

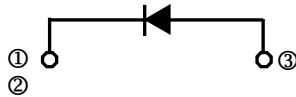
SiC POWER DEVICES

Features

- 1200V Schottky Rectifier
- Zero Reverse Recovery Current
- High-Frequency Operation
- Temperature-Independent Switching Behavior
- Extremely Fast Switching

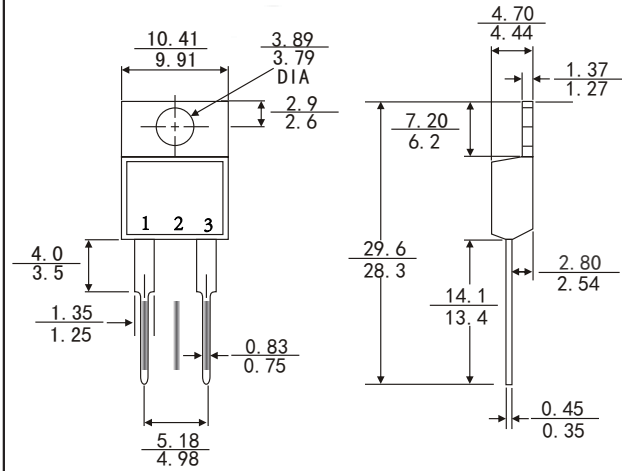
■ SYMBOL

- ① Cathode
② Cathode
③ Anode



TO-220AC

Unit: mm



Maximum Rated Values ($T_c=25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions	Note
V_{RRM}	Repetitive Peak Reverse Voltage	1200	V		
I_F	Continuous Forward Current	67	A	$T_c=25^\circ\text{C}$	Fig. 3
		32		$T_c=135^\circ\text{C}$	
		20		$T_c=155^\circ\text{C}$	
I_{FRM}	Repetitive Peak Forward Surge Current	119	A	$T_c=25^\circ\text{C}$, $t_p=10$ ms, Half Sine Pulse	
		78		$T_c=110^\circ\text{C}$, $t_p=10$ ms, Half Sine Pulse	
I_{FSM}	Non-Repetitive Forward Surge Current	140	A	$T_c=25^\circ\text{C}$, $t_p=10$ ms, Half Sine Pulse	
		120		$T_c=110^\circ\text{C}$, $t_p=10$ ms, Half Sine Pulse	
P_{tot}	Power Dissipation	319	W	$T_c=25^\circ\text{C}$	Fig. 4
		138		$T_c=110^\circ\text{C}$	
T_J	Operating Temperature	-55 to +175	$^\circ\text{C}$		
T_{stg}	Storage Temperature	-55 to +175	$^\circ\text{C}$		

Electrical Characteristics ($T_J=25^\circ\text{C}$)

Symbol	Parameter	Value			Unit	Test Conditions	Note
		Min.	Typ.	Max.			
V_F	Forward Voltage		1.4	1.9	V	$I_F=20\text{A}$, $T_J=25^\circ\text{C}$	Fig. 1
			1.9			$I_F=20\text{A}$, $T_J=175^\circ\text{C}$	
I_R	Reverse Current		10	200	μA	$V_R=1200\text{V}$, $T_J=25^\circ\text{C}$	Fig. 2
			147			$V_R=1200\text{V}$, $T_J=175^\circ\text{C}$	
Q_C	Total Capacitive Charge		107		nC	$V_R=800\text{V}$, $T_J=25^\circ\text{C}$	Fig. 5
C	Total Capacitance		1615		pF	$V_R=0\text{V}$, $T_J=25^\circ\text{C}$, $f=1\text{MHz}$	Fig. 6
			94			$V_R=400\text{V}$, $T_J=25^\circ\text{C}$, $f=1\text{MHz}$	
			88			$V_R=800\text{V}$, $T_J=25^\circ\text{C}$, $f=1\text{MHz}$	
E_C	Capacitance Stored Energy		27		μJ	$V_R=800\text{V}$	Fig. 7

Thermal Characteristics

Symbol	Parameter	Value	Unit	Note
$R_{\theta JC}$	Thermal Resistance(Junction to Case) ¹	0.47	°C/W	Fig. 8

