

## 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.

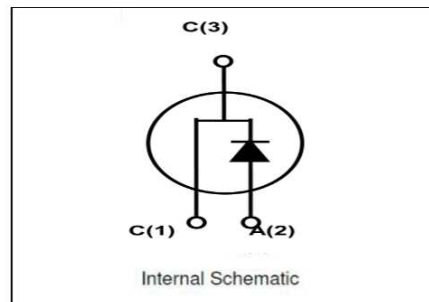
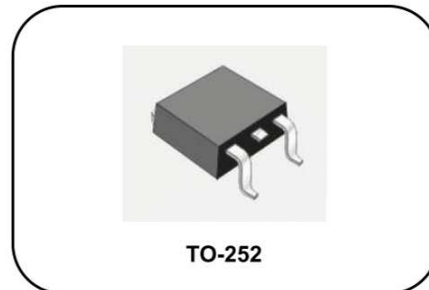
### Benefits:

- ✦ 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.

$V_{RRM}$	<b>1200</b>	<b>V</b>
$I_F, T_c \leq 135^\circ\text{C}$	<b>3.2</b>	<b>A</b>
$Q_C$	<b>11</b>	<b>nC</b>



### 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	$I_F$	6.2	A	$T_c = 25^\circ\text{C}$
		3.2		$T_c = 135^\circ\text{C}$
		2		$T_c = 155^\circ\text{C}$
Repetitive Peak Forward Surge Current	$I_{FRM}$	10	A	$T_c = 25^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Wave, $D = 0.3$
Non-repetitive Peak Forward Surge Current	$I_{FSM}$	14	A	$T_c = 25^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Wave
Power Dissipation	$P_{TOT}$		W	$T_c = 25^\circ\text{C}$ $T_c = 110^\circ\text{C}$
Operating Junction Temperature	$T_j$	-55°C to 175°C	°C	
Storage Temperature	$T_{stg}$	-55°C to 175°C	°C	

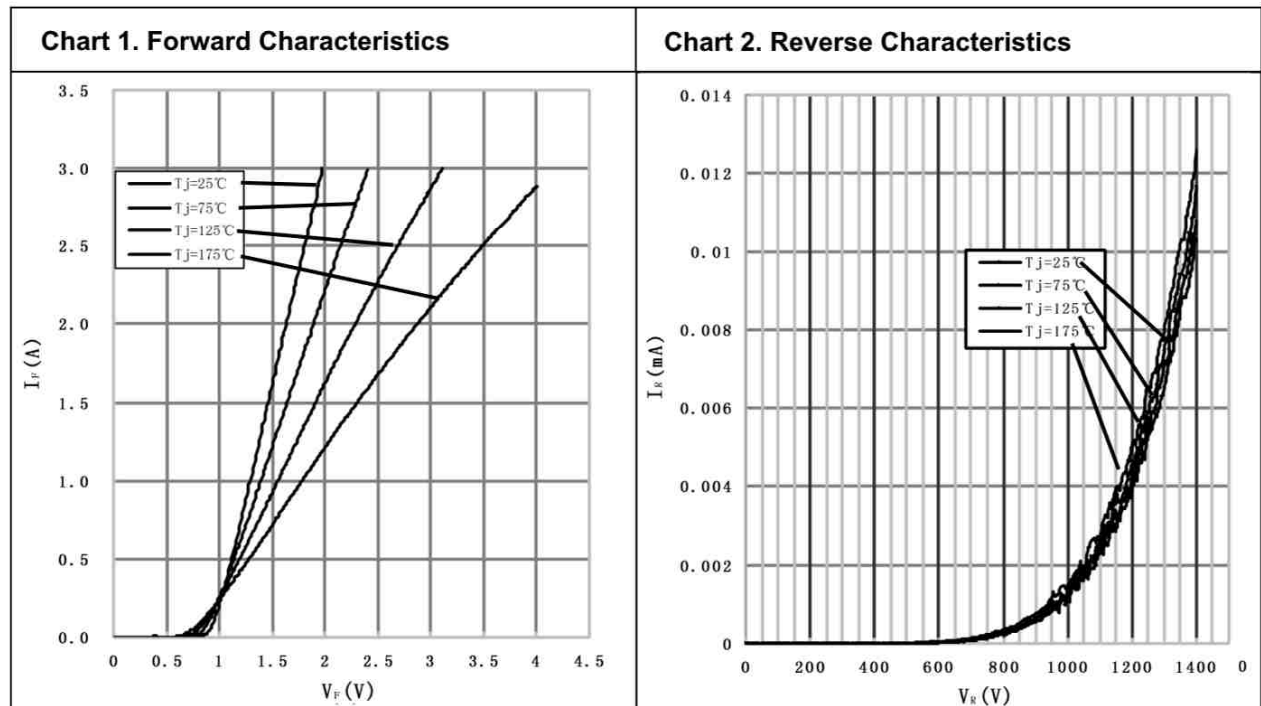
### Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance from Junction to Case	$R_{\theta JC}$		2.82		$^{\circ}\text{C}/\text{W}$

