

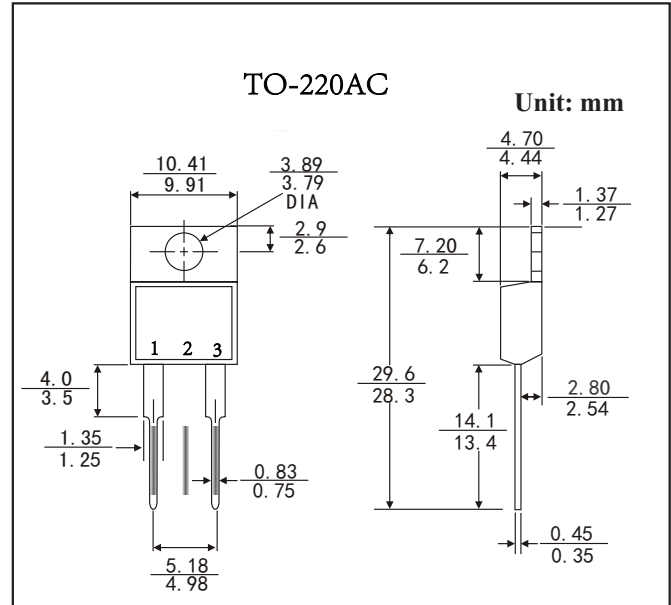
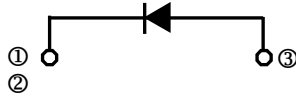
## Silicon Carbide Schottky Diode

### 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



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

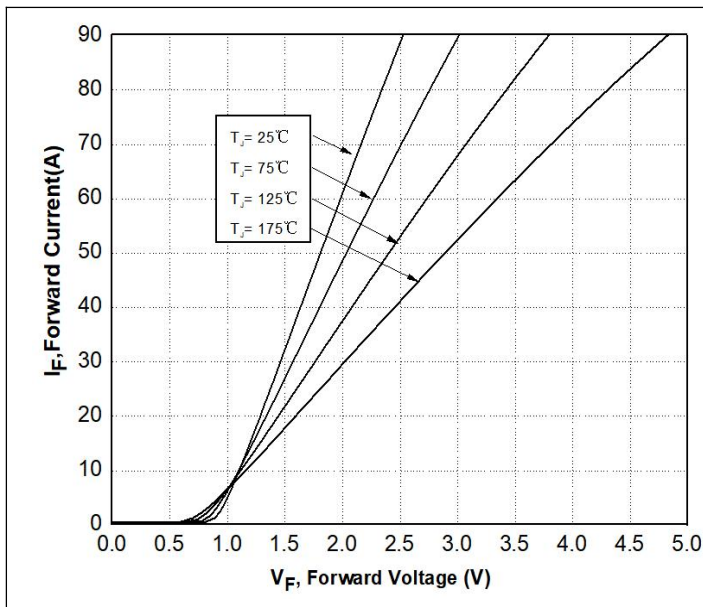
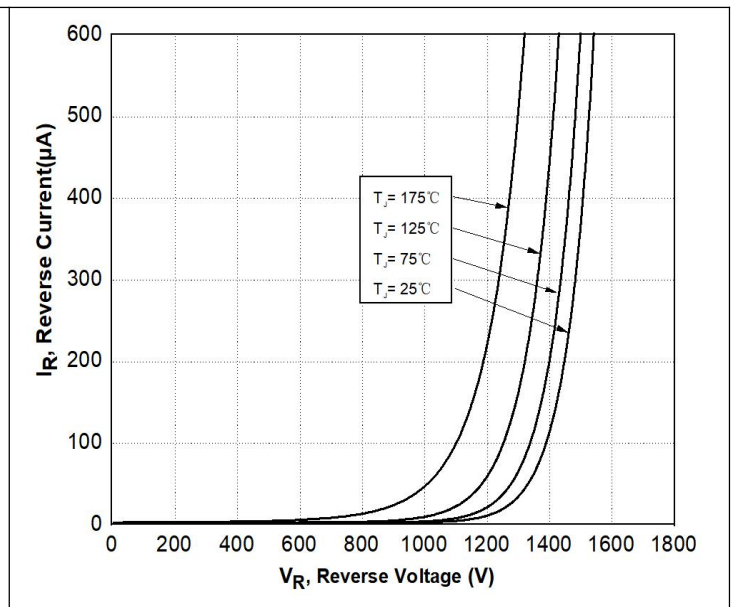
Symbol	Parameter	Value	Unit	Test Conditions	Note
$V_{RRM}$	Repetitive Peak Reverse Voltage	1200	V		
$V_R$	DC Peak Reverse Voltage	1200	V		
$I_F$	Continuous Forward Current	105	A	$T_c=25^\circ\text{C}$	Fig. 3
		50		$T_c=135^\circ\text{C}$	
		38		$T_c=150^\circ\text{C}$	
$I_{FRM}$	Repetitive Peak Forward Surge Current	135	A	$T_c=25^\circ\text{C}$ , $t_p=10$ ms, Half Sine Pulse	
		100		$T_c=110^\circ\text{C}$ , $t_p=10$ ms, Half Sine Pulse	
$I_{FSM}$	Non-Repetitive Forward Surge Current	190	A	$T_c=25^\circ\text{C}$ , $t_p=10$ ms, Half Sine Pulse	
		166		$T_c=110^\circ\text{C}$ , $t_p=10$ ms, Half Sine Pulse	
$I_{F,MAX}$	Non-Repetitive Forward Surge Current	1120	A	$T_c=25^\circ\text{C}$ , $t_p=10\mu\text{s}$ , Square Wave Pulse	
		930		$T_c=110^\circ\text{C}$ , $t_p=10\mu\text{s}$ , Square Wave Pulse	
$P_{tot}$	Power Dissipation	577	W	$T_c=25^\circ\text{C}$	Fig. 4
		250		$T_c=110^\circ\text{C}$	
$T_J$	Operating Temperature	-55 to +175	$^\circ\text{C}$		
$T_{stg}$	Storage Temperature	-55 to +175	$^\circ\text{C}$		
	TO-247 Mounting Torque	1 8.8	Nm lbf-in	M3 Screw 6-32 Screw	

