

eGaN® FETs and ICs for USB-C PD Quick Chargers

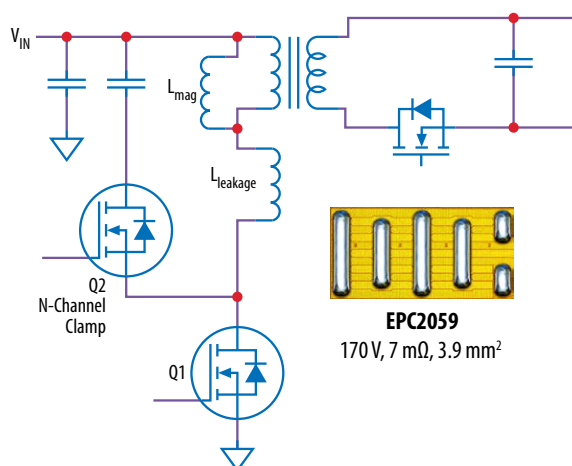


USB-C PD quick chargers and adaptors for smart phones and laptops require the highest power density for fast charging and small size.

eGaN FETs and ICs enable miniaturization, very high efficiency, and excellent thermal characteristics.



Flyback Topology using eGaN FETs



Why GaN for Secondary Side Synchronous Rectification

- Lower losses
- Smaller size
- More thermally efficient
- No reverse recovery ($Q_{RR} = 0$)
- Continuous Current Mode (CCM) benefits:
 - Easier cooling
 - Reduces rectifier, inductor coil, & capacitor losses
 - Reduces primary FET current, inductor coil, & capacitor losses
- Discontinuous Current Mode (DCM) benefits:
 - Size and gate loss reduction
 - Lower power loss at higher voltages
 - Higher frequency capability for higher density

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)	Half Bridge Development Board
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	1.8	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	3.5	1.5	0.5	13	0	8.2	74	BGA 1.5 x 1.5	EPC9092
EPC2045	Single	100	7	6	1.9	0.8	25	0	16	130	BGA 2.5 x 1.5	EPC9078
EPC2204	Single	100	6	5.7	1.8	0.8	25	0	29	125	LGA 2.5 x 1.5	EPC9097
EPC2032	Single	100	4	12	3	2	66	0	48	340	BGA 4.6 x 2.6	EPC9062
EPC2053	Single	100	3.8	11.4	4.1	1.5	45	0	48	246	BGA 3.5 x 2	EPC9093
EPC2218	Single	100	3.2	10.5	3.2	1.5	46	0	231	150	LGA 3.5 x 1.95	EPC90123
EPC2022	Single	100	3.2	13.2	3.4	2.4	71	0	90	390	LGA 6.05 x 2.3	EPC9035
EPC2033	Single	150	7	12	3.8	3.2	90	0	48	260	BGA 4.6 x 2.6	EPC9047
EPC2059	Single	170	9	5.9	1.7	0.9	37	0	25	102	LGA 2.8 x 1.4	EPC9098
EPC2019	Single	200	50	1.8	0.6	0.35	18	0	8.5	42	LGA 2.77 x 0.95	EPC9014
EPC2010C	Single	200	25	3.7	1.3	0.7	40	0	22	90	LGA 3.6 x 1.6	EPC9003C
EPC2207	Single	200	22	4.5	1.3	0.7	23	0	14	54	LGA 2.9 x 0.9	EPC90124
EPC2215	Single	200	8	13.6	3.3	2.1	69	0	32	162	LGA 4.6 x 1.6	EPC9099
EPC2034C	Single	200	8	11.4	3.8	2.1	95	0	48	213	BGA 4.6 x 2.6	EPC9048C

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

Design Support Materials @ www.epc-co.com



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GaN Transistors for Efficient Power Conversion

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Why GaN for USB Type-C™ PD Quick Chargers



For More Information

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