Typical Performance

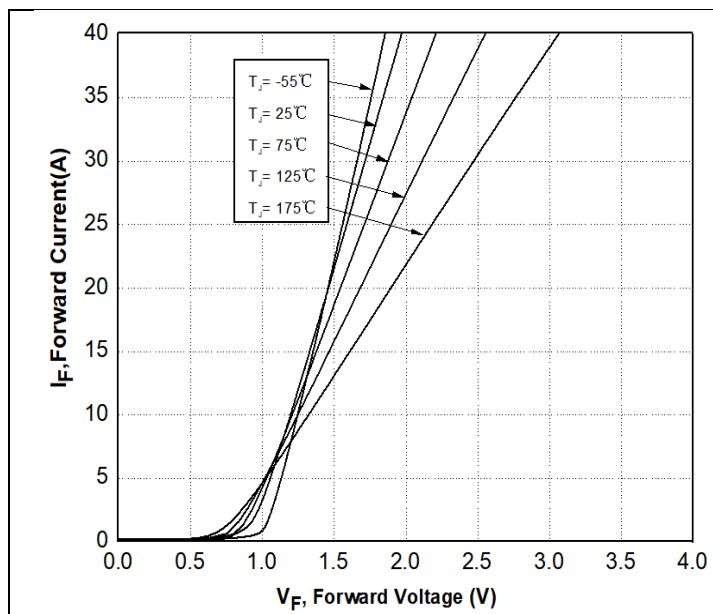


Figure 1. Forward Characteristics

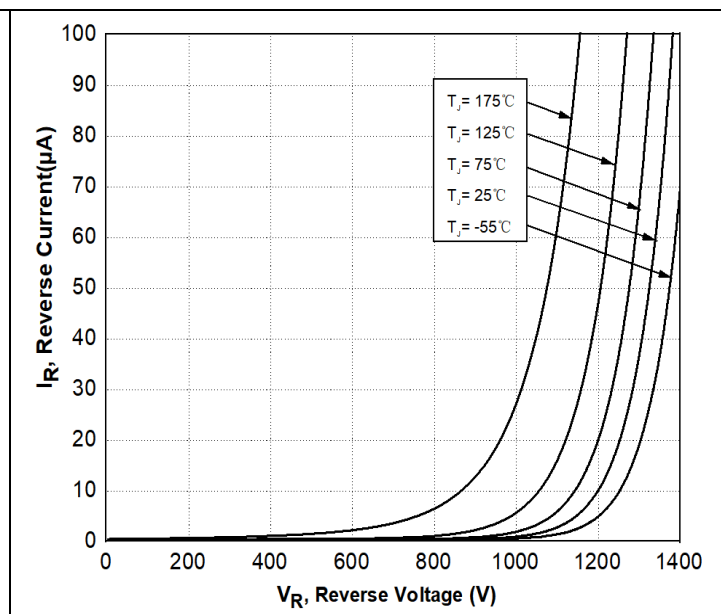


Figure 2. Reverse Characteristics

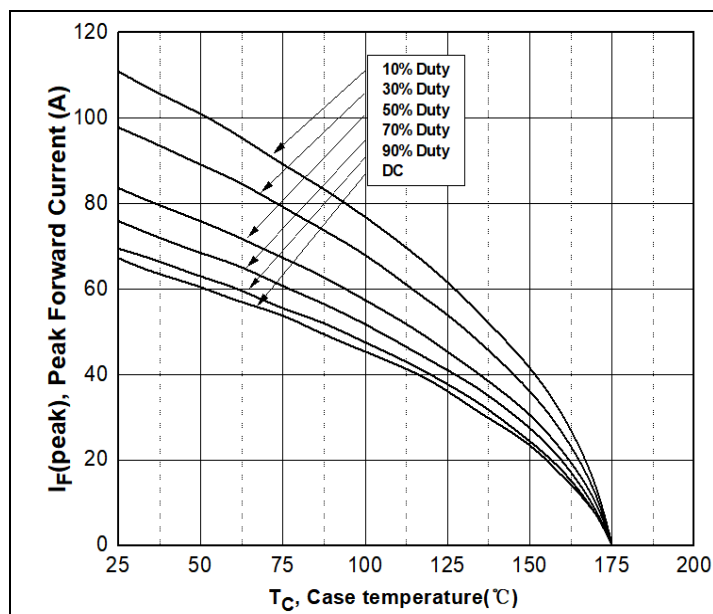


