



Application brief

Cordless power tools

Innovative. Reliable. Handy.

Infineon is bringing reliability and safety to any of your projects. Millions of households and businesses worldwide rely on power tools to complete daily tasks or creative projects around the home or for the job. Customers expect robust, reliable and portable power tools that are easy to use at affordable prices and with long battery life as key selection options. Cordless power tools must also be equipped with diagnostic and safety features to ensure confidence with high quality.

Today, the cordless power tool sector is the industry's fastest-growing segment, with projections indicating no end in sight. The reasons why are apparent: both professional and private users appreciate the safety and convenience of a lightweight, low-voltage power tool – without a cable and the need for an electrical outlet.

Thanks to technology development in cordless power tools, especially in motor drive and battery management, solutions reach new market segments and allow to design really powerful devices that are easily outperforming combustion-powered or corded ones. Infineon offering allows taking those designs to the next level, with best-in-class components and performance with no compromises.

Infineon's broad portfolio offers best-fit, innovative solutions for any power tools applications. We support each customer's need and reduce the project's overall costs. Also, our wireless-charging reference designs deliver high performance and are easily optimized in our DAVE™ development platform. Configure your BOM and exceed expectations with Infineon components in your cordless power tool designs.

Key features

- › Best-in-class MOSFETs e.g., OptiMOS™ and HEXFET™/ StrongIRFET™ extend battery lifetime and reduce chances for control failure
- › High efficiency and protection due to best-in-class EiceDRIVER™
- › Small form factor and compact design
- › Lowest $R_{DS(on)}$
- › Highest quality standards and a safety-certified development process
- › Proven track record and outstanding partner network for embedded security
- › OPTIGA™ Trust enables authentication of components connected to the system

Key benefits

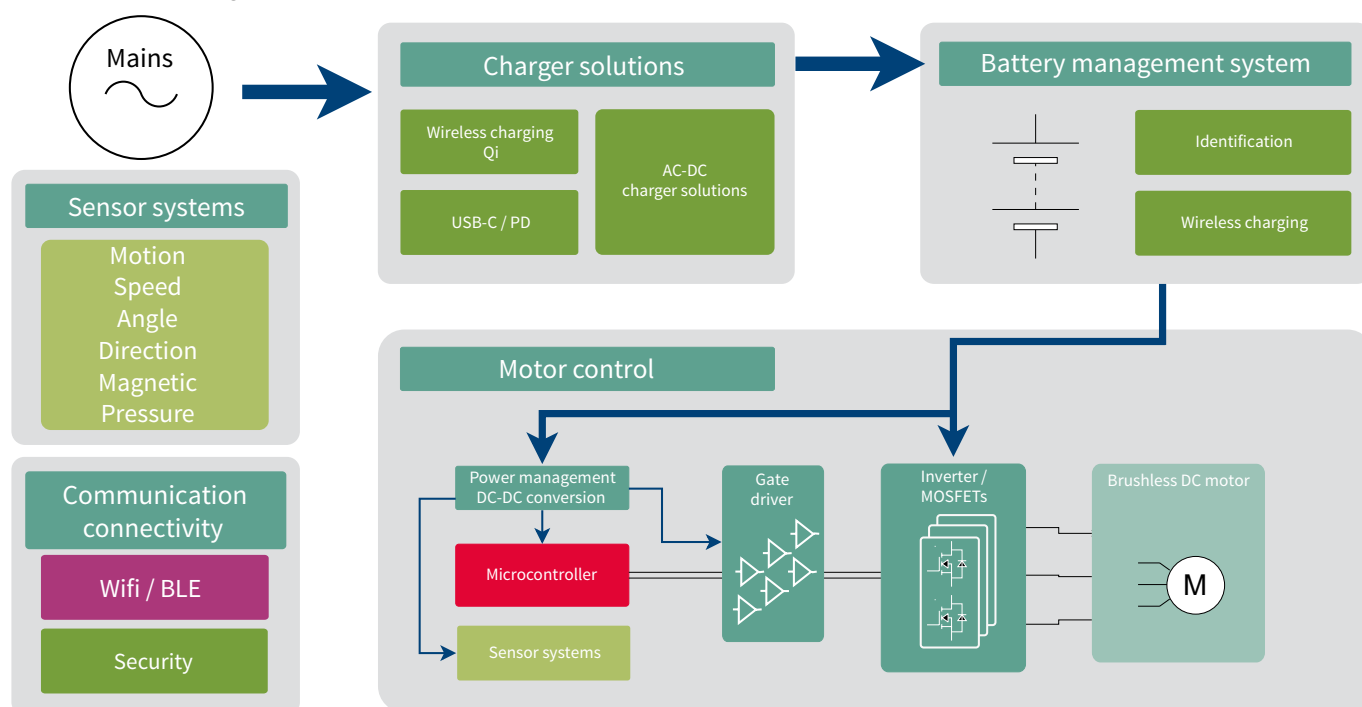
- › Convenient selection of the right fit products thanks to broad portfolio and complete solutions
- › Extended battery life-time and product life span
- › Productive capability
- › Overall system size and cost reduction
- › Security, quality, and safety
- › High reliability
- › Authentication
- › Short time to market
- › Evaluation and demonstration boards for fast prototyping



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Application block diagram example: cordless power tools



Infineon product offering		Home and professional applications	
Supply voltage		10.8-56 V	
OptiMOS™ and HEXFET™/ StrongIRFET2™ power MOSFETs	Voltage	20-150 V	
	Package	SuperSO8, PQFN 3x3, DirectFET™ S/M/L-Can, TOLL, TO-220, TO-247, DPAK, D2PAK, D2PAK 7-pin	
CoolMOS™ P7 SJ MOSFET*	Voltage	600-700 V	
	Voltage	650 V	
TRENCHSTOP™ 7 T7			
Gate driver ICs		EiceDRIVER™ 1EDN/2EDN, 1ED44173N01B, 6EDL04N02PR, 6ED003L02-F2, 6EDL04N06PT, 2EDL05N06PF, 2ED2304S06F, IRS2005S, IRS2007S, IRS2008S, IRS2301STRPBF, IRS21867STRPBF Integrated: IFX9201SG/BTN8982	
IPM-CIPOS™ Nano		IRSM005-800MH, IRSM005-301MH	
Authentication IC, security		OPTIGA™ Trust B	
XMC™ microcontrollers		XMC1300, XMC4400/XMC4500,	
iMotion™		iMOTION™ IRMCK099M	
ePower		Embedded power IC TLE987x family (BLDC)	
Microcontroller and driver supply: linear voltage and DC-DC switching regulators		IFX1763/IFX54441/IFX54211/IFX30081/IFX90121/IFX91041	
CAN transceivers		IFX1050, IFX1051	
XENSIV™ sensors		Hall switches (TLE496X*), Angle sensor (TLI5012B), 3D magnetic sensor (TLV493D)	
USB C		CCG7D Dual Port USB	

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