SL2120

Product Brief

Features

- Small package low-side ultra-fast octal gate driver for GaN and Silicon FETs
- 250 µm driver pitch to match the pitch of SL2130 GaN FET array by Silanna Semiconductor
- 1 ns minimum pulse width
- Up to 50 MHz operation (for a single driver output)
- <5 ns typical propagation delay
- 400 ps typical rise and fall time
- 2.5 A peak source and 3 A peak sink current
- Simple PCB layout enabled through reduced signals needed when driving multiple SL2120s from the same controller
- 2.15 mm x 1.94 mm WLCSP package

Applications

Laser TOF Measurement Systems
Automotive LiDAR
Industrial LiDAR
3D Mapping
ADAS
Wireless Chargers
AR/ VR

Product Description

Silanna Semiconductor's SL2120 is an eight-channel addressable low-side ultra-fast gate driver for GaN and Silicon FETs. SL2120 is targeted for high-speed applications such as LiDAR, time-of-flight, augmented and virtual reality (AR/VR), facial recognition, and power converters involving low side drivers.

The compact design of independently controlled 8-channel gate driver when paired with SL2130 (8-channel GaN FET array) makes an ideal chipset for driving addressable VCSEL arrays (Fig.1), creating a simple layout and enabling very short pulse width of 1 ns and up to 50 MHz operation for a single driver output (if N drivers are fired simultaneously, the max switching frequency is reduced to 50/N MHz). Multiple drivers and corresponding FETs can be triggered together to reduce the effective On-Resistance (R_{DS_ON}) of the GaN FETs in the SL2130 chipset.

The 3-dual purpose pins (ADR0/SCK, ADR1/SDI & ADR2/SDO) function by default as a programmable parallel interface to select any eight combinations of the drivers with the ability to change among selections in <10ns. As an example, those 3-pins can be used to individually select one of the eight driver channels (via internal decoder). These pins can also be used to write to the internal registers of SL2120 IC (via SPI protocol) to change the functionality of the parallel interface (<10us).

SL2120 features undervoltage and overtemperature protections to guarantee safety and reliability.

Space saving 2.15 mm x 1.94 mm WLCSP package of SL2120 minimizes gate loop inductance and maximizes power density in high-frequency applications.

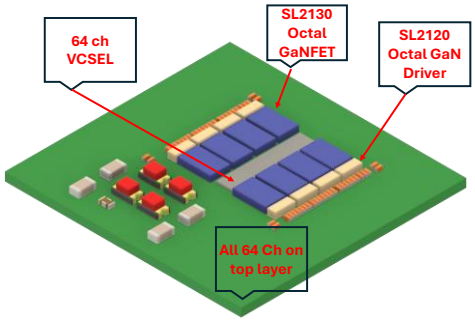


Fig.1 PCB illustration of eight SL2120s paired with eight SL2130s driving a 64-channel VCSEL array

Block Diagram

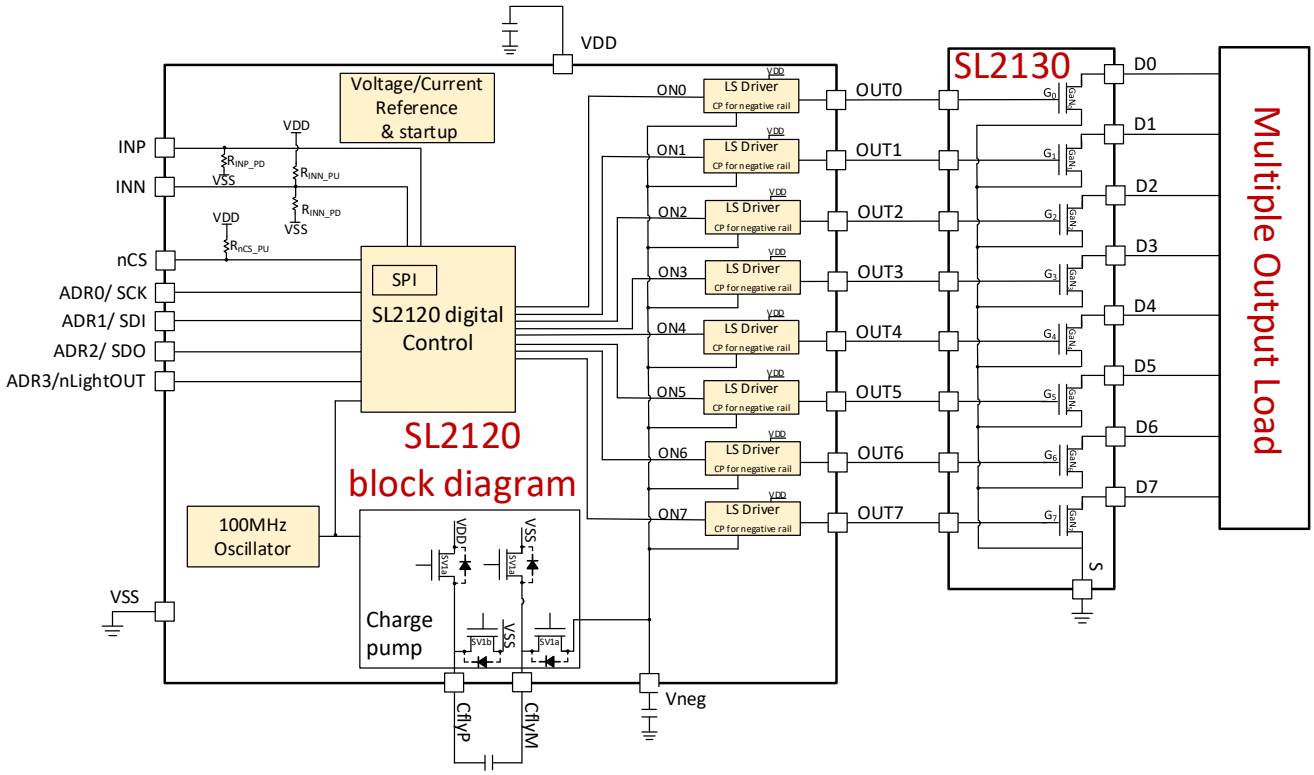


Fig.2 Block diagram of SL2120

Part Ordering Information

Part Number	Package	Feature	Shipping Method
SL2120A-WKS	WLCSP with 20-Bumps	Octal Driver	2,500 pcs Tape & Reel

Revision History

Revision	Date	Author	Note
1.0	1 Nov 2026	AZ	Website Release