

SiC- STPSC, SCT, SCTH, SCTL, SCTW Технические характеристики

По вопросам продаж и поддержки обращайтесь:

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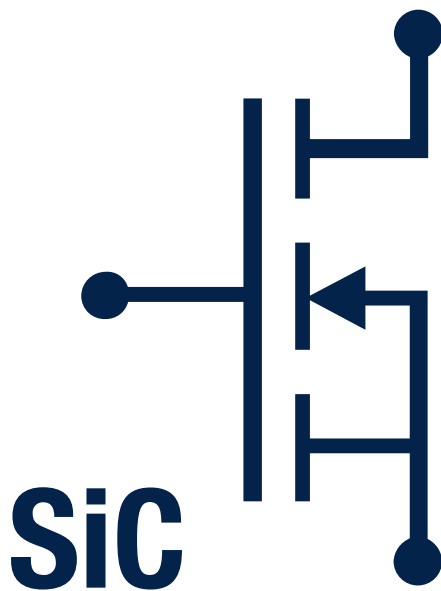
SiC Devices

Overview

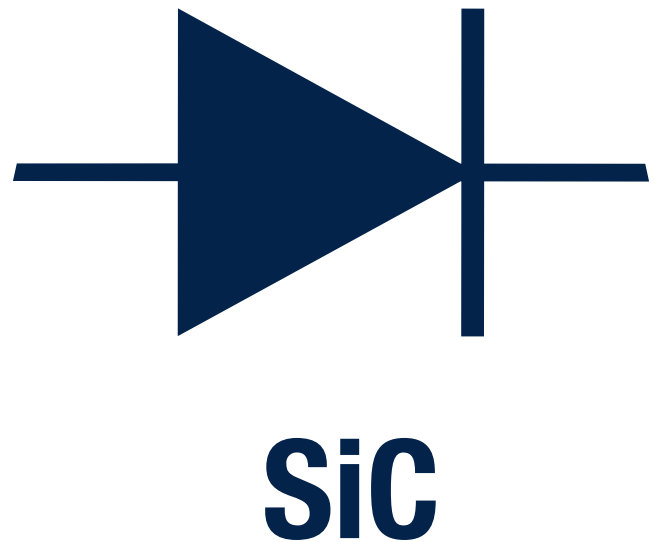
Silicon carbide - The latest breakthrough in high-voltage switching and rectification

ST's portfolio of silicon carbide (SiC) devices includes STPOWER SiC MOSFETs ranging from 650 to 2200 V with the industry's highest junction temperature rating of 200 °C for more efficient and simplified designs, and STPOWER SiC diodes ranging from 600 to 1200 V which feature negligible switching losses and 15% lower forward voltage (V_F) than standard silicon diodes.

STPOWER SiC MOSFET



STPOWER SiC Diodes



Main characteristics:

- Automotive-grade (AG) qualified devices
- Very high temperature handling capability (max. $T_j = 200\text{ °C}$)
- Very low switching losses (minimal variation versus temperature) allowing to work at very high switching frequency
- Low on-state resistance over the temperature range
- Simple to drive
- Very fast and robust intrinsic body diode proved

Main characteristics:

- Very low forward conduction losses for increased efficiency
- Low switching losses for reduced size and cost of the power converter
- Soft switching behavior (low EMC impact), simplifying certification and speeding time-to market
- High forward surge capability for increased robustness and reliability
- High power integration (dual diodes) for reduced PCB form factor
- High-temperature capability with $T_j \text{ max} = 175\text{ °C}$
- AEC-Q101-qualified and PPAP-capable automotive-grade SiC diodes

