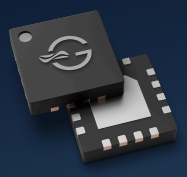
TAGORE

Ultra-low-noise amplifier

TL0374J

A GaAs ultra-low-noise amplifier from 30 MHz to 3 GHz in a tiny 2 × 2 mm package, with only 0.35 dB noise figure.



0.35 dB
Noise figure at 1.8 GHz

0.03–3 GHz
VHF to S-band

21.5 dB
Gain at 1.8 GHz

35 dBm
OIP3 at 1.8 GHz

What it does for your design

- **Hear weaker signals.** A 0.35 dB noise figure gives your receiver more range and sensitivity.
- **High gain.** 21.5 dB at 1.8 GHz.
- **Linear.** 35 dBm OIP3 and 18.5 dBm OP1dB handle strong nearby signals.
- **Easy to tune.** Set the bias current with one external resistor.
- **Simple supply.** 5 V typical, 60 mA.
- **Tiny footprint.** A 2 × 2 mm, 8-pin package.

Built for

4G and 5G infrastructure radios · Small cells and cellular repeaters · Phased array radar · SDARS

Key specifications

Parameter	Typical
Frequency range	30 MHz – 3.0 GHz
Gain	21.5 dB @ 1.8 GHz
Noise figure	0.35 dB @ 1.8 GHz
OP1dB	18.5 dBm @ 1.8 GHz
OIP3	35 dBm @ 1.8 GHz
Supply	5 V, 60 mA typical
Bias	Adjustable with one resistor
Package	8-pin, 2.0 × 2.0 × 0.75 mm

Why choose the TL0374J

A typical LNA
A higher noise figure costs you range, so you need more transmit power or bigger antennas.

With the TL0374J
0.35 dB noise figure in a 2 × 2 mm part, from VHF to 3 GHz.

Choose the right amplifier

Part (click for datasheet)	Type	Frequency	Noise figure	Gain	Package
TL0374J ↗	**Ultra-low-noise LNA**	**0.03 – 3.0 GHz**	**0.35 dB**	**21.5 dB**	**2 × 2 mm**
TL0375J ↗	Ultra-low-noise LNA	2.0 – 5.0 GHz	0.4 dB	17.5 dB	2 × 2 mm
TR0329M ↗	Two-stage LNA, bypass	2.0 – 4.2 GHz	0.5 dB	34 dB	3.5 × 3.5 mm
TP0310K ↗	0.5 W power LNA	0.03 – 3.8 GHz	1.0 dB	16.5 dB	3 × 3 mm

Need the lowest noise below 3 GHz? Choose the **TL0374J**. Working at 2 – 5 GHz? Choose the TL0375J.

Get started

STEP 1

Read the datasheet

Scan the code or visit
tagoretech.com/Product_Doc/TL0374J.pdf

STEP 2

Order samples

TL0374J

TL0374J-EVB · evaluation boards

From DigiKey, Richardson RFPD or your TagoreTech representative.

STEP 3

Talk to an expert

Our applications team will help you design it in.

support@tagoretech.com

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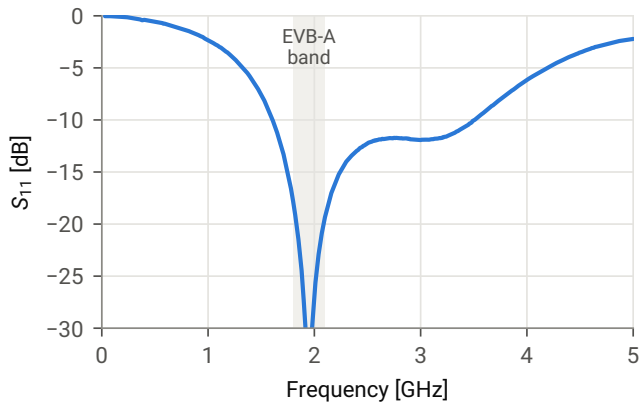
Typical performance

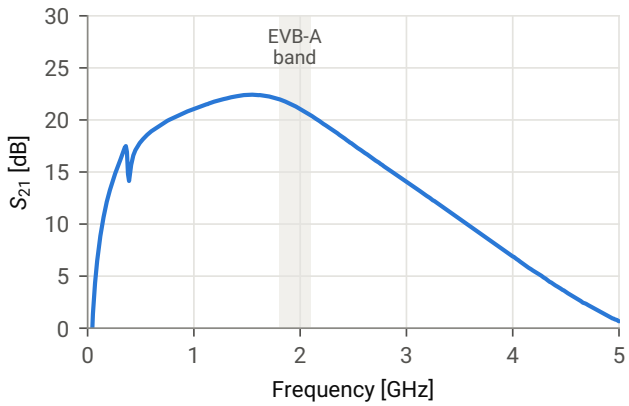
Measured curves from the TL0374J datasheet, T_A = 25 °C, 50 Ω.

S-parameters

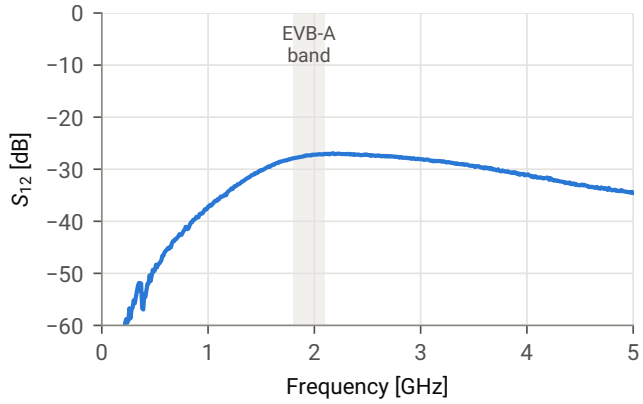
Evaluation board



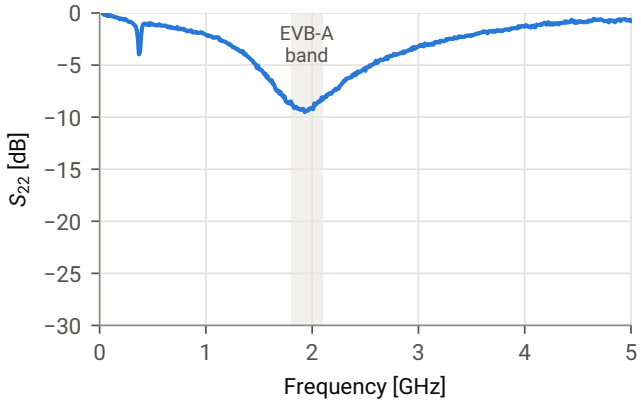
(a) S_{11} (input return loss) vs. frequency.



(b) S_{21} (gain) vs. frequency.



(c) S_{12} (reverse isolation) vs. frequency.



(d) S_{22} (output return loss) vs. frequency.

Typical values

Parameter	1.8 GHz
Gain (dB)	21.5
Noise figure (dB)	0.35
OP1dB (dBm)	18.5
OIP3 (dBm)	35

Full data, S-parameters and evaluation board details in the datasheet at tagoretech.com/Product_Doc/TL0374J.pdf.

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