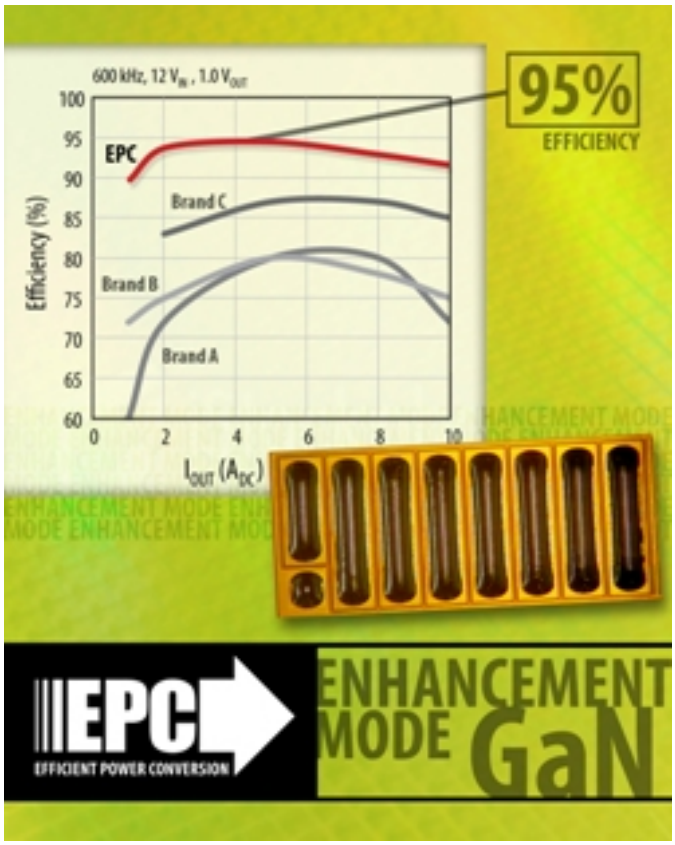
Enhancement-Mode Power Transistors Use GaN Technology



Efficient Power Conversion Corporation (EPC) today introduced a family of enhancement mode power transistors based on Gallium Nitride on Silicon technology.

Spanning a range of 40 Volts to 200 Volts, and 4 milliohms to 100 milliohms, these power transistors demonstrate significant performance advantages over state-of-the-art silicon-based power MOSFETs. EPC's technology produces devices that are smaller than similar resistance silicon devices and have many times superior switching performance. Applications that benefit from this newly available performance are DC-DC power supplies, point-of-load converters, class D audio amplifiers, notebook and netbook computers, LED drive circuits, telecom base stations, and cell phones, to name just a few.

EPC's enhancement mode (normally OFF) GaN technology was explicitly developed to replace power MOSFETs. The products are produced in a standard silicon CMOS foundry on 150mm (6 inch) silicon wafers. The use of this low-cost infrastructure has allowed EPC to price the initial product offerings aggressively in order to accelerate the conversion from silicon power MOSFETs.

"EPC's GaN on silicon power transistors represent the first major breakthrough in power conversion technology since the development of the commercial power

MOSFET. We have developed a very cost effective and reliable technology that is also very easy for anyone with power MOSFET experience to use in a way that will significantly boost their power management system performance" said Alex Lidow, EPC's co-founder and Chief Executive Officer.

Part Number	Package (mm)	Mode Ch	Vds	Vgs	Max. Rdson (mΩ) @5V	Qg @5V	Qgs Typ.	Qgd Typ.	Vth Typ.	Qrr	Id
Single											
EPC1014	LGA 1.7x1.1	EN	40	6	16.0	3.0	1.0	0.6	1.4	0	10
EPC1015	LGA 4.1x1.6	EN	40	6	4.0	11.6	3.8	2.2	1.4	0	33
EPC1009	LGA 1.7x1.1	EN	60	6	30.0	2.4	0.8	0.6	1.4	0	6
EPC1005	LGA 4.1x1.6	EN	60	6	7.0	10.0	3.0	2.5	1.4	0	25
EPC1007	LGA 1.7x1.1	EN	100	6	30.0	2.7	0.8	1.0	1.4	0	6
EPC1001	LGA 4.1x1.6	EN	100	6	7.0	10.5	3.0	3.3	1.4	0	25
EPC1013	LGA 1.7x0.9	EN	150	6	100.0	1.7	0.4	0.7	1.4	0	3
EPC1011	LGA 3.6x1.6	EN	150	6	25.0	6.7	1.5	2.8	1.4	0	12
EPC1012	LGA 1.7x0.9	EN	200	6	100.0	1.9	0.4	0.9	1.4	0	3
EPC1010	LGA 3.6x1.6	EN	200	6	25.0	7.5	1.5	3.5	1.4	0	12

Preliminary information subject to change

The product is priced between $0.80 and $5.00 in 1k quantities and is immediately available through Digi-Key at http://digikey.com/Suppliers/us/Efficient-Power-Conversion.page?lang=en [1]

Visit EPC's web site at www.epc-co.com [2].

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