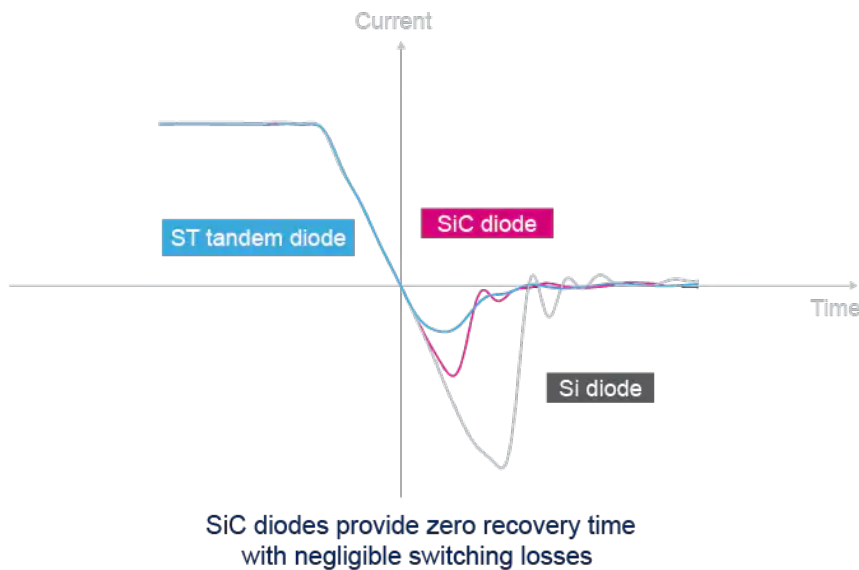
SiC Diodes

Overview

ST's silicon carbide diodes range from 600 to 1200 V – as single and dual diodes – and feature unbeatable reverse recovery characteristics and improved V_F . Available in a wide variety of packages, from D²PAK to TO-247 and the insulated TO-220AB/AC, they offer great flexibility to designers looking for efficiency, robustness and fast time-to-market.

ST's SiC Schottky diodes show a significant power-loss reduction and are commonly used in hard-switching applications such as high-end-server and telecom power supplies, while also intended for solar inverters, motor drives and uninterruptible power supplies (UPS).

ST's automotive-grade 650 and 1200 V SiC diodes – AEC-Q101-qualified and PPAP capable – feature the lowest forward voltage drop (V_F) on the market, for optimal efficiency in electric vehicle (EV) applications.



Main characteristics:

- High efficiency of the power converter (thanks to low forward conduction and switching losses)
- High power integration with dual diodes for reduced PCB form factor
- Significant reduction of power converter size and cost
- Low EMC impact, for simplified certification and reduced time-to-market
- Natural high robustness ensuring very high reliability

