

## SiC Schottky Diode

### Features:

- ✦ Positive temperature coefficient, great for parallel connection.
- ✦ Switching is not affected by temperature.
- ✦ Max operational temperature: 175°C.
- ✦ 0 Reverse recovery current.
- ✦ 0 Forward recovery voltage.

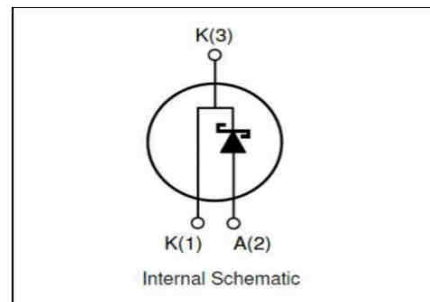
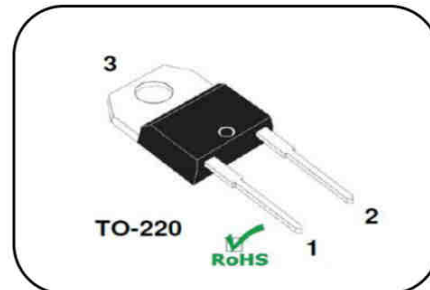
### Benefits:

- ✦ Unipolar device.
- ✦ Greatly reduce switching loss.
- ✦ No thermal breakdown in parallel devices.
- ✦ Reduce system dependence on heat sink.

### Applications:

- ✦ Switching Mode Power Supply (SMPS)
- ✦ Power Factor Correction (PFC)
- ✦ Motor drive, PV inverter, Uninterruptible power supply.
- ✦ Wind driven electricity generator, Train hauling system, Electric automobiles.

$V_{RRM}$	1200	V
$I_F, T_c \leq 135^\circ\text{C}$	12.5	A
$Q_c$	57	nC



### Maximum Ratings:

Parameter	Symbol	Value	Unit	Test Condition
Repetitive Peak Reverse Voltage	$V_{RRM}$	1200	V	$T_j = 25^\circ\text{C}$
Surge Peak Reverse Voltage	$V_{RSM}$	1200	V	$T_j = 25^\circ\text{C}$
DC Blocking Voltage	$V_{DC}$	1200	V	$T_j = 25^\circ\text{C}$
Continuous Forward Current	$I_F$	25.9	A	$T_c = 25^\circ\text{C}$
		12.5		$T_c = 135^\circ\text{C}$
		10		$T_c = 150^\circ\text{C}$
Repetitive Peak Forward Surge Current	$I_{FRM}$	50	A	$T_c = 25^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Wave, $D = 0.3$
Non-repetitive Peak Forward Surge Current	$I_{FSM}$	60	A	$T_c = 25^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Wave
Power Dissipation	$P_{TOT}$	141.5	W	$T_c = 25^\circ\text{C}$
		62		$T_c = 110^\circ\text{C}$
Operating Junction Temperature	$T_j$	-55°C to 175°C	°C	
Storage Temperature	$T_{stg}$	-55°C to 175°C	°C	

