

650 V SiC DIODES

for industrial applications



SiC diodes boost the performance of power converters

SiC diodes are high-performance power Schottky rectifiers that feature a silicon-carbide substrate. This wide bandgap material enables the design of 650V high-voltage Schottky diodes.

They present negligible reverse recovery at turn-off and minimal capacitive turn-off behavior which is independent of temperature.

The very low V_F series of 650 V Rectifiers offers the lowest diodes forward voltage drop for optimal efficiency.

KEY FEATURES

- Very low forward conduction losses
- Low switching losses
- Soft switching behavior
- High forward surge capability
- Reduced EMI
- High T_J capability $T_{J(MAX)} = 175\text{ }^\circ\text{C}$
- 650 V guaranteed from $-40\text{ }^\circ\text{C}$ to $+175\text{ }^\circ\text{C}$

KEY BENEFITS

- High efficiency adding value to the power converter
- Reducing size and cost of the power converter
- Low EMI impact, simplifying certification and reducing time to market
- Allow high switching frequency
- Natural high robustness ensuring very high reliability

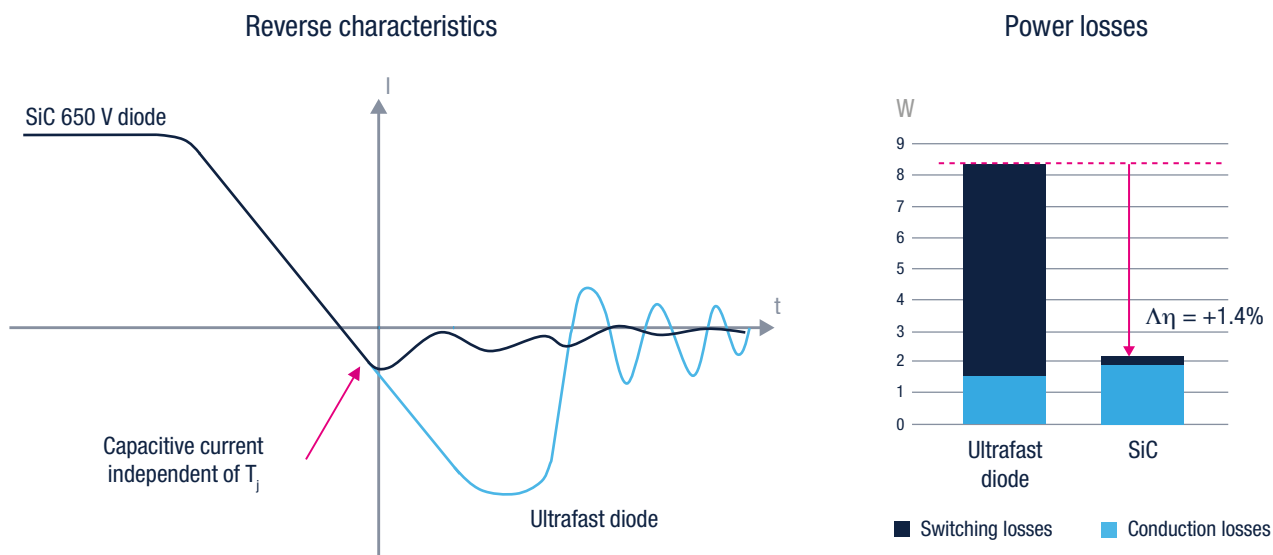
Improved efficiency

The very high efficiency behavior of SiC diodes coupled with ST's high level of quality ensures the best results for your designs and applications.

ST's SiC diodes take advantage of silicon carbide's superior physical characteristics over Si only, with 4 times better dynamic characteristics and 15% less forward voltage (V_F) versus the fastest 600 V silicon diode.

In hard-switching applications, SiC Schottky diodes show a significant power-loss reduction. Today, they are also widely used in the industry for AC/DC converters.

SiC diodes reduce switching power losses



Device summary

Part number	Current rating (A)	Voltage rating (V)	Packages
STPSC8065D	8	650	TO-220AC
STPSC10065D	10	650	TO-220AC, PowerFlat 8x8
STPSC12065D	12	650	TO-220AC, D2PAK
STPSC20065DI	20	650	TO-220I
STPSC20065W	20	650	DO-247, TO-247 LL, TO-220AC
STPSC40065CW	40 (2x20)	650	TO-247, TO-247 LL, TO-220AC