SIC Devices/SIC Diodes

Part Number	General Description	Package	Number of Diodes spec	Repetitive Peak Reverse Voltage (V) max	Grade	Average Rectified Current (A) max	V _r (V) max	VF measure condition (A) (@ I _r) spec	Reverse Current (mA) max	Total capacitive charge (nC)	Non-Repet Peak Forward Surge Current (A) max	Junction Temperature (°C) max
STPSC10065	650 V power Schottky silicon carbide diode	H2PAK-2,TO-220AC	1	650	Industrial	10	1.45	10	0.13	34	48	175
STPSC10065-Y	Automotive 650 V, 10 A SIC Power Schottky Diode	D2PAK,TO-220AC	1	650	Automotive	10	1.45	10	0.13	34	48	175
STPSC10065DLF	650 V 10 A power Schottky silicon carbide diode	POWER FLAT MLPD 8X8 4L MIXPLANT	1	650	Industrial	10	1.45	10	0.13	-	48	175
STPSC10H065	650 V, 10 A High Surge Silicon Carbide Power Schottky Diode	D2PAK,DPAK,TO-220AC,TO-220AC Ins	1	650	Industrial	10	1.75	10	0.1	28.5	90	175
STPSC10H065-Y	Automotive 650V, 10 A Silicon Carbide diode	D2PAK,TO-220AC	1	650	Automotive	10	1.75	10	0.1	28.5	90	175
STPSC10H065DLF	650 V 10 A power Schottky silicon carbide diode	POWER FLAT MLPD 8X8 4L MIXPLANT	1	650	Industrial	10	1.75	10	0.1	28.5	90	175
STPSC10H12	1200 V, 10 A High Surge Silicon Carbide Power Schottky Diode	D2PAK,DO247 LONG LEADS,TO-220AC	1	1200	Industrial	10	1.5	10	0.06	57	71	175
STPSC10H12-Y	Automotive 1200 V, 10 A Silicon Carbide Power Schottky Diode	D2PAK,TO-220AC	1	1200	Automotive	10	1.5	10	0.06	57	71	175
STPSC10H12C	1200 V, 10 A dual High Surge Silicon Carbide Power Schottky Diode	TO-247 long leads	2	1200	Industrial	10	1.5	5	0.03	57	210	175
STPSC10TH13TI	2 x 650V tandem, 10 A High Surge Silicon Carbide Power Schottky Diode	TO-220AB Ins	2	650	Industrial	10	1.75	10	0.1	28.5	90	175
STPSC12065	650 V power Schottky silicon carbide diode	D2PAK,H2PAK-2,TO-220AC	1	650	Industrial	12	1.45	12	0.15	36	50	175
STPSC12065-Y	Automotive 650 V, TO-220 D2PAK SIC Power Schottky Diode	D2PAK,D2PAK HV,TO-220AC	1	650	Automotive,Industrial	12	1.45	12	0.15	36	50	175
STPSC12C065-Y	Automotive 650 V, 12 A SIC Power Schottky Diode	TO-220AC	1	650	Automotive	12	1.75	12	0.12	29.3	470	175
STPSC12H065	650 V, 12 A High Surge Silicon Carbide Power Schottky Diode	TO-220AC	1	650	Industrial	12	1.75	12	0.12	36	100	175
STPSC15H12	1200 V, 15 A High Surge Silicon Carbide Power Schottky Diode	DO247 LONG LEADS,TO-220AC	1	1200	Industrial	15	1.5	15	0.09	94	105	175
STPSC20065	650 V power Schottky silicon carbide diode	DO-247,TO-220AC,TO-220AC Ins	1	650	Industrial	20	1.45	20	0.3	62	90	175
STPSC20065-Y	Automotive 650 V, 20 A SIC Power Schottky Diode	D2PAK,DO-247,TO-220AC	1	650	Automotive	20	1.45	20	0.3	62	90	175
STPSC20H065C	650 V, 20 A dual High Surge Silicon Carbide Power Schottky Diode	TO-220AB,TO-247	2	650	Industrial	20	1.75	10	0.1	28.5	90	175
STPSC20H065C-Y	Automotive 650 V, 20 A High Surge Silicon Carbide Power Schottky Diode	TO-220AB,TO-247	2	650	Automotive	20	1.75	10	0.1	28.5	90	175
STPSC20H065CWLY	Automotive 650V, 20A High Surge Silicon Carbide Power Schottky Diode	TO-247 long leads	2	650	Automotive	10	1.75	10	0.1	28.5	90	175
STPSC20H12	1200 V, 20 A High surge Silicon Carbide Power Schottky Diode	D2PAK,DO247 LONG LEADS,TO-220AC	1	1200	Industrial	20	1.5	20	0.12	129	140	175
STPSC20H12-Y	Automotive 1200 V, 20 A Silicon Carbide Diode	D2PAK,D2PAK HV,TO-220AC	1	1200	Automotive	20	1.5	20	0.12	129	140	175
STPSC20H12C	1200 V, 20 A High surge Silicon Carbide Power Schottky Diode	TO-247 long leads	2	1200	Industrial	20	1.5	10	0.06	57	420	175
STPSC2H12	1200 V power Schottky silicon carbide diode	TO-220AC	1	1200	Industrial	2	1.5	2	0.012	15.6	15	175
STPSC30H12C	1200 V power Schottky silicon carbide diode	TO-247 long leads	2	1200	Industrial	30	1.5	15	0.09	94	630	175
STPSC40065C	650 V power Schottky silicon-carbide diode	TO-247	2	650	Industrial	40	1.45	20	0.3	62	90	175

