

# GX72170

32Gbps Single Channel Linear Driver

The GX72170 is a high-performance low-V<sub>pi</sub> linear Mach-Zender Modulator (MZM) driver designed for 100G DP-QPSK and 200G/400G DP-mQAM metro, and long-haul optical Small-Form-Factor (SFF) transmitters.

The GX72170 is a broad band and ultralow power SiGe single-channel amplifier die and integrates a linear pre-amplifier and a post-amplifier with AC-coupled differential input and differential output interfaces. The device can drive a linear output voltage of 3.0V<sub>ppd</sub> with differential characteristic impedance of around 50Ω.

## Features

- 32 Gbaud linear driver
- 100Ω differential input/50Ω differential output impedance
- 0.2 – 0.5V<sub>ppd</sub> input/1.5 – 3.0V<sub>ppd</sub> output
- 22GHz 3dB-bandwidth with gain flatness of ±0.5dB up to 10GHz and less than 2dB peaking form 16 to 24GHz
- 10dB variable gain control
- Linear operation with less than 3% total harmonic distortion
- Integration of peak detector and temperature monitor
- 420mW power consumption

## Applications

- Next generation small form factor such as CFP2/4
- 200 and 400Gbps Advanced Multi-Level Modulation Systems

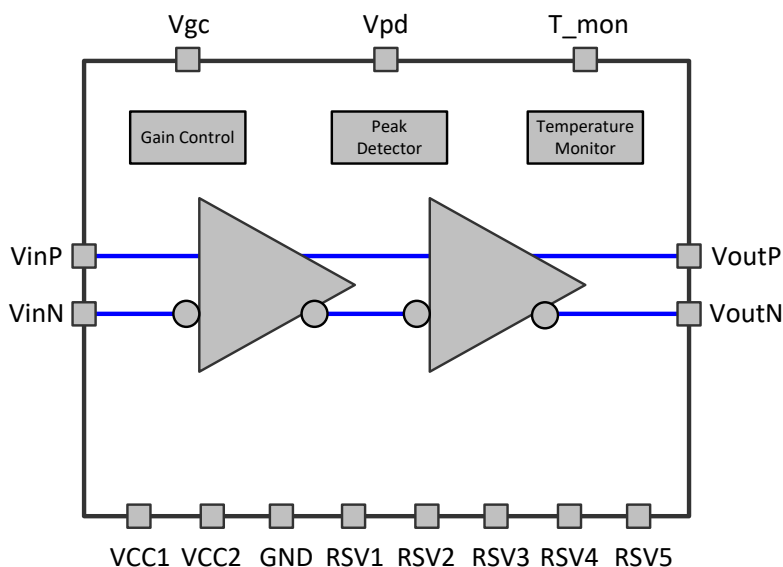


Figure 1. Block Diagram

## 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](http://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/](http://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.