



# New Product Announcement

DMWSH120H90SM4Q  
DMWSH120H28SM4Q

## Automotive-Compliant 1200V SiC MOSFETs Enhance Subsystem Efficiency

The DMWSH120H90SM4Q and DMWSH120H28SM4Q are automotive-compliant Silicon Carbide (SiC) MOSFETs. These N-channel MOSFETs are designed to meet the market's need for SiC solutions that enable better efficiency and higher power density in electric and hybrid-electric vehicle (EV/HEV) automotive subsystems.

The DMWSH120H90SM4Q and DMWSH120H28SM4Q both operate safely and reliably up to 1200V<sub>DS</sub> with a gate-source voltage ( $V_{GS}$ ) of +15/-4V, and have  $R_{DS(ON)}$  of 75m $\Omega$  (typical) and 20m $\Omega$  (typical) respectively.

The four-pin TO247 for the DMWSH120H28SM4Q has a  $R_{\theta JC}$  of 0.35°C/W that enables drain currents of up to 100A; it also features a Kelvin sense pin. When connected to the source pin, this sense pin allows for better control of the gate, optimizing device performance.

Both the DMWSH120H90SM4Q and DMWSH120H28SM4Q feature robust body diodes that deliver fast switching ( $t_{RR}$ ) and low reverse recovery charge  $Q_{RR}$ , minimizing switching losses at high frequencies.

*Automotive-compliant - AEC qualified, manufactured in IATF 16949 certified sites supporting PPAP documents.*

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### The DIODES Advantage

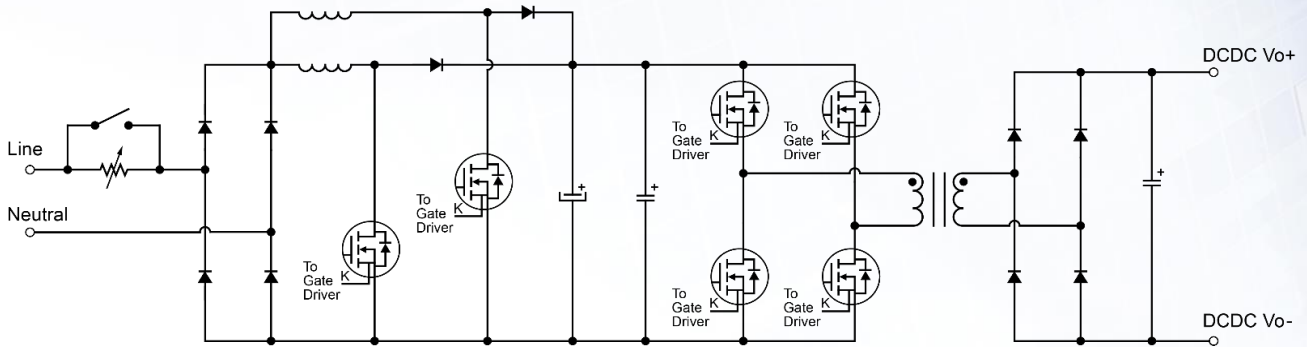
These automotive-compliant 1200V SiC MOSFETs enhance automotive subsystem efficiency.

- Low  $R_{DS(ON)}$  and low  $Q_g$**   
 Enables system designers to maximize efficiency while ensuring power dissipation is kept to a minimum
- Low  $R_{\theta JC}$**   
 0.35°C/W of  $R_{\theta JC}$  enables drain currents of up to 100A
- TO247-4 Package with Kelvin Sense Pin**  
 Kelvin pin can be connected to the source to optimize switching performance, enabling higher power densities
- Robust Body Diode with Fast  $t_{RR}$  and Low  $Q_{RR}$**   
 Minimizes switching losses
- Automotive Compliant**  
 Qualified to AECQ101, supported by a PPAP and manufactured in IATF 16949 approved facilities

### Applications

- EV high-power DC-DC converters
- EV charging systems
- Automotive motor drivers
- On-board chargers

### Typical Application Schematic



### Product Portfolio

Part Number	BV <sub>DSS</sub>	V <sub>GS</sub>	Continuous Drain Current (A)		R <sub>DS(on)</sub> @15V <sub>GS</sub> (Typ)	Q <sub>g</sub> @15V <sub>GS</sub> (Typ)	Package
	V	±V	@ TC=25°C	@ TC=100°C	mΩ	nC	
<a href="#">DMWSH120H90SM4Q</a>	1200	+15/-4	40	28.3	75	47.6	TO247-4
<a href="#">DMWSH120H28SM4Q</a>	1200	+15/-4	100	70.8	20	156.3	TO247-4

### Ordering Information

Orderable Part Number	Package	Packing	
		Quantity	Carrier
<a href="#">DMWSH120H90SM4Q</a>	TO247-4 (Type WH)	30 Pieces	Tubes
<a href="#">DMWSH120H28SM4Q</a>	TO247-4 (Type WH)	30 Pieces	Tubes