Description

The F1129 family is a series of single-ended input / differential output 1400MHz to 6000MHz high gain RF amplifiers. The combination of low noise figure and high linearity performance allows these device to be used in both receiver and transmitter applications.

The F1129 series is designed to operate with a single 5V power supply using a nominal 70mA of I_{CC}. With a supply voltage of 5V, the F1129 variant provides 18dB typical gain with 2.2dB noise figure and +32dBm OIP3 at 3600MHz.

Each F1129 variant is packaged in a 2mm x 2mm, 12-pin DFN, with 50Ω single-ended RF input and 50Ω or 100Ω differential RF output impedances for ease of integration into the signal-path.

Competitive Advantage

- High Gain
- Excellent Gain Flatness Over Frequency
- Outstanding Gain Variance Over Temperature
- STBY Feature
- Differential Output to Directly Drive Transceiver Inputs

Typical Applications

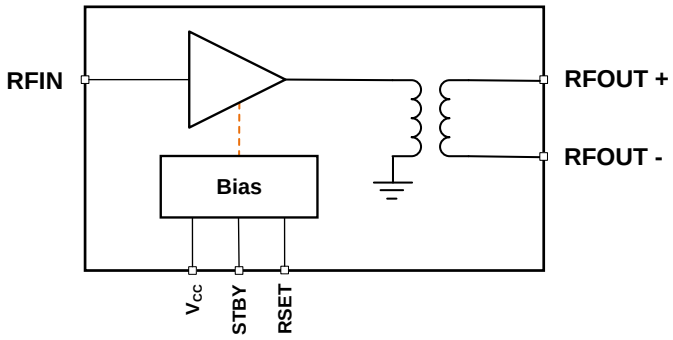
- 5G / MIMO Base Stations
- 4G TDD & FDD Base Stations
- 2G/3G Base Stations
- Repeaters and DAS
- Point to Point Infrastructure
- Public Safety Infrastructure
- Military Handhelds

Features

- RF Range: 1400MHz to 6000MHz
  - F1129Lx Variants: 1400MHz to 3200MHz
  - F1129Mx Variants: 3000MHz to 4200MHz
  - F1129Hx Variants: 4000MHz to 6000MHz
- Gain = 18dB at 3600MHz
- Noise Figure = 2.2dB at 3600MHz
- OIP3 = +32dBm at 3600MHz
- Output P1dB = +18dBm at 3600MHz
- Near-Constant Gain versus Temperature
- 5V Power Supply
- I_{CC} = 70mA at 5V
- 2mA Standby Current
- 350mW Typical DC Power at 5V Supply
- 50Ω Single-ended Input Impedances
- 50Ω or 100Ω Differential Output Impedances
  - F1129xA Variants: 50Ω Differential Outputs
  - F1129xB Variants: 100Ω Differential Outputs
- 1.8V and 3.3V Logic Support for STBY Control
- Operating Temperature (T_{EP}) Range: -40°C to +115°C
- 2mm x 2mm, 12-pin DFN Package

Block Diagram

Figure 1. Block Diagram



Component Family Variants

Base Part Number	Frequency Band	Frequency Coverage	Differential Output Impedance
F1129LA	Low	1400MHz to 3200MHz	50Ω
F1129LB			100Ω
F1129MA	Mid	3000MHz to 4200MHz	50Ω
F1129MB			100Ω
F1129LA	High	4000MHz to 6000MHz	50Ω
F1129LB			100Ω

Ordering Information

Orderable Part Number	Package	MSL Rating	Shipping Packaging	Temperature
F1129LANELI	2mm x 2mm x 0.75mm 12 pin DFN	1	Tray	-40° to +115°C
F1129LANELI8	2mm x 2mm x 0.75mm 12 pin DFN	1	Reel	-40° to +115°C
F1129LBNELI	2mm x 2mm x 0.75mm 12 pin DFN	1	Tray	-40° to +115°C
F1129LBNELI8	2mm x 2mm x 0.75mm 12 pin DFN	1	Reel	-40° to +115°C
F1129MANELI	2mm x 2mm x 0.75mm 12 pin DFN	1	Tray	-40° to +115°C
F1129MANELI8	2mm x 2mm x 0.75mm 12 pin DFN	1	Reel	-40° to +115°C
F1129MBNELI	2mm x 2mm x 0.75mm 12 pin DFN	1	Tray	-40° to +115°C
F1129MBNELI8	2mm x 2mm x 0.75mm 12 pin DFN	1	Reel	-40° to +115°C
F1129HANELI	2mm x 2mm x 0.75mm 12 pin DFN	1	Tray	-40° to +115°C
F1129HANELI8	2mm x 2mm x 0.75mm 12 pin DFN	1	Reel	-40° to +115°C
F1129HBNELI	2mm x 2mm x 0.75mm 12 pin DFN	1	Tray	-40° to +115°C
F1129HBNELI8	2mm x 2mm x 0.75mm 12 pin DFN	1	Reel	-40° to +115°C
F1129EVB	Evaluation Board			

IMPORTANT NOTICE AND DISCLAIMER

RENESAS ELECTRONICS CORPORATION AND ITS SUBSIDIARIES (“RENESAS”) PROVIDES TECHNICAL SPECIFICATIONS AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES “AS IS” AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT OF THIRD-PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for developers who are designing with Renesas products. You are solely responsible for (1) selecting the appropriate products for your application, (2) designing, validating, and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. Renesas grants you permission to use these resources only to develop an application that uses Renesas products. Other reproduction or use of these resources is strictly prohibited. No license is granted to any other Renesas intellectual property or to any third-party intellectual property. Renesas disclaims responsibility for, and you will fully indemnify Renesas and its representatives against, any claims, damages, costs, losses, or liabilities arising from your use of these resources. Renesas' products are provided only subject to Renesas' Terms and Conditions of Sale or other applicable terms agreed to in writing. No use of any Renesas resources expands or otherwise alters any applicable warranties or warranty disclaimers for these products.

(Disclaimer Rev.1.01)

Corporate Headquarters

TOYOSU FORESIA, 3-2-24 Toyosu,
Koto-ku, Tokyo 135-0061, Japan
www.renesas.com

Contact Information

For further information on a product, technology, the most up-to-date version of a document, or your nearest sales office, please visit www.renesas.com/contact-us/.

Trademarks

Renesas and the Renesas logo are trademarks of Renesas Electronics Corporation. All trademarks and registered trademarks are the property of their respective owners.