

Market News

Ultrasmall gate-driver IC with TDI for unprecedented power density in low-voltage power conversion systems

Munich, Germany – April 8, 2020 – Each time a power MOSFET is being turned on or off in a SMPS, parasitic inductances produce ground-shifts that may cause false triggering of the gate-driver IC. Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY) adds a device to its cost-effective and compact-size [EiceDRIVER™ 1EDN TDI](#) (truly differential inputs) 1-channel gate-driver family to prevent such consequences. The new device (1EDN7550U) is housed in an ultrasmall (1.5 mm x 1.1 mm x 0.39 mm) 6-pin leadless TSNP package. Infineon's gate-driver ICs with TDIs are key to high-power-density and high-efficiency designs at a lower system cost compared to alternative solutions.

The TSNP package (1EDN7550U) occupies a PCB-area five times smaller compared to its SOT-23 family members. With a 3.3 V PWM input signal at application level, the EiceDRIVER 1EDN TDI can withstand static ground-shifts of up to ± 70 V and transient ground shifts of as much as ± 150 V_{peak}. The combination of tiny size and ground-shift robustness enables two of these gate-driver ICs to operate in a 48 V half-bridge configuration. Concurrently, designers have the freedom to place these gate-driver ICs in the PCB layout wherever they fit best which is key to enabling industry leading power density.

First customers, such as Flex Power Modules, welcome the new TSNP package: 'The 1EDN7550U driver offers significant board-area savings, which together with its versatility makes it a very attractive part', said Mikael Appelberg, Chief Technology Officer at Flex Power Modules.

The EiceDRIVER 1EDN7550U, in leadless TSNP package, enables 25 V and 40 V OptiMOS™ MOSFETs to operate in switched capacitor topologies at 1.2 MHz switching frequency. In such an application, a high power density of 3060 W/in³ and a 97.1 % peak efficiency (including auxiliary losses) have proven to be possible.

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Availability

The EiceDRIVER 1EDN TDI family is available in a standard SOT-23 6-pin package and from now onwards also in the new ultrasmall 6-pin TSNP package.

More information is available at www.infineon.com/TDI.



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