Black LCP
4. Lead finish: ENEG

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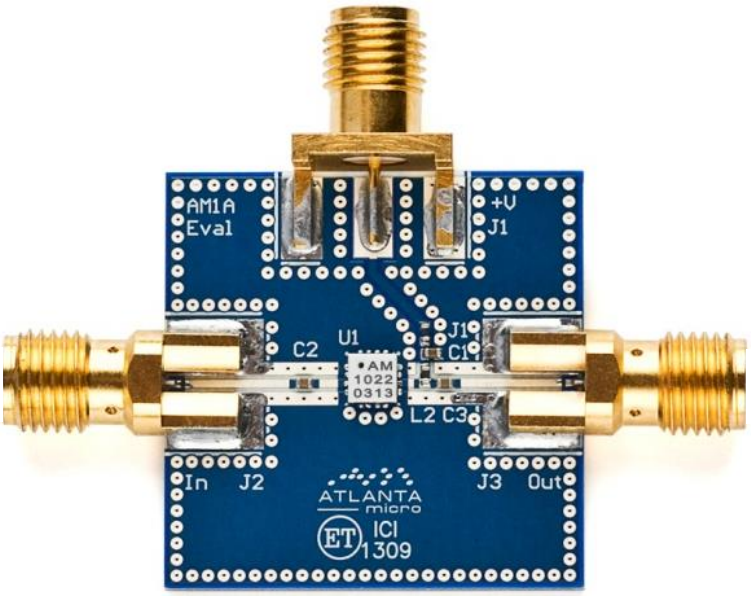
Evaluation PC Board

+V Supply
(+V on center pin, Ground on shield)

RF Input



RF Output

External DC blocking capacitors and RF choke are included.

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