eGaN® FETs and ICs for LiDAR

EFFICIENT POWER CONVERSION

LiDAR (Light Distancing and Ranging) uses pulsed lasers to rapidly create a three dimensional image or map of a surrounding area.

Today's eGaN FET's ability to switch ten times faster than the aging power MOSFET gives LiDAR systems superior resolution, faster response time, and greater accuracy.

These characteristics enable new and broader applications for LiDAR such as real-time motion detection for video gaming, computers that respond to hand gestures, and fully autonomous vehicles.

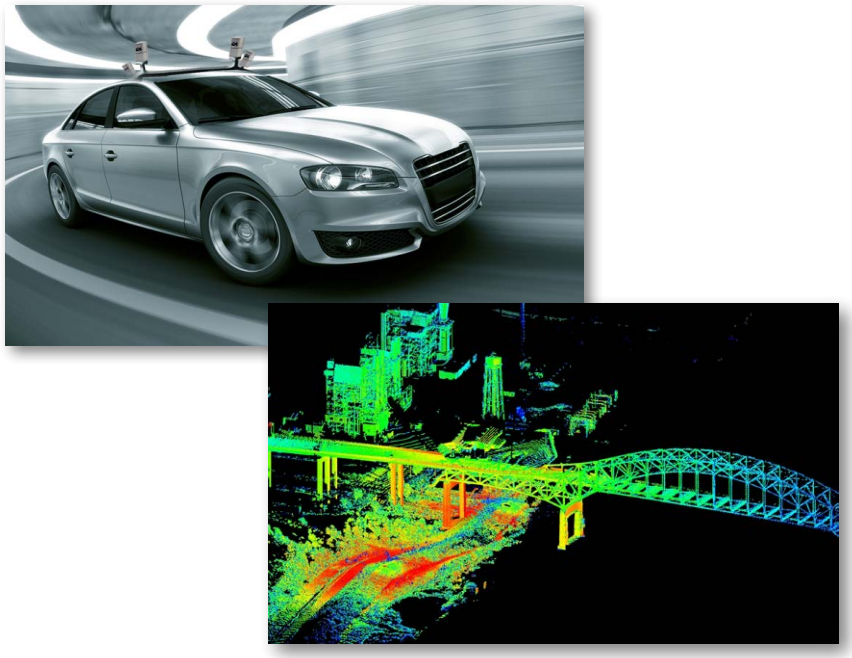
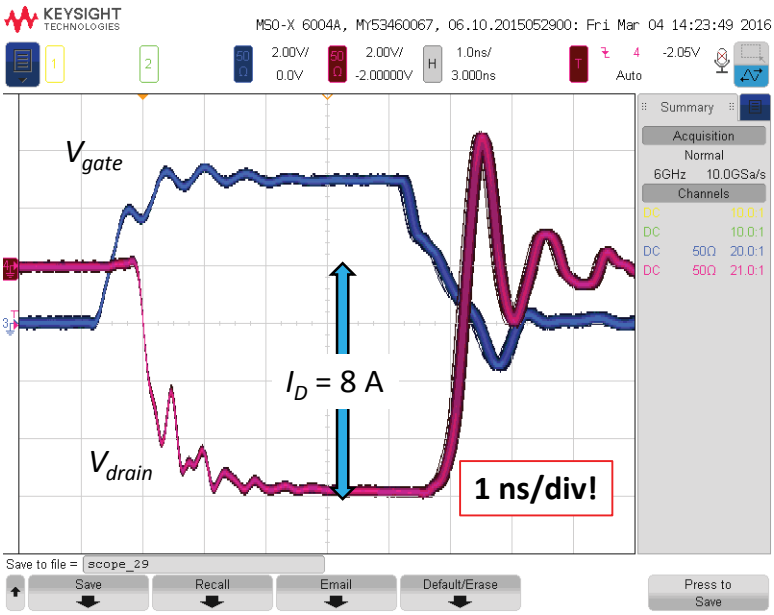


Photo Credit: U.S. Geological Survey/photo by Toby Minear

Benefits of eGaN Technology in Your LiDAR Designs

- **Faster Switching** – More accurate and smaller pulses
- **Higher Efficiency** – Higher pulse repetition rate
- **Smaller Footprint** – Higher power density, lower inductance, integration with Laser Diode