Figure 3. Current Derating

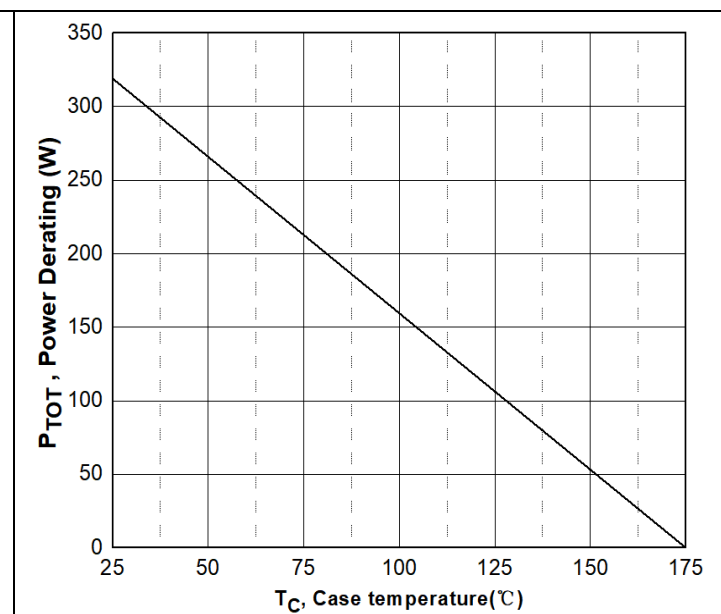


Figure 4. Power Derating

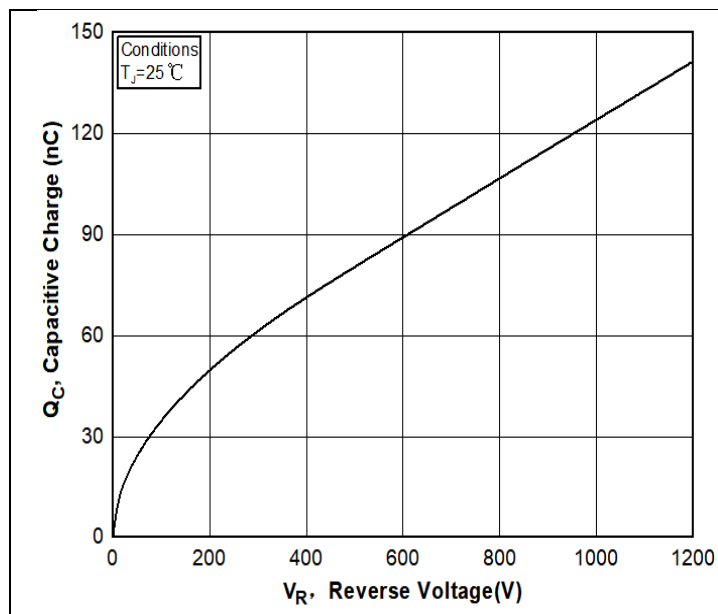


Figure 5. Capacitance Charge Vs. Reverse Voltage

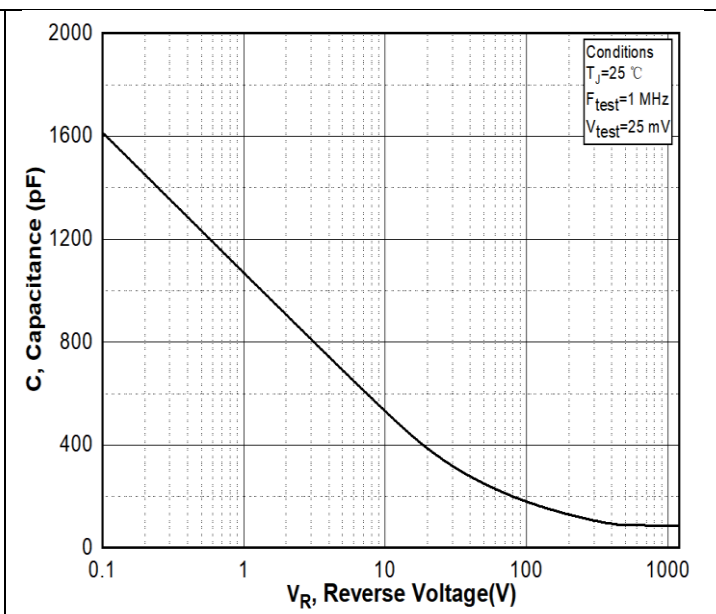


