

Automotive-grade SiC diodes with very low forward voltage drop



Automotive-grade SiC diodes boost the performance of power converters

The wide bandgap of our silicon-carbide (SiC) diodes enables the design of high-voltage Schottky diodes offering negligible reverse recovery at turn-off and minimal capacitive turn-off behavior independent of temperature. Our high-performance power Schottky rectifiers can handle up to 650 V with the lowest forward voltage drop (VF) on the market for optimal efficiency. ST is the FIRST supplier worldwide to offer 100% automotive-grade SiC diodes (AEC-Q101 qualified and PPAP capable).

KEY FEATURES

- 100% automotive-grade
- AEC-Q101 qualified
- PPAP capable
- Very low forward conduction losses
- Low switching losses
- Soft switching behavior
- High forward surge capability
- Contributes to safe energy
- Allows high switching frequency
- Reduced EMI
- High T_J capability $T_J \text{ max} = 175^\circ\text{C}$
- 650 V guaranteed @ -40°C

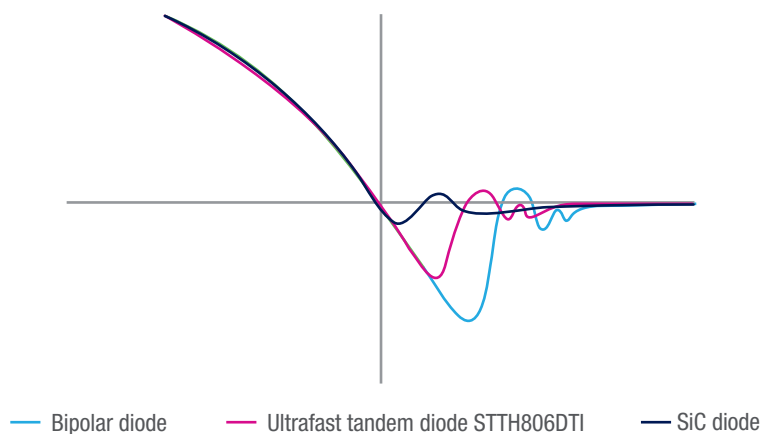
KEY BENEFITS

- High efficiency adds value to the power converter
- Reduces size and cost of the power converter
- Low EMC impact, simplifies certification and reduces time to market
- Natural high robustness ensuring very high reliability

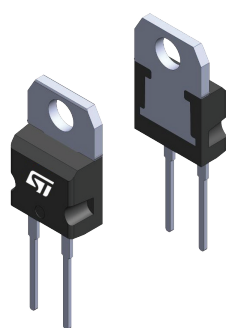


SiC DIODES REDUCE SWITCHING POWER LOSSES

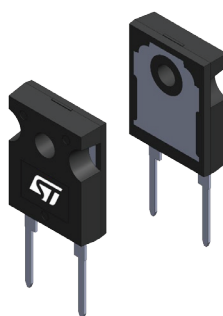
Reverse recovery comparison



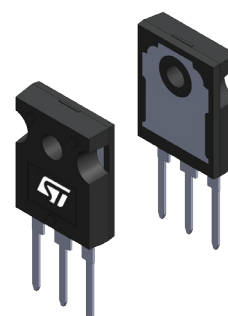
PACKAGES



TO-220AC



DO-247



TO-247

PRODUCT PORTFOLIO OFFER

3 New automotive grade SiC diodes in mass production

Part number	Current rating (A)	Voltage rating (V)	Packages
STPSC12065DY	12	650	TO-220AC
STPSC20065DY	20	650	TO-220AC
STPSC20065WY	20	650	DO-247
STPSC40065CWY	40	650	TO-247



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