SEMICONDUCTOR

SC02120

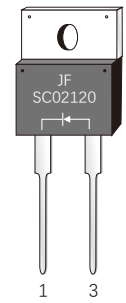
SILICON CARBIDE SCHOTTKY DIODE
Reverse Voltage - 1200V
Forward Current -2A

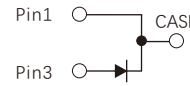
FEATURES

- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- Positive Temperature Coefficient on VF
- Temperature-independent Switching
- 175℃ Operating Junction Temperature

TO-220AC

Sc02120





BENEFITS

- Replace Bipolar with Unipolar Device
- Reduction of Heat Sink Size
- Parallel Devices Without Thermal Runaway
- Essentially No Switching Losses

APPLICATIONS

- Switch Mode Power Supplies
- Power Factor Correction
- Motor drive, PV Inverter, Wind Power Station

V_{RRM}	=	1200	V
I_F (Tc≤160℃)	=	2	A
Q_C	=	16	nC

MAXIMUM RATINGS

Symbol	Parameter	Value	Unit	Test Conditions	Note
V_{RRM}	Repetitive Peak Reverse Voltage	1200	V	T_J=25℃	
V_{RSM}	Surge Peak Reverse Voltage	1200	V	T_J=25℃	
V_R	DC Blocking Voltage	1200	V	T_J=25℃	
I_F	Forward Current	10 5 2	A	Tc=25℃ Tc=130℃ Tc=160℃	
I_{FSM}	Non-Repetitive Forward Surge Current	26	A	Tc=25℃,tp=10ms ,Half Sine Wave	
P_{tot}	Power Dissipation	60	W	Tc=25℃	
T_J\T_{STG}	Operating Junction and Storage Temperature	-55 to +175	℃		

ELECTRICAL CHARACTERISTICS

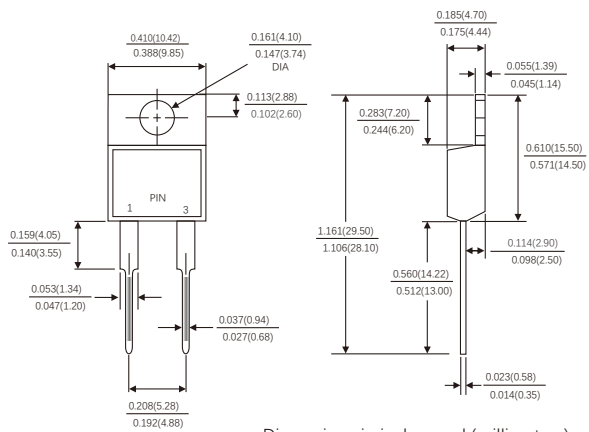
Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
V_F	Forward Voltage	1.4 2.0	1.58 2.3	V	I_F=2A,T_J=25℃ I_F=2A,T_J=175℃	Fig.1
I_R	Reverse Current	- -	20 200	μA	V_R=1200V,T_J=25℃ V_R=1200V,T_J=175℃	Fig.2
C	Total Capacitance	112 17 14	/	pF	V_R=1V,T_J=25℃,f=1MHz V_R=400V,T_J=25℃,f=1MHz V_R=800V,T_J=25℃,f=1MHz	Fig.3
Qc	Total Capacitive Charge	16	/	nC	V_R=800V,TJ=25℃	Fig.4

THERMAL CHARACTERISTICS

Symbol	Parameter	Typ.	Unit	Note
$R_{\theta JC}$	Thermal Resistance from Junction to Case	2.5	℃/W	
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	62	℃/W	
Tsold	Soldering Temperature	260	℃	

PACKAGE OUTLINE DIMENSIONS

TO-220AC



Dimensions in inches and (millimeters)

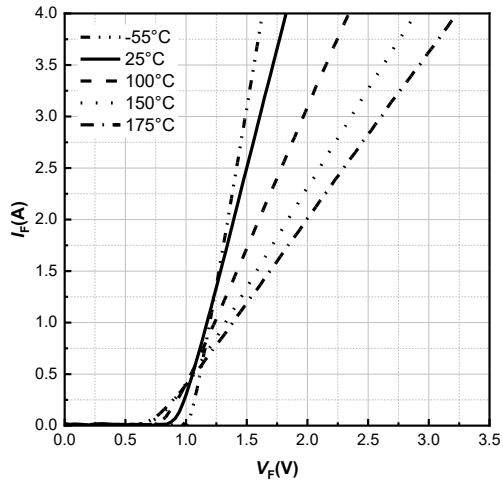


Figure 1. Forward Characteristics

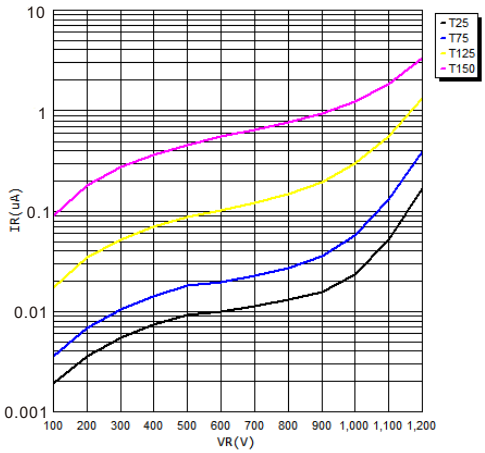


Figure 2. Reverse Characteristics

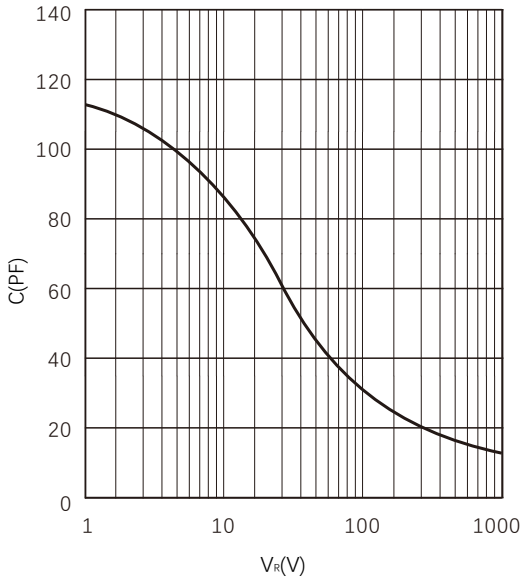


Figure 3.Typical capacitance as function of reverse voltage, C=f(V_R), T_j=25°C, f=1 MHz

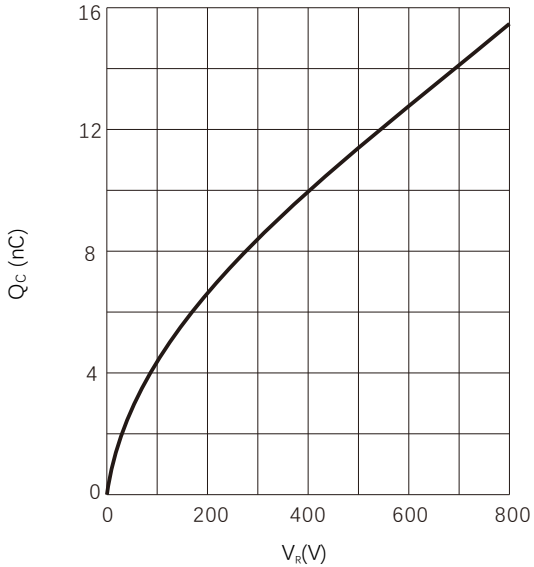


Figure 4.Total Capacitive Charge vs. Reverse Voltage

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