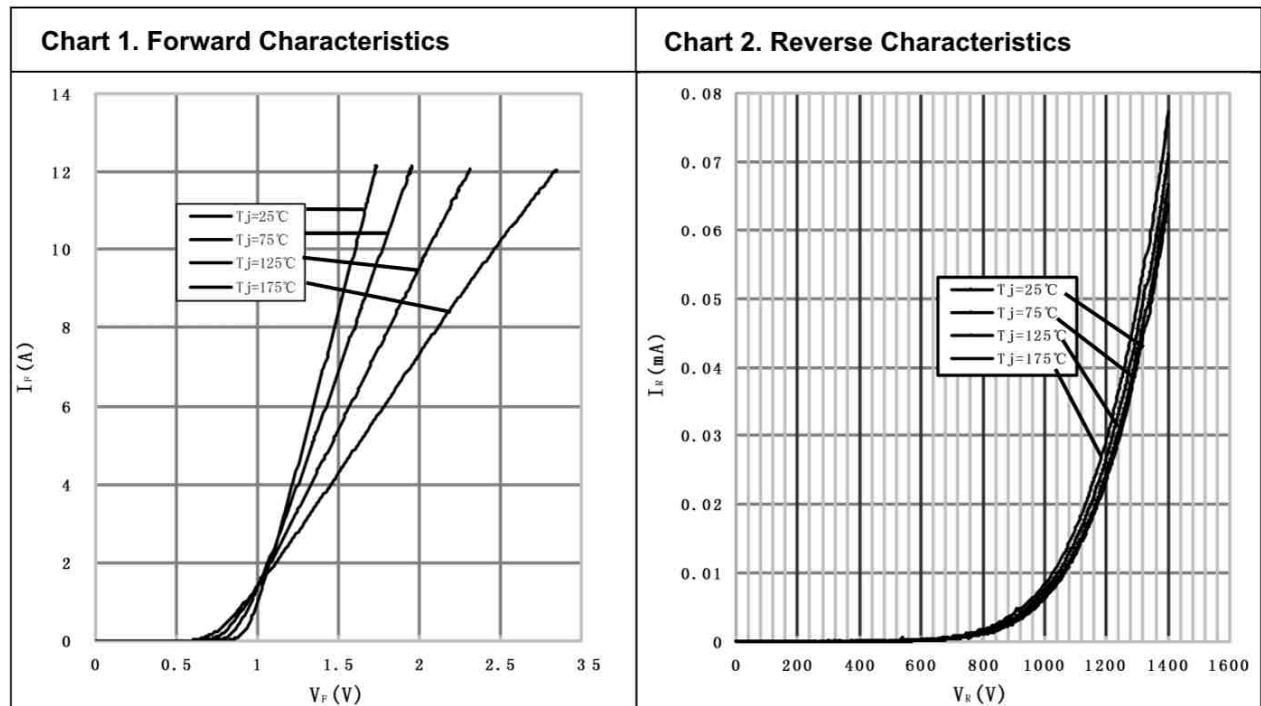
### Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance from Junction to Case	$R_{\theta,JC}$		1.06		$^{\circ}\text{C}/\text{W}$

