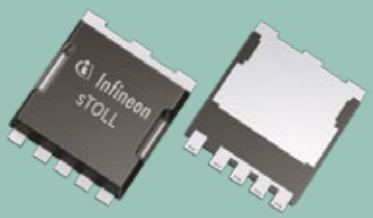


Product brief

sTOLL – new 7.0x8.0 mm² package

Perfect fit for the next-generation battery-powered motor drives and battery protection

Technology trends in future power systems equipment raise tough challenges due to ever-increasing power density, efficiency and thermal requirements. To support customer needs today and in the future, Infineon offers its sTOLL – a high-power leadless 7.0 x 8.0 mm² package (JEDEC MO-319A) with OptiMOS™ 6 40 V MOSFET technology optimized for high performance battery powered applications and battery protection.

The latest benchmark products IST006N04NM6 (40 V, 0.60 mΩ, 475 A, sTOLL) and IST007N04NM6 (40 V, 0.70 mΩ, 440 A, sTOLL) are optimized for very low $R_{DS(on)}$ and high current capability. Combined with Infineon's well-known quality for robust industry packages, sTOLL is the ideal solution for various battery applications including industry robotics, power and gardening tools. The very low $R_{DS(on)}$ and high I_D ratings, continuous and pulsed, enable increased battery run time and high power density. The product portfolio consists of normal-level gate threshold voltage (NL) providing higher immunity, even at high temperatures, against induced turn-on, providing customers sufficient design margin and flexibility.

Coupled with OptiMOS™ 6 MOSFET technology, the new sTOLL 7.0 x 8.0 mm² package family challenges the traditional SMD packages such as DPAK (TO252) and D²PAK (TO263). The sTOLL provides higher current capability in a smaller form factor without sacrificing thermal performance. Additional benefits of the sTOLL package are minimized package resistance and stray inductances, resulting in improved switching behavior (compared to traditional DPAK and D²PAK packages).

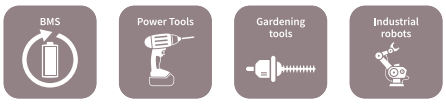
Currently available in 40 V, the sTOLL package family will be extended by Infineon to higher voltage classes like 60 V, 80 V and 100 V offering best-in-class products.

Key features

- High current capability in a small 7.0 x 8.0 mm² footprint
- Leadless package with low package resistance and minimized stray inductance
- Industry's lowest $R_{DS(on)}$ [0.6 mΩ and 0.7 mΩ] and FOM
- Grooved gate and source pins (Lead Tip Inspection feature)
- Latest OptiMOS™ 6 MOSFET technology

Key benefits

- Excellent thermal performance in compact form factor
- Reduced form factor compared to traditional DPAK/D²PAK
- Minimized conduction losses
- Lowest switching losses and less device paralleling
- Allows for simple automatic optical inspection



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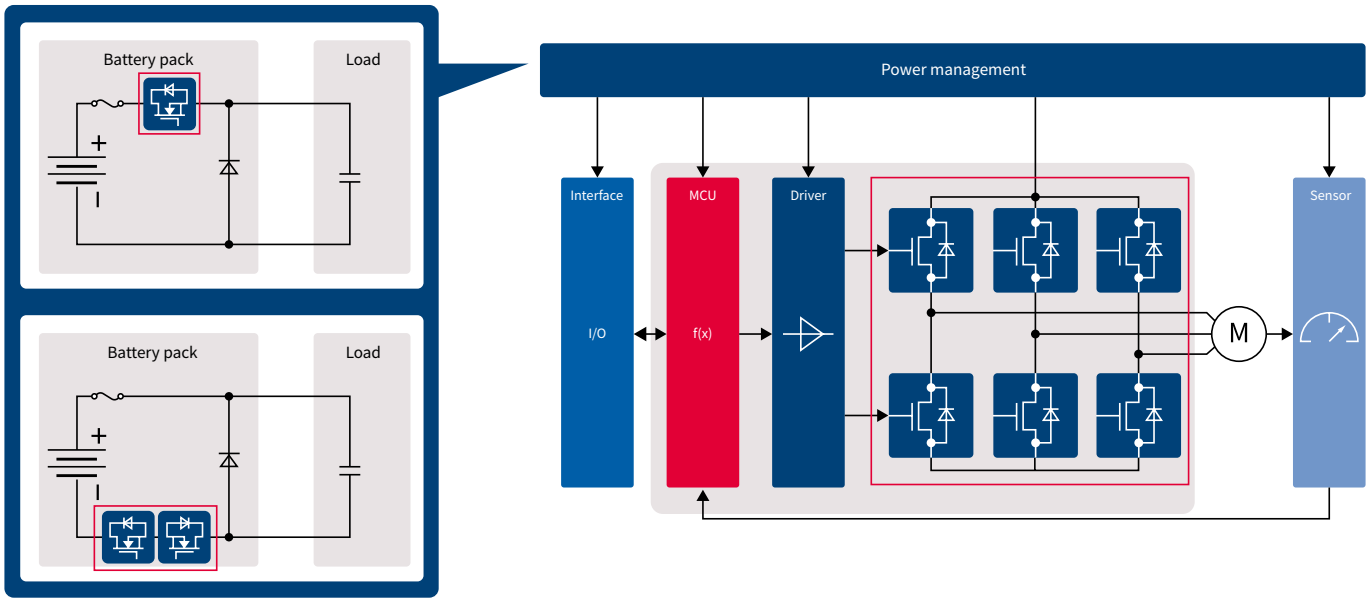
Block diagram:

Battery-powered motor drive – three-phase inverter plus battery protection



- 12-20 V battery-powered motor-drive applications
- Brushed motor-drive inverters
- BLDC motor-drive inverters
- Hard-switching topology
- Battery-protection switch

Product portfolio

Part number	Package	Voltage [V]	$R_{DS(on)}$ max [mΩ]	I_D [A]	OPN	Datasheet
IST006N04NM6	sTOLL	40 V	0.6 mΩ	475	IST006N04NM6AUMA1	Download here
IST007N04NM6	sTOLL	40 V	0.7 mΩ	440	IST007N04NM6AUMA1	Download here

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