

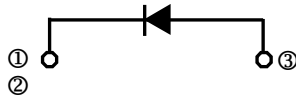
SiC POWER DEVICES

Features

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

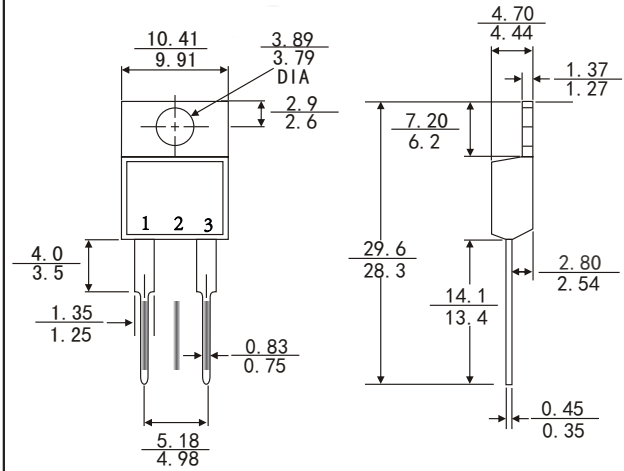
■ SYMBOL

- ① Cathode
② Cathode
③ Anode



TO-220AC

Unit: mm



Maximum Ratings (at $T_c = 25^\circ\text{C}$, unless otherwise specified)

Parameter	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	1200	V
Surge Peak Reverse Voltage	V_{RSM}	1200	V
DC Peak Reverse Voltage	V_R	1200	V
Continuous Forward Current	I_F	30	A
$T_C = 25^\circ\text{C}$		15	
$T_C = 135^\circ\text{C}$		10	
$T_C = 157^\circ\text{C}$			
Repetitive Peak Forward Surge Current	I_{FRM}	57	A
$T_C = 25^\circ\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$ $T_C = 110^\circ\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$		41.5	
Non-Repetitive Forward Surge Current	I_{FSM}	90	A
$T_C = 25^\circ\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$ $T_C = 110^\circ\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$		69.5	
i^2dt value	$\int i^2 dt$	40.5	A^2s
$T_C = 25^\circ\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$ $T_C = 110^\circ\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$		24	
Power dissipation	P_{tot}	115	W
$T_C = 25^\circ\text{C}$ $T_C = 110^\circ\text{C}$		50	
Operating junction Range	T_j	-55 to +175	$^\circ\text{C}$
Storage temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$

Thermal Resistance

Parameter	Symbol	Typ.	Unit
Thermal resistance, junction – case.	R_{thJC}	1.3	°C/W

Electrical Characteristic (at $T_c = 25\text{ °C}$, unless otherwise specified)

Parameter	Symbol	Value			Unit	Test Condition
		min.	typ.	max.		
Forward Voltage	V_F	-	-	1.8	V	$I_F=10\text{A}$ $T_j=25\text{°C}$ $T_j=175\text{°C}$
Reverse Current	I_R	-	-	100	μA	$V_R=1200\text{V}$ $T_j=25\text{°C}$ $T_j=175\text{°C}$
Total Capacitive Charge	Q_C	-	48	-	nC	$V_R=800\text{V}, T_j=25\text{°C}$ $Q_C = \int_0^{V_R} C(V) dV$
Total Capacitance	C	-	695	-	pF	$T_j=25\text{°C}, f=1\text{MHz}$ $V_R=0\text{V}$ $V_R=400\text{V}$ $V_R=800\text{V}$

Characteristics Curve:

Fig 1: Forward Characteristics

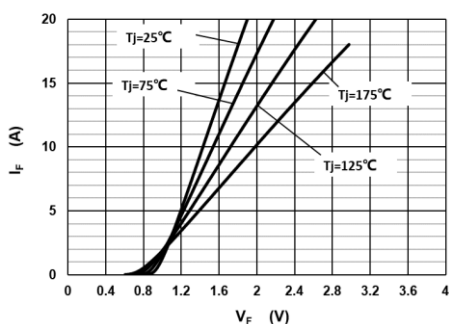


Fig 2: Reverse Characteristics

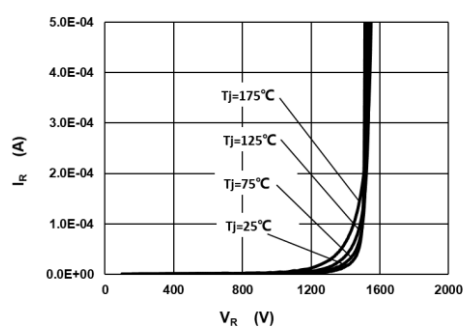


Fig 3: Current Derating

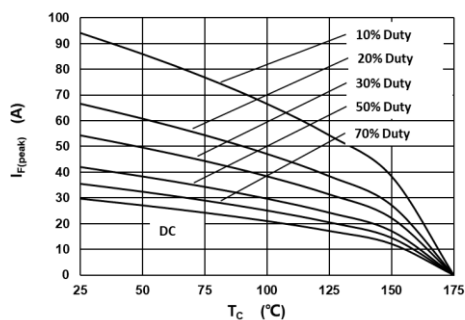


Fig 4: Power Derating

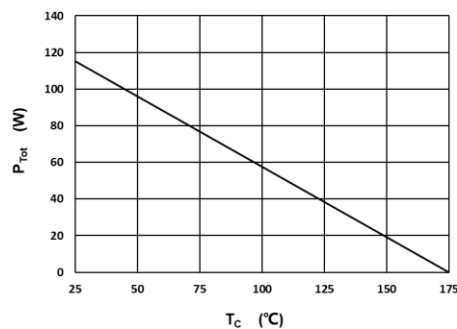


Fig 5: Capacitance vs. Reverse

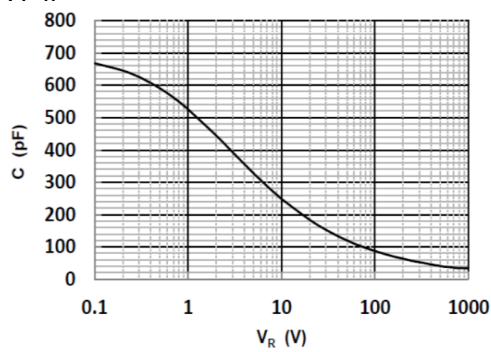


Fig 6: Reverse Charge vs. Reverse

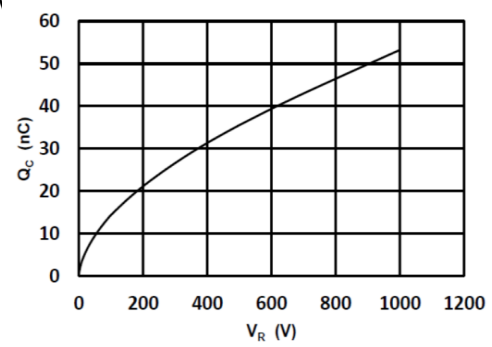


Fig 7: Typical Capacitance Stored Energy

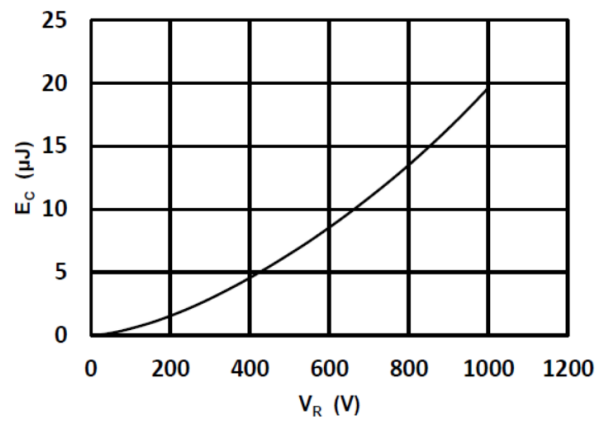


Fig 8: Transient Thermal Impandance