**Electrical Characteristics (T<sub>J</sub>=25°C)**

Symbol	Parameter	Value			Unit	Test Conditions	Note
		Min.	Typ.	Max.			
V <sub>F</sub>	Forward Voltage		1.50	1.8	V	I <sub>F</sub> =30A, T <sub>J</sub> =25°C	Fig. 1
			2.00			I <sub>F</sub> =30A, T <sub>J</sub> =175°C	
I <sub>R</sub>	Reverse Current		15	250	μA	V <sub>R</sub> =1200V, T <sub>J</sub> =25°C	Fig. 2
			208	450		V <sub>R</sub> =1200V V, T <sub>J</sub> =175°C	
Q <sub>C</sub>	Total Capacitive Charge		154		nC	V <sub>R</sub> =800V, T <sub>J</sub> =25°C	Fig. 5
C	Total Capacitance		2425		pF	V <sub>R</sub> =0V, T <sub>J</sub> =25°C, f=1MHz	Fig. 6
			138			V <sub>R</sub> =400V, T <sub>J</sub> =25°C, f=1MHz	
			133			V <sub>R</sub> =800V, T <sub>J</sub> =25°C, f=1MHz	
E <sub>C</sub>	Capacitance Stored Energy		38		μJ	V <sub>R</sub> =800V	Fig. 7

**Thermal Characteristics**

Symbol	Parameter	Value	Unit	Note
R <sub>θJC</sub>	Thermal Resistance(Junction to Case)	0.26	°C/W	Fig. 8

