

◇ **Features**

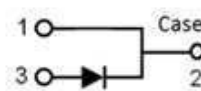
- Negligible reverse recovery
- High-speed switching
- Positive Temperature Coefficient
- Temperature-Independent Switching
- RoHS compliant

1200V SILICON CARBIDE  
SCHOTTKY DIODE

$V_{RRM}$  1200V  
 $I_F$  20A ( $T_C=159^\circ\text{C}$ )  
 $Q_C$  98nC

◇ **Benefits**

- Higher frequency
- Low heat dissipation requirements
- Reduce size and cost of the system
- High-reliability



TO-220AC

**Maximum Ratings (Tc=25°C unless otherwise noted)**

Symbol	Parameter	Value	Unit	Note	
$V_{RRM}$	Repetitive peak reverse voltage	1200	V		
$I_F$	Continuous forward current	Tc=25°C	73	A	Figure 3
		Tc=135°C	35	A	
		Tc=159°C	20	A	
$I_{FSM}$	Non-repetitive forward surge current	Tc=25°C, t <sub>p</sub> =10ms, Half sine pulse	120	A	
		Tc=110°C, t <sub>p</sub> =10ms, Half sine pulse	94	A	
$I_{FRM}$	Repetitive Peak Forward Surge Current	Tc=25°C, t <sub>p</sub> =10ms, Half sine pulse	105	A	
		Tc=110°C, t <sub>p</sub> =10ms, Half sine pulse	80	A	
$\int i^2 dt$	i <sup>2</sup> t value	Tc=25°C, t <sub>p</sub> =10ms	72	A <sup>2</sup> S	
		Tc=110°C, t <sub>p</sub> =10ms	44	A <sup>2</sup> S	
$P_{tot}$	Power Dissipation	Tc=25°C	348	W	Figure 4
		Tc=110°C	151	W	
		Tc=150°C	58	W	
$T_j, T_{stg}$	Operating and Storage Temperature	-55 to +175	°C		

**Electrical Characteristics (Tc=25°C unless otherwise noted)**

Symbol	Parameter	Test Conditions	Value			Unit	Note
			Min.	Typ.	Max.		
$V_{DC}$	DC blocking voltage		1200	-	-	V	
$V_F$	Forward voltage	$I_F=10A$	-	1.22	-	V	Figure 1
		$I_F=20A, T_c=25^\circ C$	-	1.45	1.7	V	
		$I_F=20A, T_c=150^\circ C$	-	1.8	-	V	
		$I_F=20A, T_c=175^\circ C$	-	1.9	-	V	
$I_R$	Reverse current	$V_R=1200V, T_c=25^\circ C$	-	2	150	$\mu A$	Figure 2
		$V_R=1200V, T_c=150^\circ C$	-	110	-	$\mu A$	
		$V_R=1200V, T_c=175^\circ C$	-	160	-	$\mu A$	
$Q_C$	Total capacitive charge	$V_R=800V$	-	98	-	nC	Figure 6
$C$	Total capacitance	$V_R=1V, f=1MHZ$	-	1100	-	pF	Figure 5
		$V_R=400V, f=1MHZ$	-	92	-	pF	
		$V_R=800V, f=1MHZ$	-	78	-	pF	
$E_C$	Capacitance Stored Energy	$V_R=800V$	-	30	-	$\mu J$	Figure 7

**Thermal Characteristics**

Symbol	Parameter	Value		Unit	Note
		Typ.	Max.		
$R_{th(j-c)}$	Thermal resistance (Junction to case)	0.43	-	$^\circ C/W$	Figure 8

