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1200 V SiC DIODES

2 to 40 A in surface-mount and through-hole packages

These 1200 V silicon-carbide diodes increase efficiency in all systems thanks to their low forward voltage (V_F).

ST's new 1200 V SiC diodes, ranging from 2 up to 40 A, are available in 4 different packages. The combination of having the lowest forward voltage (V_F) with state-of-the-art forward surge current robustness enables designers to select a lower current rating diode while matching the expected converter's efficiency level, increasing the affordability of high performing systems. These diodes are ideal for use in high power applications such as solar converters, charging stations, OBC, power supplies, and motor drives.

KEY FEATURES & BENEFITS

- Best V_F on the market
- High robustness
- A complete range of devices from 2 A up to 40 A
- Unique D²PAK version on top of TO-220AC, TO-247, and DPAK HV
- Automotive-grade version AEC-Q101 qualified

KEY BENEFITS

- Negligible reverse recovery characteristics
- Increase efficiency in high-end systems through a drastic reduction of switching losses, combined with best V_F
- Best performance reproducibility thanks to low V_F variation between typical and maximum values
- Higher reliability thanks to a low leakage current

KEY APPLICATIONS

- Solar converters
- EV/HEV charging stations
- On-board battery chargers for electric and hybrid vehicles
- Telecom power supplies
- Motor drives
- High-power servers
- UPS

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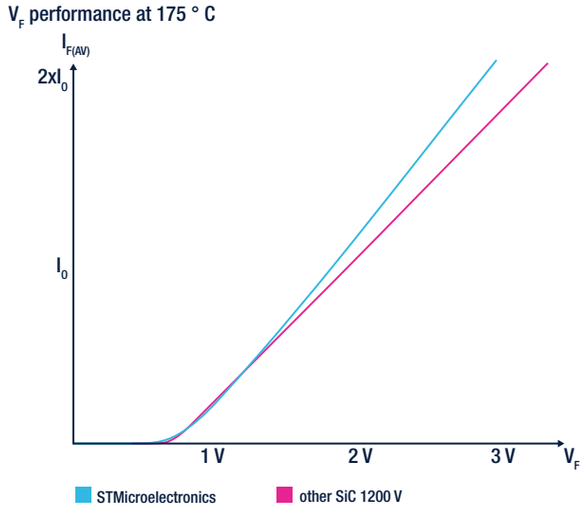
1200 V SiC DIODES 2 to 40 a in surface-mount and through-hole packages

ST's new 1200 V silicon-carbide (SiC) diodes are designed with an optimized trade-off between V_F and I_{FSM}.
With state-of-the-art robustness, the surge capability for a 10ms pulse is in the range of 7 times the diode's nominal current.
The diode's forward voltage drop (V_F) is typically 1.35 V at nominal current and room temperature, which is the best level available on the market.
Moreover, the variation from typical to maximum on this V_F parameter is 90%, which is again today the best reproducible V_F performance for 1200 V SiC diodes.
Thanks to these characteristics, our customers can achieve worry-free the best level of efficiency in their applications, and ensure an enhanced production yield during manufacturing stages.
For applications where solution cost matters, designers can also select a lower current rating of 1200 V SiC for their applications.
Indeed, the advantage of negligible switching losses will be preserved, and ST's best-inclass V_F/I_{FSM} trade-off can be considered to reach the minimum expected efficiency level.
Thus, ST's 1200 V SiC diodes increase the affordability of high performing systems.

Lower V_F efficiency for power converters



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Download on the App Store

To explore the complete SiC diodes portfolio, visit www.st.com or use our ST-Diode-Finder mobile app for Android and iOS.

Product portfolio offer

Part number	Current ratings $I_F(AV)$	V_F at I_F & 25°C typ / max	Surge capability I_{FSM} at 10ms	Packages
STPSC2H12(*)	2 A	1.35 V / 1.50 V	15 A	TO-220AC, DPAK HV
STPSC5H12	5 A	1.35 V / 1.50 V	35 A	TO-220AC, DPAK HV
STPSC6H12	6 A	1.55 V / 1.90 V	36 A	DPAK HV
STPSC10H12(*)	10 A	1.35 V / 1.50 V	71 A	TO-220AC, DPAK HV, D²PAK
STPSC15H12(*)	15 A	1.35 V / 1.50 V	105 A	TO-220AC
STPSC20H12(*)	20 A	1.35 V / 1.50 V	140 A	TO-220AC, DPAK HV, D²PAK
STPSC10H12C	2 x 5 A	1.35 V / 1.50 V	35 A	TO-247LL
STPSC20H12C	2 x 10 A	1.35 V / 1.50 V	71 A	TO-247LL
STPSC30H12C	2 x 15 A	1.35 V / 1.50 V	105 A	TO-247LL
STPS31H12C(*)	2 x 15 A	1.35 V / 1.50 V	105 A	TO-247LL
STPSC40H12C	2 x 20 A	1.35 V / 1.50 V	140 A	TO-247LL

Note *: AEC-Q101 versions available with "Y" suffix

Order code: FLSICDIO12000520

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