Figure 6. Capacitance Vs. Reverse Voltage

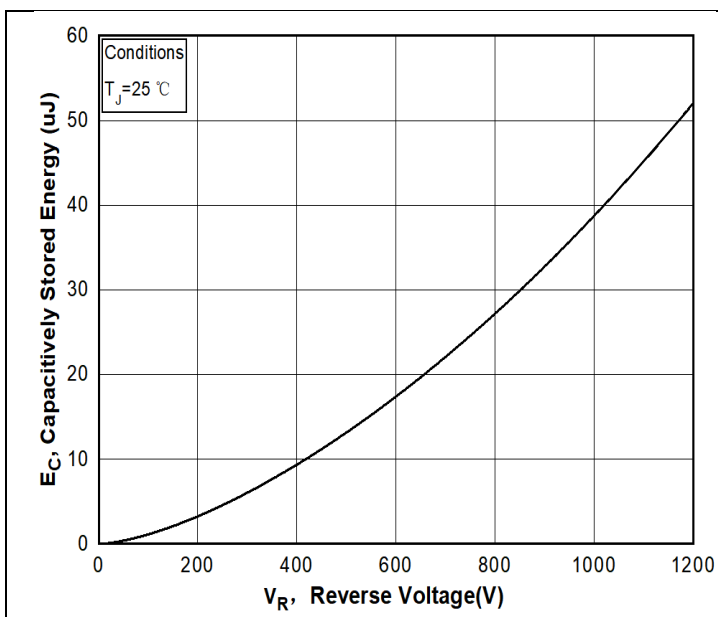


Figure 7. Capacitance Stored Energy

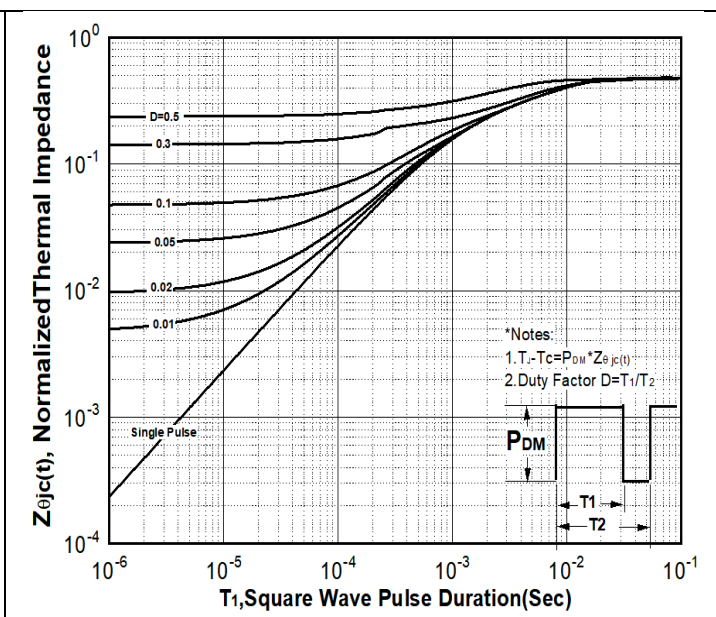


Figure 8. Transient Thermal Response Curve(Junction-to-Case)