**Electrical Characteristic Curves**

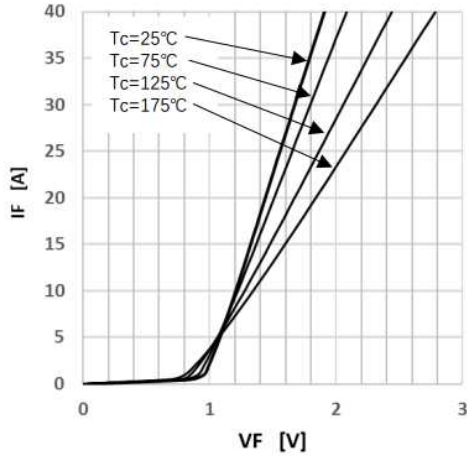


Figure 1 Forward Characteristics

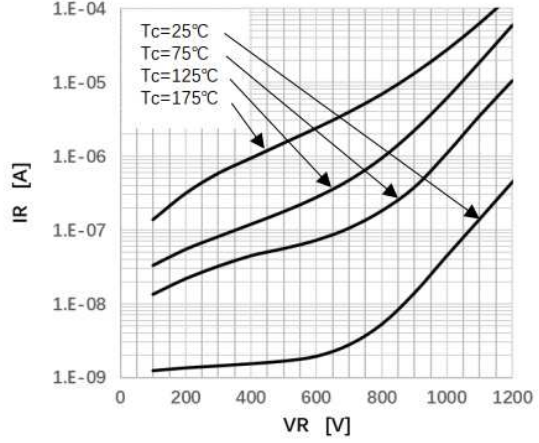


Figure 2 Reverse Characteristics

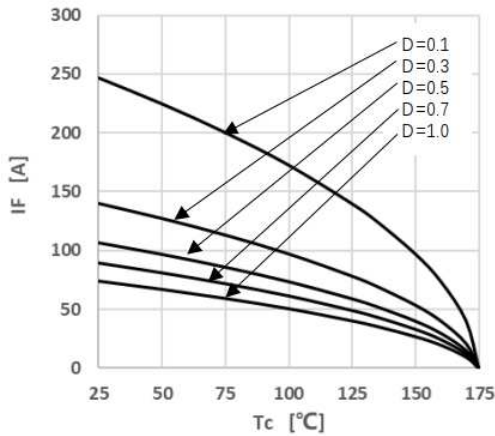


Figure 3 Peak Forward Current Derating

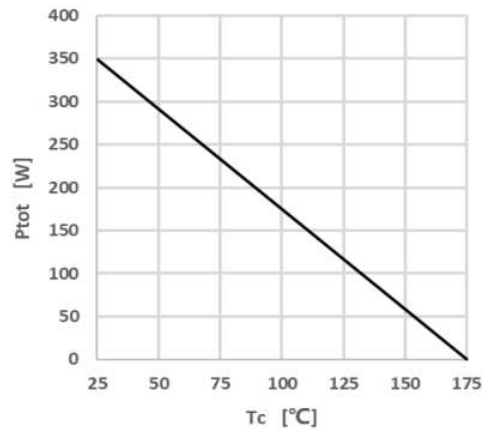


Figure 4 Power Dissipation

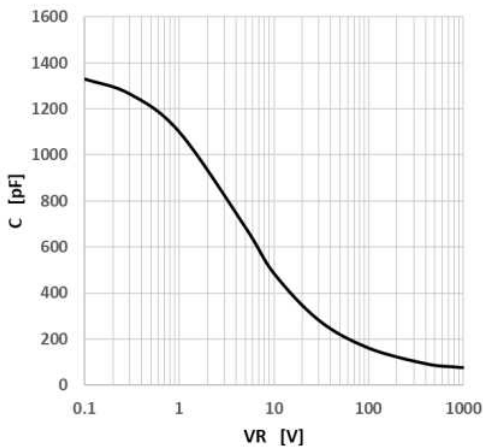


Figure 5 Capacitance vs. Reverse Voltage

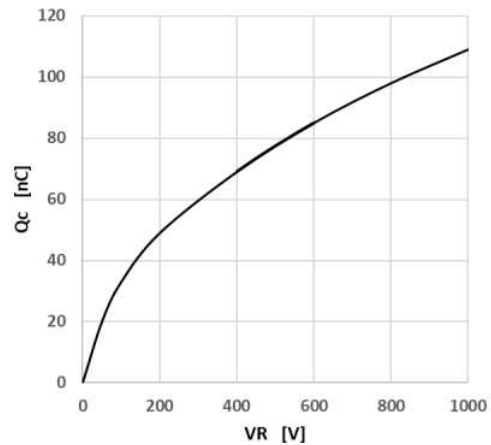


Figure 6 Capacitance Charge vs. Reverse Voltage

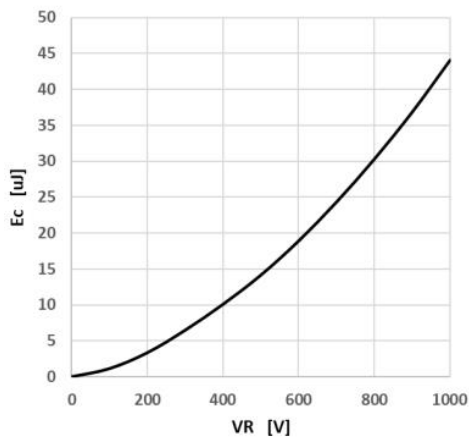


Figure 7 Capacitance Stored Energy

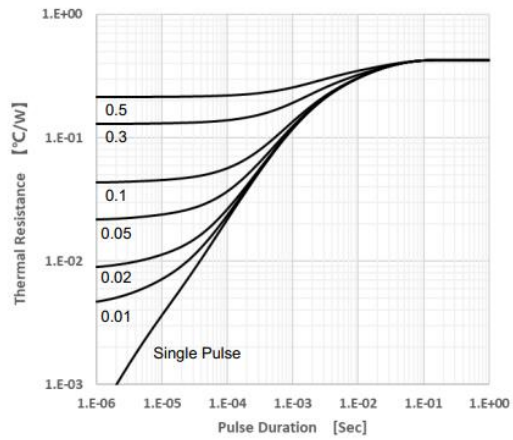