STPSC40065C-Y	Automotive 650 V, 40 A dual SiC Power Schottky Diode	TO-247	2	650	Automotive	40	1.45	20	0.3	62	90	175
STPSC40H12C	1200 V, 40 A High Surge Silicon Carbide Power Schottky Diode	TO-247 long leads	2	1200	Industrial	40	1.5	20	0.12	129	140	175
STPSC4H065	650 V, 4 A High Surge Silicon Carbide Power Schottky Diode	DPAK,TO-220AC,TO-220AC Ins	1	650	Industrial	4	1.75	4	0.04	12.5	38	175
STPSC4H065DLF	4 A, 650 V SiC Power Schottky Diode	POWER FLAT MLPD 8X8 4L MIXPLANT	1	650	Industrial	4	1.55	4	0.04	14.3	38	175
STPSC5H12	1200 V, 5 A High Surge Silicon Carbide Power Schottky Diode	TO-220AC	1	1200	Industrial	5	1.5	5	0.03	36	35	175
STPSC6C065-Y	Automotive 650 V, 6 A SiC Power Schottky Diode	TO-220AC	1	650	Automotive	6	1.75	6	0.06	15.2	375	175
STPSC6H065	650 V, 6 A High Surge Silicon Carbide Power Schottky Diode	D2PAK,DPAK,TO-220AC,TO-220AC Ins	1	650	Industrial	6	1.75	6	0.06	18	60	175
STPSC6H065DLF	6 A, 650 V SiC Power Schottky Diode	POWER FLAT MLPD 8X8 4L MIXPLANT	1	650	Industrial	6	1.55	6	0.06	19.9	58	175
STPSC6TH13TI	2 x 650V tandem, 6 A High Surge Silicon Carbide Power Schottky Diode	TO-220AB Ins	2	650	Industrial	6	1.75	6	0.06	18	60	175
STPSC8065	650 V power Schottky silicon carbide diode	TO-220AC	1	650	Industrial	8	1.45	8	0.105	28	46	175
STPSC8H065	650 V, 8 A High surge Silicon Carbide Power Schottky Diode	D2PAK,DPAK,TO-220AC,TO-220AC Ins	1	650	Industrial	8	1.75	8	0.08	23.5	75	175
STPSC8H065DLF	8 A 650 V SiC Power Schottky Diode	POWER FLAT MLPD 8X8 4L MIXPLANT	1	650	Industrial	8	1.55	8	0.08	26	75	175
STPSC8TH13TI	2 x 650V tandem, 8 A High Surge Silicon Carbide Power Schottky Diode	TO-220AB Ins	2	650	Industrial	8	1.75	8	0.08	23.5	75	175
STPSC12H065-Y	Automotive 650 V, 12 A High Surge Silicon Carbide Power Schottky Diode	TO-220AC	1	650	Automotive	12	1.75	12	0.12	36	100	175
STPSC12H065C	650 V, 12 A dual High Surge Silicon Carbide Power Schottky Diode	TO-220AB	2	650	Industrial	12	1.75	6	0.06	18	60	175
STPSC15H12-Y	Automotive 1200 V, 15 A Silicon Carbide Diode	TO-220AC	1	1200	Automotive	15	1.5	15	0.09	94	105	175
STPSC16H065C	650 V power Schottky silicon carbide diode	TO-220AB	2	650	Industrial	16	1.75	8	0.08	23.5	75	175
STPSC2006CW	600 V power Schottky silicon-carbide diode	TO-247	2	600	Industrial	20	1.7	10	0.15	12	40	175
STPSC8065-Y	Automotive 650 V, 8 A SiC Power schottky Diode	TO-220AC	1	650	Automotive	8	1.45	8	0.105	28	46	175
STPSC8H065C	650 V, 8 A dual High Surge Silicon Carbide Power Schottky Diode	TO-220AB	2	650	Industrial	8	1.75	4	0.04	12.5	38	175

SiC MOSFETs

Overview

Create more efficient and compact systems than ever with STPOWER SiC MOSFETs

Bring the advantages of innovative wide bandgap materials (WBG) to your next design thanks to SiC MOSFETs. With an extended voltage range, from 650 to 2200 V, ST's silicon carbide MOSFETs offer one of the most advanced technology platforms featuring excellent switching performance combined with very low on-state resistance per area.

