

Data center optical drivers and TIAs using SiGe 9HP & 8XP

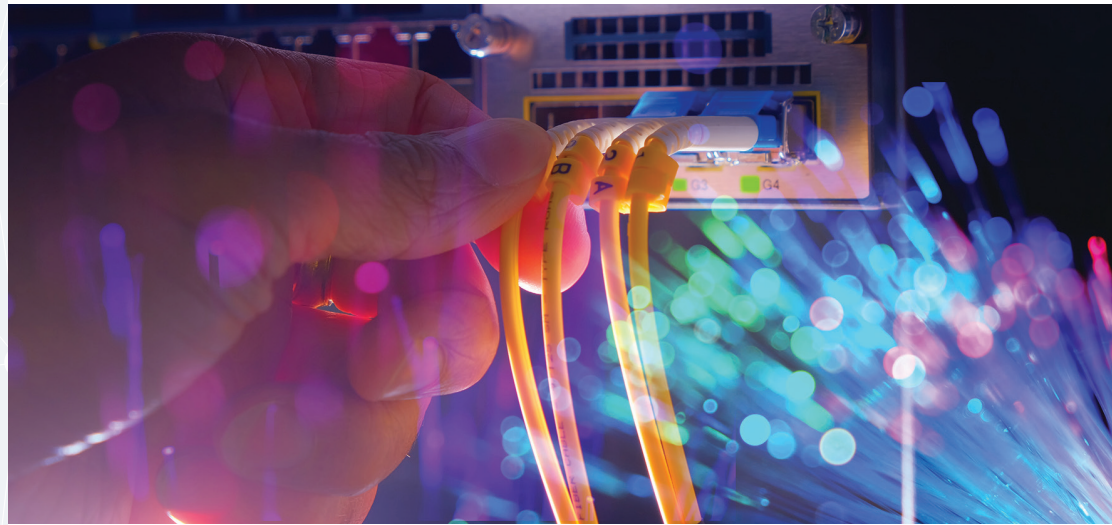
Enabling low-power, high-frequency optical data links



SiGe 9HP is the highest f_{max} SiGe BiCMOS foundry process in volume production today.



Industry-leading, RF-optimized PDKs from SiGe pioneers.



Current and emerging performance-driven data center applications require low-power, low-noise, high-bandwidth transimpedance amplifier (TIA) and driver performance.

The high-performance silicon germanium BiCMOS (SiGe HP) portfolio from GlobalFoundries® (GF®) is designed to deliver the speed, performance and bandwidth that chips for next-generation optical communications hardware require. The silicon-proven solutions enable you to integrate extensive digital and RF functionality and exploit silicon economies of scale.

9HP and 8XP at a glance

Platforms	Key features
90 and 130 nm SiGe BiCMOS	<ul style="list-style-type: none"> • Superior performance on a proven, economical silicon technology base that enables integration of digital and RF functions and operation at high junction temperatures • End-to-end design enablement to accelerate time to market • Industry-leading process design kits and ultra-accurate device models



Maximize performance:

Advanced heterojunction bipolar transistors provide superior low-noise and high-frequency performance (370 GHz and 250 GHz f_{max} using SiGe 9HP and SiGe 8XP, respectively). An advanced copper metallization feature offers five times the current density at 100°C, or up to 25°C higher operating temperature at the same current density.*



Take advantage of expert-developed process design kits:

GF PDKs provide RF-specific tool support and industry-leading model-to-hardware correlation accuracy. The kits leverage our experts' decades of experience with SiGe solutions—some of the original scientists and engineers who developed SiGe and brought it into high-volume production.



Leverage high-volume manufacturing:

GF high-volume manufacturing offers supply assurance and enables advanced processing and controls for optical applications. SiGe 9HP and 8XP are fully qualified and in high-volume production on GF's 200 mm manufacturing processes. Additionally, SiGe 8XP is automotive grade 1 qualified for reliability you can count on.



Accelerate time to market:

SiGe HP solutions are complemented by end-to-end design enablement, prototyping services, superior factory capabilities and RFwave™ ecosystem solutions so you can meet design and performance goals, easily inject differentiation and get to market faster.

[LEARN MORE](#)

SiGe HP solutions for data center optical communications from GF

Solution/benefits	9HP: Superior RF performance, featuring 310/370 GHz f_t/f_{max} with up to 50% more integration density than SiGe 8XP.
	8XP: Outstanding RF performance solution, featuring 250/340 GHz f_t/f_{max} , enabling performance/value trade-offs.

Learn how high-performance SiGe solutions from GF can help you move more data—faster, farther and more cost efficiently— at globalfoundries.com/contact-us

Contact Us



* Compared to the base technology.

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