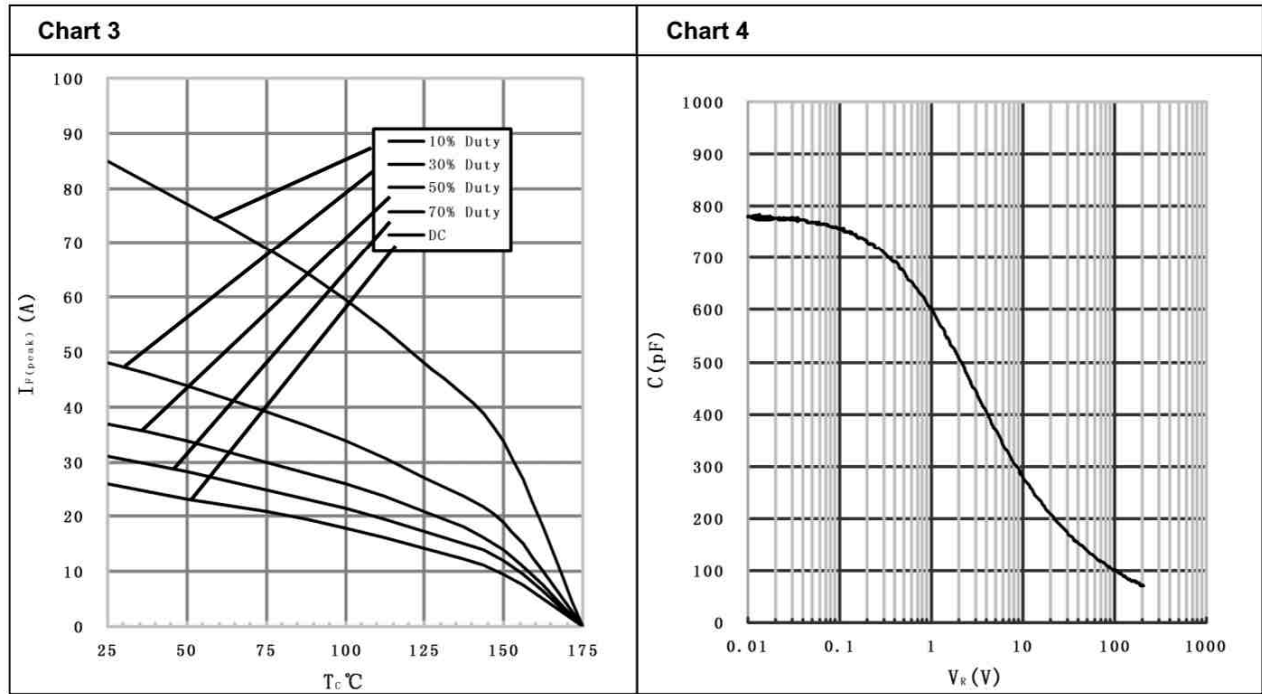
### Electrical Characteristics

Parameter	Symbol	Typ.	Max.	Unit	Test Condition
Forward Voltage	$V_F$	1.63 2.55	1.8 3	V	$I_F=10\text{A}, T_j=25^{\circ}\text{C}$ $I_F=10\text{A}, T_j=175^{\circ}\text{C}$
Reverse Current	$I_R$	50 100	100 200	$\mu\text{A}$	$V_R=1200\text{V}, T_j=25^{\circ}\text{C}$ $V_R=1200\text{V}, T_j=175^{\circ}\text{C}$
Total Capacitance Charge	$Q_C$	57	-	nC	$V_R=800\text{V}, I_F=10\text{A},$ $di/dt=200\text{A}/\mu\text{s}, T_j=25^{\circ}\text{C}$
Total Capacitance	C	770 52 50	790 54 51	pF	$V_R=0\text{V}, T_j=25^{\circ}\text{C}, f=1\text{MHz}$ $V_R=400\text{V}, T_j=25^{\circ}\text{C}, f=1\text{MHz}$ $V_R=800\text{V}, T_j=25^{\circ}\text{C}, f=1\text{MHz}$

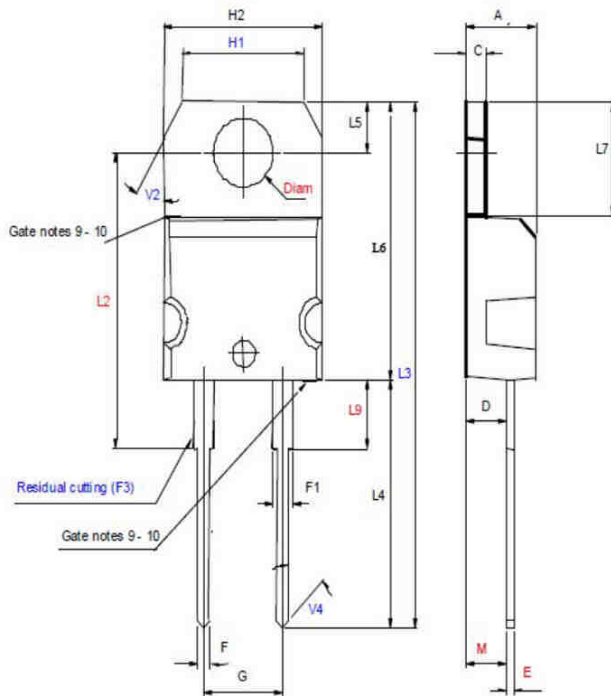
## RATING AND CHARACTERISTICS CURVES (SC2S12010A)



# RATING AND CHARACTERISTICS CURVES (SC2S12010A)



## Package Outline: TO-220



DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.4	4.6	0.173	0.181
C	1.23	1.32	0.048	0.052
D	2.4	2.72	0.094	0.107
E	0.49	0.7	0.019	0.028
F	0.61	0.88	0.024	0.035
F1	1.14	1.7	0.045	0.067
F3		1		0.039
G	4.95	5.15	0.195	0.203
H1	7.7	7.9	0.303	0.311
H2	10	10.4	0.394	0.409
L2	16.4		0.646	
L3	28.9		1.138	
L4	13	14	0.512	0.551
L5	2.65	2.95	0.104	0.116
L6	15.25	15.75	0.600	0.620
L7	6.2	6.6	0.244	0.260
L9	3.5	3.93	0.138	0.155
M	2.6			
V	5°			
V2	30°			
V4	45°			
diam	3.75	3.85	0.148	0.152

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