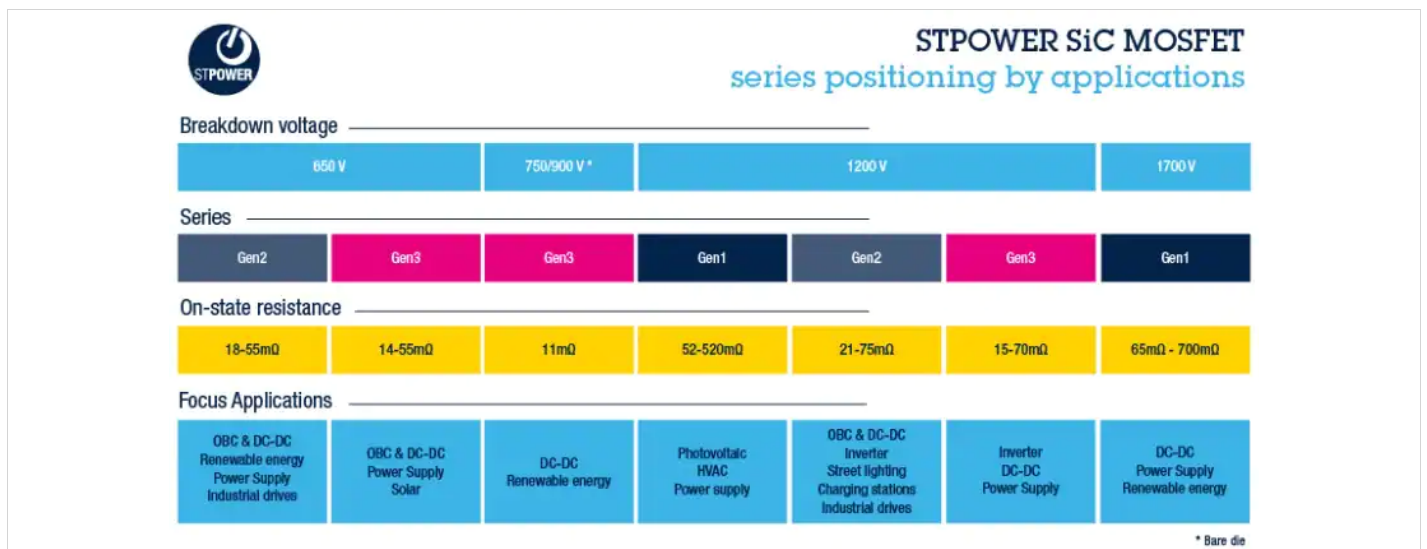
Main features of our SiC MOSFETs include:

- Automotive-grade (AG) qualified devices
- Very high temperature handling capability (max. $T_J = 200\text{ }^\circ\text{C}$)
- Very high switching frequency operation and very low switching losses
- Low on-state resistance
- Gate drive compatible with existing ICs
- Very fast and robust intrinsic body diode

Our SiC MOSFET portfolio includes state-of-the-art packages (HiP247, H2PAK-7, TO-247 long leads, STPAK and HU3PAK) specifically designed to meet the stringent requirements of automotive and industrial applications.



In addition to the latest packaging technologies, our SiC MOSFETs, including G3 devices, are available as bare die. Compliant with the most stringent automotive requirements including Wafer-Level Burn-In (WLBI) and Known Good Die (KGD) processes, bare die are available as reconstructed wafers or in tape & reel packaging.



