New Product Announcement

DMWSH120H90SCT7Q

TO263-7 Automotive-Compliant SiC 1200V MOSFETs Enhance Subsystem Efficiency

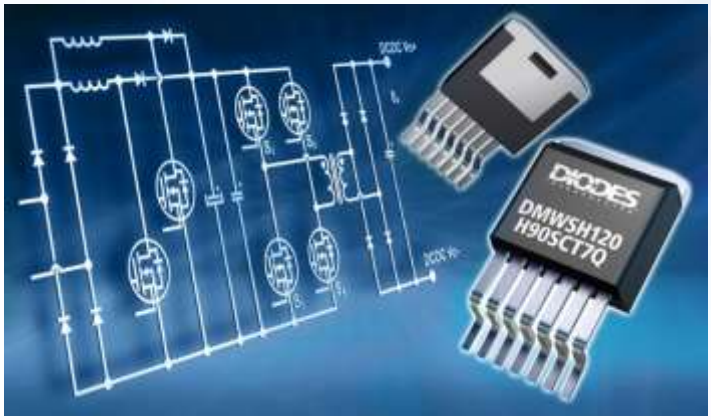
The DMWSH120H90SCT7Q is Diodes Incorporated's first automotive-compliant Silicon Carbide (SiC) MOSFET packaged in T0263-7.

This automotive-compliant MOSFET offers high power density and efficiency, enables bi-directional charging and significantly reduces system cost in DCDC and on-board charging (OBC) in electric and hybrid electric vehicle (EV/HEV) automotive subsystems.

The DMWSH120H90SCT7Q operates safely and reliably up to 1200V_{DS} with a gate-source voltage (V_{gs}) of +15/-4V and has $R_{DS(ON)}$ of 75mΩ (typical) and features a fast and robust body diodes that deliver fast switching (t_{RR}) and low reverse recovery charge $Q_{RR,}$ minimizing switching losses at high frequencies.

The 7 pin TO263 has a $R_{\theta JC}$ of 0.76^0/C that enables drain currents of up to 38A and also features a Kelvin sense pin. When connected to the source pin, this sense pin allows for better control of the gate allowing device performance to be optimized.

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



The DIODES Advantage

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

- **Low $R_{DS(ON)}$**
  The devices' low $R_{DS(ON)}$, coupled with a low Qg, enable system designers to maximize efficiency while ensuring power dissipation is kept to a minimum
- **Low R_{thJC}**
  0.76C/W of R_{thJC} enables drain currents of up to 38A
- **TO263-7 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 IATF16949 approved facilities

Applications

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

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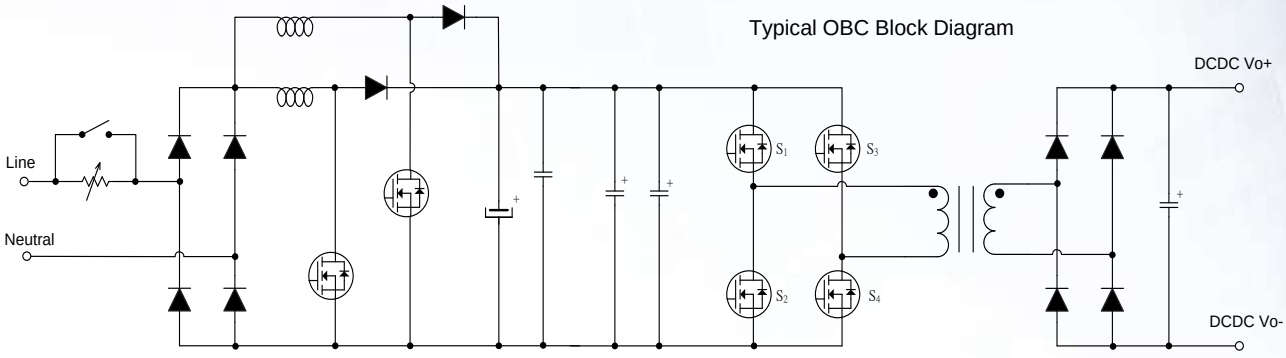
Typical Application Schematic



Product Portfolio

Part Number	BV_{DSS}	Vgs	Continuous Drain Current (A)	$R_{DS(on)}$ @15Vgs (Typ)	Q_g @15Vgs (Max)	Ciss @15Vgs (Typ)	Gfs (Typ)	Package
	V	±V	@ TC=25°C	mΩ	nC	pf	S	
DMWSH120H90SCT7Q	1200	+15/-4	38.2	90	54.6	1078	54.6	TO263-7

Ordering Information

Orderable Part Number	Package	Packing	
		Quantity	Carrier
DMWSH120H90SCT7Q	TO263-7	50 pieces	Tube
DMWSH120H90SCT7Q-13	TO263-7	800 pieces	Reel