**Typical Performance**

**Figure 1. Forward Characteristics**

**Figure 2. Reverse Characteristics**

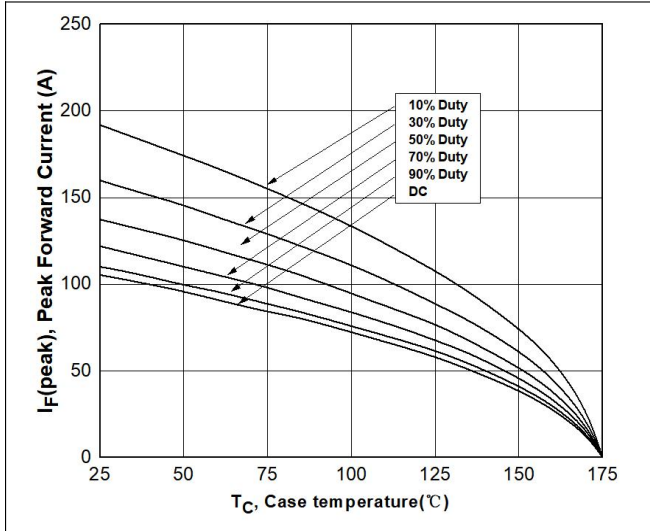


Figure 3. Current Derating

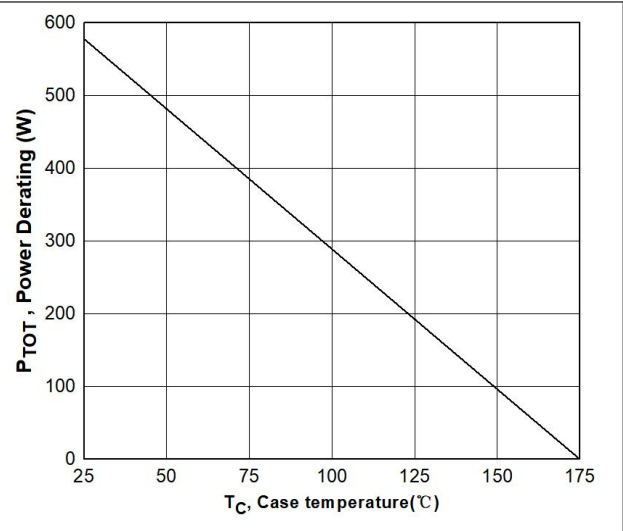


Figure 4. Power Derating

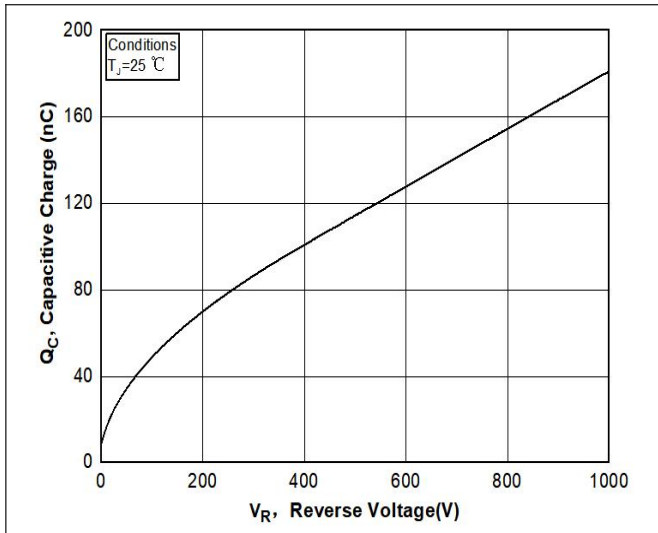


Figure 5. Capacitance Charge Vs. Reverse Voltage

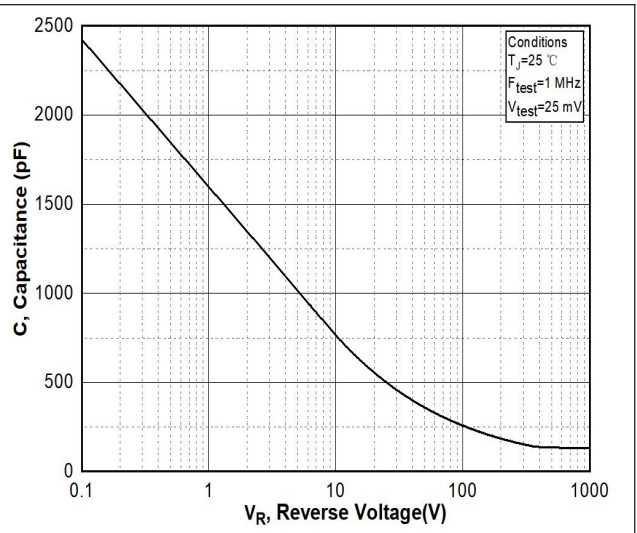


Figure 6. Capacitance Vs. Reverse Voltage

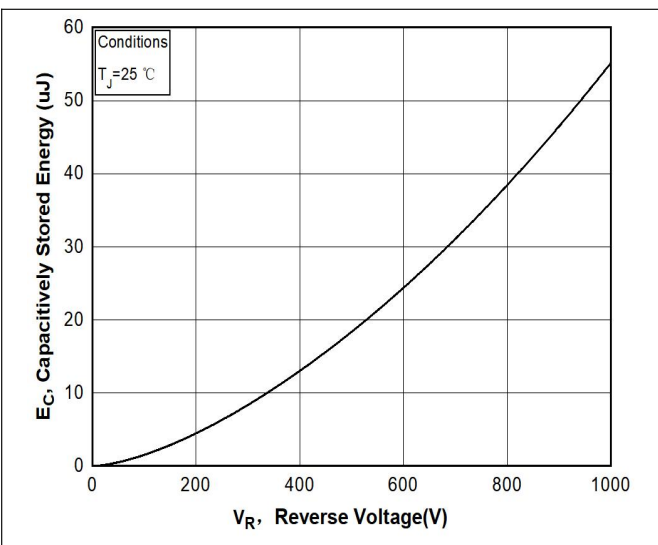


Figure 7. Capacitance Stored Energy

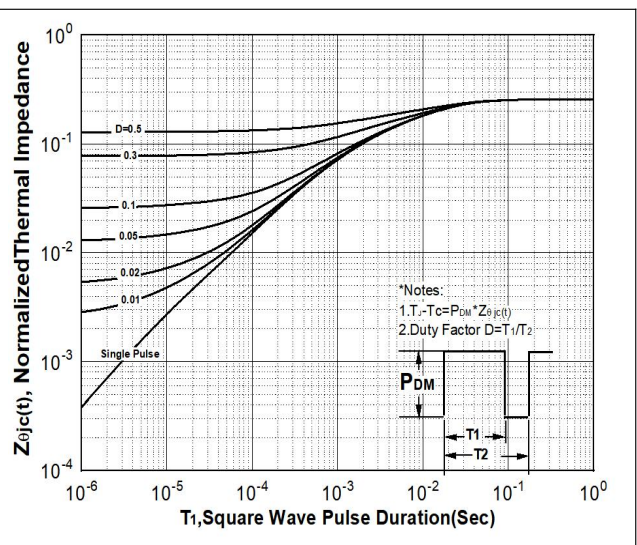


Figure 8. Transient Thermal Response Curve(Junction-to-Case)