SIC Devices/SIC MOSFETs

Part Number	Grade	Package	VDSS (V) nom	R _{DS(on)} (mΩ) max	Drain Current (Dc) (A) max	P _{TOT} (W) max	Q _g (nC) typ
SCT011H75G3AG	Automotive	H2PAK-7	750	15	110	652	144
SCT012H90G3AG	Automotive	H2PAK-7	900	15.8	110	625	138
SCT012W90G3AG	Automotive	HIP247	900	15.8	110	625	138
SCT015W120G3-4AG	Automotive	HiP247-4	1200	17.5	129	673	167
SCT018H65G3-7	Industrial	H2PAK-7	650	27	55	385	79.4
SCT018H65G3AG	Automotive	H2PAK-7	650	27	55	385	79.4
SCT020H120G3AG	Automotive	H2PAK-7	1200	28	100	281	121
SCT020W120G3-4AG	Automotive	HiP247-4	1200	28	100	547	121
SCT025H120G3AG	Automotive	H2PAK-7	1200	37	55	375	73
SCT025W120G3-4AG	Automotive	HiP247-4	1200	37	56	388	73
SCT027H65G3AG	Automotive	H2PAK-7	650	39.3	60	300	48.6
SCT027W65G3-4AG	Automotive	HiP247-4	650	39.3	60	313	51
SCT040H120G3-7	Industrial	H2PAK-7	1200	40	40	300	54
SCT040H120G3AG	Automotive	H2PAK-7	1200	40	40	300	54
SCT040H65G3-7	Industrial	H2PAK-7	650	55	30	221	39.5
SCT040H65G3AG	Automotive	H2PAK-7	650	55	30	221	39.5
SCT040H65G3SAG	Automotive	H2PAK-7 straight leads	650	55	30	221	39.5
SCT040HU65G3AG	Automotive	HU3PAK	650	55	30	221	39.5
SCT040W120G3	Industrial	HIP247	1200	40	40	312	56
SCT040W120G3-4	Industrial	HiP247-4	1200	54	40	312	56
SCT040W120G3-4AG	Automotive	HiP247-4	1200	54	40	312	56
SCT040W120G3AG	Automotive	HIP247	1200	40	40	312	56
SCT055H65G3AG	Automotive	H2PAK-7	650	72	30	185	29
SCT055HU65G3AG	Automotive	HU3PAK	650	72	30	185	29
SCT055W65G3-4AG	Automotive	HiP247-4	650	72	30	210	32
SCT070H120G3-7	Industrial	H2PAK-7	1200	87	30	223	37
SCT070H120G3AG	Automotive	H2PAK-7	1200	87	30	223	37
SCT070HU120G3AG	Automotive	HU3PAK	1200	87	30	223	37
SCT070W120G3-4	Industrial	HiP247-4	1200	87	30	236	41
SCT070W120G3-4AG	Automotive	HiP247-4	1200	87	30	236	41
SCT070W120G3AG	Automotive	HIP247	1200	87	30	236	41
SCT1000N170	Industrial	HIP247	1700	1300	7	96	13.3
SCT1000N170AG	Automotive	HIP247	1700	1300	7	96	13.3
SCT10N120	Industrial	HIP247	1200	690	12	150	22
SCT10N120AG	Automotive	HIP247	1200	690	12	150	22
SCT20N120	Industrial	HIP247	1200	239	20	175	45
SCT20N120AG	Automotive	HIP247	1200	239	20	153	45
SCT20N120H	Industrial	H2PAK-2	1200	239	20	175	45
SCT20N170	Industrial	HIP247	1700	86	43	313	101
SCT20N170AG	Automotive	HIP247	1700	86	43	313	101
SCT30N120	Industrial	HIP247	1200	100	45	270	105
SCT30N120H	Industrial	H2PAK-2	1200	100	45	270	105
SCT50N120	Industrial	HIP247	1200	69	65	318	122
SCTH100N120G2-AG	Automotive	H2PAK-7	1200	39	75	484	163
SCTH100N65G2-7AG	Automotive	H2PAK-7	650	26	95	360	162

