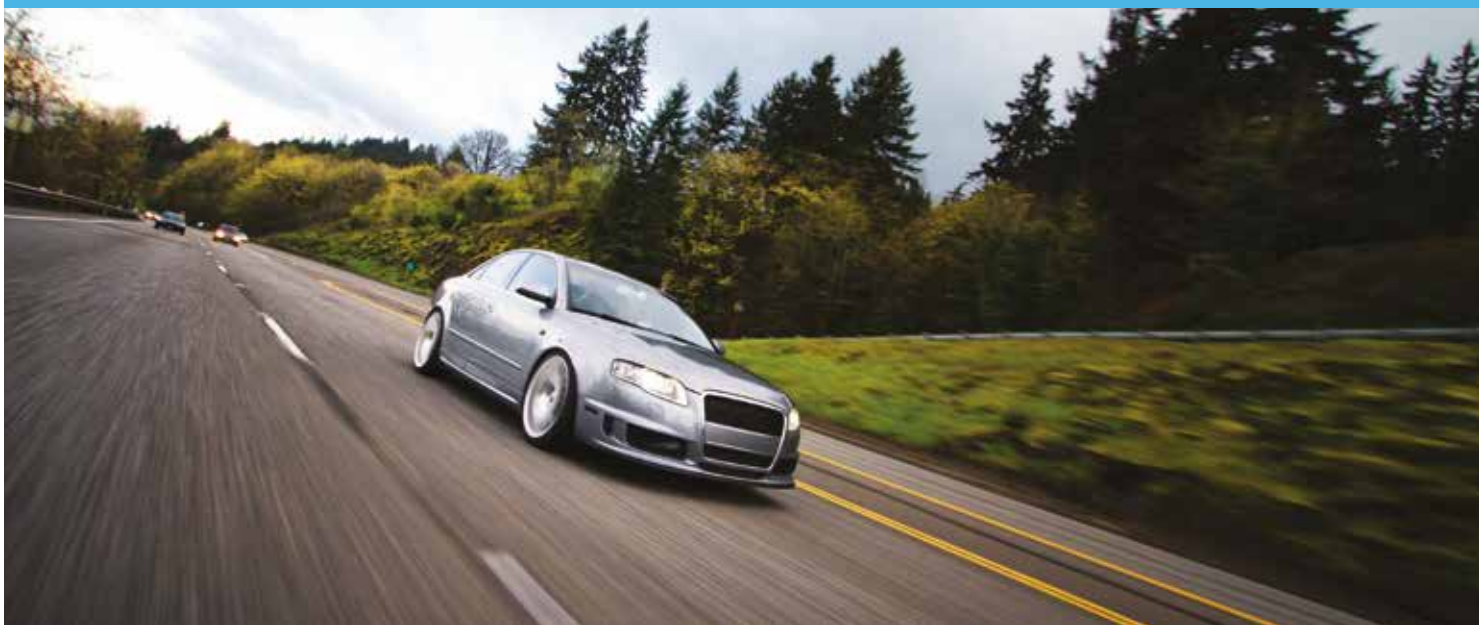
AUTOMOTIVE STripFET F8 DEVICES

For high-power-density solutions



ST's low-voltage MOSFETs reduce both on-resistance and switching loss while optimizing body-diode properties for very low noise during switching

The advanced STripFET F8 technology contributes to a lower output capacitance, helps reduce voltage spikes across the drain source and decrease energy losses during charge-discharge cycles.

Additionally, their body-drain diode feature leads to enhanced softness, leading to improvements that help reduce electromagnetic interference. This results in a smoother process for meeting EMC requirements as per relevant product standards, simplifying the compliance verification process for the end system.

KEY FEATURE & BENEFITS

- 40 and 100 V power MOSFET
- Optimized gate charge for faster commutation speeds
- Higher immunity to undesired spurious turn-on
- Lower $R_{DS(on)}$ targeting a higher system efficiency
- AEC-Q101 qualified

KEY APPLICATIONS

- Automotive motor control
- Heating systems
- Braking
- 48 V Mild hybrid systems

The STripFET family now includes the new STripFET F8 series, available in 40 V and 100 V variants. These new models are distinguished by their high efficiency and best-in-class (BiC) performance.
The innovative technology features an oxide-filled trench design, which enables very low conduction losses and a low gate charge, resulting in highly efficient switching performance.
The STripFET F8 series significantly reduces the $R_{DS(on)}$ x area, allowing for the development of both smaller packages that house compact dies and larger packages capable of handling high currents and power.
Most of our products based on the STripFET F8 are housed in the PowerFLAT 5x6 package, which is widely adopted due to its efficient heat and power management within a reduced footprint. In the automotive sector, we offer a version with a wettable flank that ensures high reliability and quality, which are fundamental requirements in this field.
For high-power and high-current applications, we are introducing the PowerLeaded 8x8 package. This package offers a viable alternative to the H²PAK, with a 60% reduction in footprint and thickness, while maintaining high thermal performance and reliability.
All of our automotive products far exceed the AEC-Q101 standards, ensuring coverage for particularly demanding and atypical mission profiles, and providing our customers' systems with an uncompromising level of quality and reliability.

Product selector

Product	BV_{Dss} (V)	Package	P (W)	I (A)	$R_{DS(on)}$ @ 4.5 V (mΩ)	$R_{DS(on)}$ @ 10 V (mΩ)	Q_g (nC)	Status
STL325N4LF8AG	40	PowerFLAT 5x6 WF	188	373	1.1	0.75	95	Full production
STL325N4F8AG		PowerFLAT 5x6 WF	188	350		0.85	80	Full production
STL305N4LF8AG		PowerFLAT 5x6 WF	167	304	1.5	1	70	Full production
STL305N4F8AG		PowerFLAT 5x6 WF	167	290		1.1	65	Full production
STL225N4F8AG		PowerFLAT 5x6 WF	127	203		1.7	42.5	In development
STL175N4LF8AG		PowerFLAT 5x6 WF	111	167	3.2	2.2	34.5	Full production
STL165N4F8AG		PowerFLAT 5x6 WF	111	154		2.6	28	Full production
STL145N4LF8AG		PowerFLAT 5x6 WF	94	141	3.75	2.6	24	In development
STK615N4F8AG		PowerLeaded 8x8	395	676		0.48	162	In development
STL165N10F8AG	100	PowerFLAT 5x6 WF	167	158		3.2	90	Full production
STL125N10F8AG		PowerFLAT 5x6 WF	150	125		4.6	56	Full production