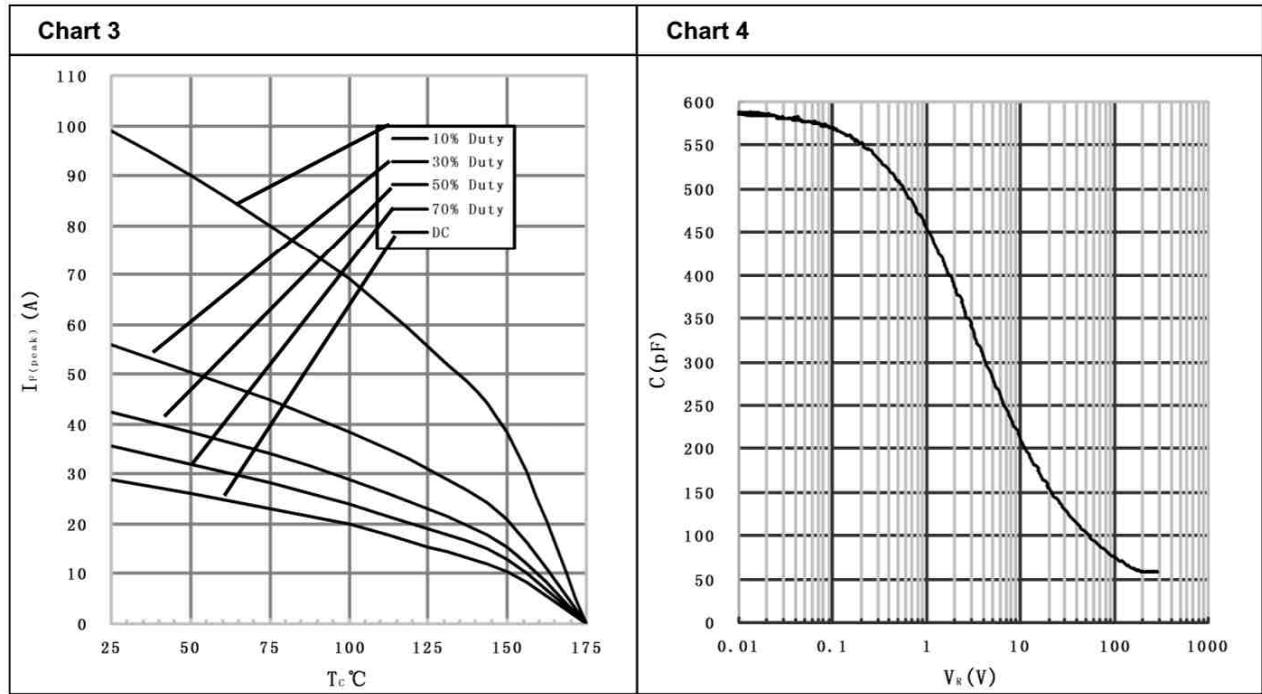
### Electrical Characteristics

Parameter	Symbol	Typ.	Max.	Unit	Test Condition
Forward Voltage	$V_F$	1.62 2.8	1.8 3	V	$I_F=2\text{A}, T_j=25^{\circ}\text{C}$ $I_F=2\text{A}, T_j=175^{\circ}\text{C}$
Reverse Current	$I_R$	20 30	100 200	$\mu\text{A}$	$V_R=650\text{V}, T_j=25^{\circ}\text{C}$ $V_R=650\text{V}, T_j=175^{\circ}\text{C}$
Total Capacitance Charge	$Q_C$	11	-	nC	$V_R=800\text{V}, I_F=2\text{A},$ $di/dt=200\text{A}/\mu\text{s}, T_j=25^{\circ}\text{C}$
Total Capacitance	C	136 12 11	150 13 12	pF	$V_R=0\text{V}, T_j=25^{\circ}\text{C}, f=1\text{MHz}$ $V_R=200\text{V}, T_j=25^{\circ}\text{C}, f=1\text{MHz}$ $V_R=400\text{V}, T_j=25^{\circ}\text{C}, f=1\text{MHz}$

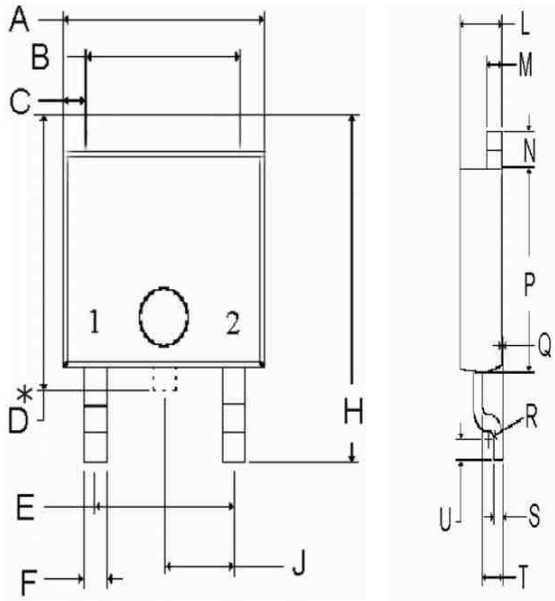
## RATING AND CHARACTERISTICS CURVES (SC2S12002C)



# RATING AND CHARACTERISTICS CURVES (SC2S12002C)



## Package Outline: TO-252



DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	6.477	6.731	0.255	0.265
B	5.004	5.207	0.197	0.205
C	0.686	0.838	0.027	0.033
D*	6.858	8.179	0.270	0.322
E	4.521	4.623	0.178	0.182
F	0.635	0.889	0.025	0.035
H	9.703	10.084	0.382	0.397
J	2.286		0.090	
L	2.184	2.388	0.086	0.094
M	0.762	0.864	0.030	0.034
N	1.016	1.118	0.040	0.044
P	5.969	6.223	0.235	0.245
Q	0.000	0.102	0.000	0.004
R	R0.31		R0.01	
S	0.428	0.588	0.017	0.023
T	1.016	1.118	0.040	0.044
U	0.534	1.118	0.021	0.027

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