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## Industry's First AEC-Q101-Qualified 12 V and 20 V MOSFETs in Dual Asymmetric Package for Automotive Synchronous Buck Applications

### Product Benefits:

- AEC-Q101-qualified for automotive applications
- Asymmetric dual MOSFETs are optimized for high-side and low-side synchronous buck applications
- Compact 5 mm by 6 mm PowerPAK® SO-8L dual asymmetric package occupies less board space and reduces parasitic inductance and power losses
- 12 V (SQJ202EP) and 20 V (SQJ200EP) drain-to-source voltages
- Extremely low-side maximum on-resistance down to 3.3 mΩ at  $V_{GS} = 10\text{ V}$
- High-temperature operation to +175 °C
- 100 % tested for gate resistance and avalanche
- RoHS-compliant and halogen-free



### Market Applications:

- Synchronous buck converters for automotive applications, including infotainment, telematics, navigation, and LED lighting

### The News:

To save space and power in high-efficiency synchronous buck converters for automotive applications, Vishay Intertechnology introduces the industry's first AEC-Q101-qualified 12 V and 20 V MOSFETs in a dual asymmetric package. The Vishay Siliconix SQJ202EP and SQJ200EP n-channel TrenchFET® devices each combine a high- and low-side MOSFET in the compact 5 mm by 6 mm PowerPAK SO-8L dual asymmetric package, with low-side maximum on-resistance down to 3.3 mΩ.

### The Perspective:

By co-packaging two MOSFETs in an asymmetric package — with a larger low-side MOSFET for lower on-resistance and smaller high-side MOSFET for faster switching — the 12 V SQJ202EP and 20 V SQJ200EP provide high-performance alternatives to standard dual devices, which restrict the optimum combination of MOSFETs for high-current, high-frequency buck designs. Compared to using discrete components, the devices occupy less board space and can facilitate more compact PCB layouts.



The devices offer high-temperature operation to +175 °C to provide the ruggedness and reliability required for automotive applications. The SQJ202EP is well suited for applications with bus voltages  $\leq 8$  V and offers extremely low maximum on-resistance down to 3.3 m $\Omega$  at  $V_{GS} = 10$  V for the Channel 2 low-side MOSFET. For applications with higher bus voltages, the 20 V SQJ200EP features a slightly higher maximum on-resistance of 3.7 m $\Omega$ .

## The Key Specifications:

Part number		SQJ202EP		SQJ200EP	
Channel		1	2	1	2
$V_{DS}$ (V)		12		20	
$R_{DS(ON)}$ ( $\Omega$ )	@ $V_{GS} = 10$ V	0.0065	0.0033	0.0088	0.0037
	Max. @ $V_{GS} = 4.5$ V	0.0093	0.0045	0.0124	0.0050
Qg (nC) Typ.	@ $V_{GS} = 10$ V	14.5	35.9	12	29
$I_D$ (A)		20	60	20	60

### Availability:

Samples and production quantities of the SQJ200EP and SQJ202EP are available now, with lead times of 12 weeks for large orders.

To access the product datasheets on the Vishay website, go to

<http://www.vishay.com/ppg?67774> (SQJ200EP)

<http://www.vishay.com/ppg?62926> (SQJ202EP)

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