SCTH35N65G2V-7	Industrial	H2PAK-7	650	67	45	208	73
SCTH35N65G2V-7AG	Automotive	H2PAK-7	650	67	45	208	73
SCTH40N120G2V-7	Industrial	H2PAK-7	1200	100	36	238	61
SCTH40N120G2V7AG	Automotive	H2PAK-7	1200	105	33	250	63
SCTH60N120G2-7	Industrial	H2PAK-7	1200	52	60	388	94
SCTH70N120G2V-7	Industrial	H2PAK-7	1200	30	90	469	150
SCTH90N65G2V-7	Industrial	H2PAK-7	650	24	116	484	157
SCTHS200N120G3AG	Automotive	STPAK	1200	13	170	875	253
SCTHS250N65G3	Automotive,Industrial	STPAK	650	10	237	795	208
SCTHS300N75G3AG	Automotive	STPAK	750	8.8	300	972	303
SCTL35N65G2V	Industrial	PowerFLAT 8x8	650	67	40	417	73
SCTL90N65G2V	Industrial	PowerFLAT 8x8	650	24	40	935	157
SCTW100N120G2AG	Automotive	HIP247	1200	39	75	565	163
SCTW100N65G2AG	Automotive	HIP247	650	26	100	420	162
SCTW35N65G2V	Industrial	HIP247	650	67	45	240	73
SCTW35N65G2VAG	Automotive	HIP247	650	67	45	240	73
SCTW40N120G2V	Industrial	HIP247	1200	100	36	278	61
SCTW40N120G2VAG	Automotive	HIP247	1200	105	33	290	63
SCTW60N120G2	Industrial	HIP247	1200	52	60	388	94
SCTW60N120G2AG	Automotive	HIP247	1200	58	52	388	101
SCTW70N120G2V	Industrial	HIP247	1200	30	91	547	150
SCTW90N65G2V	Industrial	HIP247	650	24	119	565	157
SCTWA20N120	Industrial	HIP247 long	1200	239	20	175	45
SCTWA30N120	Industrial	HIP247 long	1200	100	45	270	105
SCTWA35N65G2V	Industrial	HIP247 long	650	67	45	240	73
SCTWA35N65G2V-4	Industrial	HiP247-4	650	67	45	240	73
SCTWA40N120G2AG	Automotive	HIP247 long	1200	105	33	290	63
SCTWA40N120G2V	Industrial	HIP247 long	1200	100	36	278	61
SCTWA40N120G2V-4	Industrial	HiP247-4	1200	100	36	278	61
SCTWA40N12G24AG	Automotive	HiP247-4	1200	105	33	290	63
SCTWA50N120	Industrial	HIP247 long	1200	69	65	318	122
SCTWA60N120G2-4	Industrial	HiP247-4	1200	52	60	388	94
SCTWA60N120G2AG	Automotive	HIP247 long	1200	58	52	388	101
SCTWA60N12G2-4AG	Automotive	HiP247-4	1200	58	52	388	101
SCTWA70N120G2V	Industrial	HIP247 long	1200	30	91	547	150
SCTWA70N120G2V-4	Industrial	HiP247-4	1200	30	91	547	150
SCTWA90N65G2V	Industrial	HIP247 long	650	24	119	565	157
SCTWA90N65G2V-4	Industrial	HiP247-4	650	24	119	565	157

По вопросам продаж и поддержки обращайтесь:

Алматы (7273)495-231	Калининград (4012)72-03-81	Омск (3812)21-46-40	Сыктывкар (8212)25-95-17
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Барнаул (3852)73-04-60	Коломна (4966)23-41-49	Петрозаводск (8142)55-98-37	Томск (3822)98-41-53
Белгород (4722)40-23-64	Кострома (4942)77-07-48	Псков (8112)59-10-37	Тула (4872)33-79-87
Благовещенск (4162)22-76-07	Краснодар (861)203-40-90	Пермь (342)205-81-47	Тюмень (3452)66-21-18
Брянск (4832)59-03-52	Красноярск (391)204-63-61	Ростов-на-Дону (863)308-18-15	Ульяновск (8422)24-23-59
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Владикавказ (8672)28-90-48	Курган (3522)50-90-47	Самара (846)206-03-16	Уфа (347)229-48-12
Владимир (4922)49-43-18	Липецк (4742)52-20-81	Саранск (8342)22-96-24	Хабаровск (4212)92-98-04
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