EPC9126HC: 8 A load, 5 ns pulse width, 200 ns rise, 500 ns fall eGaN FETs enable faster and higher current laser pulses

eGaN FET and ICs

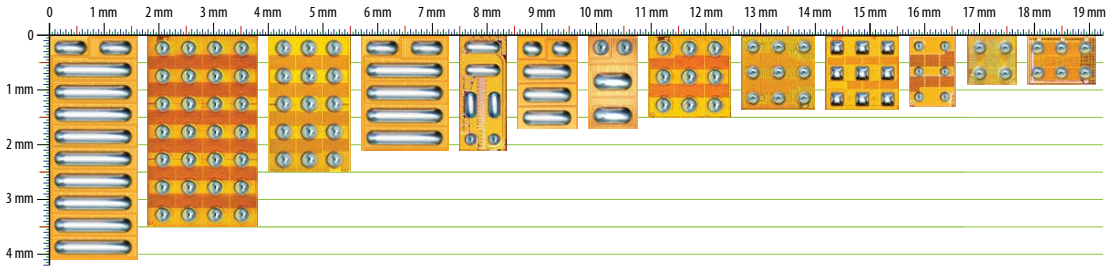
High Current, Narrow Pulse Width Demo Boards

Part Number	Description	V_{BUS} (max)	V_{INPUT} (max)	T_{PIN} (min)	Max Pulse (A)
EPC9126	100 V High Current Pulsed Laser Diode Driver Demo Board	80	5	6 ns	75
EPC9126HC		80	5	6 ns	150

Recommended Devices for LiDAR

Part Number	Configuration	V_{DS}	Max $R_{DS(on)}$ (mΩ) @ 5 V_{GS}	Q_G typ (nC)	Q_{GS} typ (nC)	Q_{GD} typ (nC)	Q_{OSS} typ (nC)	Q_{RR} (nC)	I_D (A)	Pulsed I_D (A)	Package (mm)	Demo Board
EPC2040	Single	15	30	0.745	0.23	0.14	0.42	0	3.4	28	BGA 0.85 x 1.2	n/a
EPC8004	Single	40	110	0.37	0.12	0.047	0.63	0	4	7.5	LGA 2.05 x 0.85	EPC9024
EPC2014C	Single	40	16	2	0.7	0.3	4	0	10	60	LGA 1.7 x 1.1	EPC9005C
EPC2015C	Single	40	4	8.7	2.7	1.2	19	0	53	235	LGA 4.1 x 1.6	EPC9001C
EPC2035	Single	60	45	0.88	0.25	0.16	2.6	0	1.7	24	BGA 0.9 x 0.9	EPC9049
EPC8002	Single	65	480	0.133	0.057	0.015	0.344	0	2	2	LGA 2.05 x 0.85	EPC9022
EPC8009	Single	65	130	0.37	0.12	0.055	0.94	0	4	7.5	LGA 2.05 x 0.85	EPC9029
EPC2214	Single	80	20	1.8	0.5	0.3	8	0	10	47	BGA 1.35 x 1.35	n/a
EPC2038	Single with Gate Diode	100	3300	0.044	0.02	0.004	0.134	0	0.5	0.5	BGA 0.9 x 0.9	EPC9507
EPC2037	Single	100	550	0.115	0.032	0.025	0.6	0	1.7	2.4	BGA 0.9 x 0.9	EPC9087
EPC8010	Single	100	160	0.36	0.13	0.06	2.2	0	4	7.5	LGA 2.05 x 0.85	EPC9030
EPC2036	Single	100	73	0.7	0.17	0.14	3.9	0	1.7	18	BGA 0.9 x 0.9	EPC9050
EPC2007C	Single	100	30	1.6	0.6	0.3	8.3	0	6	40	LGA 1.7 x 1.1	EPC9006C
EPC2051	Single	100	25	1.7	0.6	0.3	7.3	0	1.7	37	BGA 1.3 x 0.85	EPC9091
EPC2016C	Single	100	16	3.4	1.1	0.55	16	0	18	75	LGA 2.1 x 1.6	EPC9010C
EPC2212	Single - AEC-Q101	100	13.5	3.2	0.9	0.6	18	0	18	75	LGA 2.1 x 1.6	n/a
EPC2052	Single	100	13.5	3.6	1.5	0.5	13	0	8.2	74	BGA 1.5 x 1.5	EPC9092
EPC2045	Single	100	7	5.9	1.9	0.8	25	0	16	130	BGA 2.5 x 1.5	EPC9078
EPC2001C	Single	100	7	7.5	2.4	1.2	31	0	36	150	LGA 4.1 x 1.6	EPC9002C
EPC2053	Single	100	3.8	12	4.1	1.5	45	0	48	246	BGA 3.5 x 2	EPC9093

Table data subject to change. Please refer to the Product section on www.epc-co.com.



Design Support Materials @ www.epc-co.com

- eGaN FETs for LiDAR Applications
- GaN Transistors for Efficient Power Conversion Textbook
- Demo Boards
- Reliability Reports
- Device Models
- Assembly Guides
- DC-DC Converter Handbook
- Wireless Power Handbook - Second Edition

EFFICIENT POWER CONVERSION

For More Information

Please contact info@epc-co.com

or your local sales representative

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