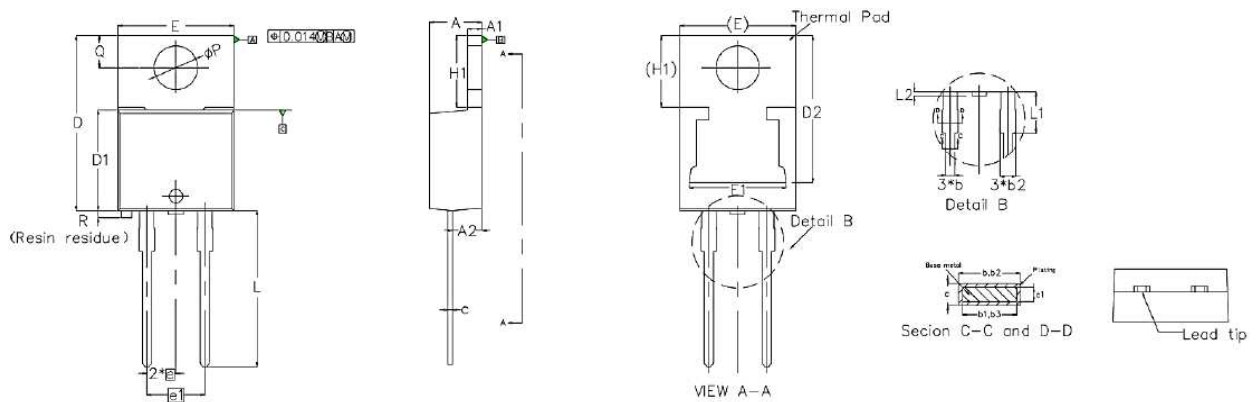


Figure 8 Transient Thermal Impedance

TO-220AC Package Dimensions : (Unit : mm)



SYMBOL	MILLIMETERS			NOTES	SYMBOL	MILLIMETERS			NOTES
	Normal	MIN.	MAX.			Normal	MIN.	MAX.	
A	4.55	4.44	4.65		E1	8.57	8.25	8.89	
A1	1.27	1.14	1.39		e	2.54	2.41	2.67	
A2	2.60	2.54	2.79		e1	5.08	4.95	5.20	
b	0.85	0.69	0.94		H1	6.20	6.09	6.40	
b1	0.83	0.38	0.97		L	13.60	13.52	14.00	
b2	1.33	1.20	1.45		L1	3.60	3.56	3.80	
b3	1.33	1.20	1.45		L2	-	0	0.35	
c	0.50	0.36	0.56		∅P	3.80	3.70	3.91	
c1	0.48	0.36	0.56		Q	2.80	2.62	2.87	
D	15.25	14.95	15.32		R			0.2	
D1	8.75	8.50	8.89						
D2	12.85	12.20	13.30						
E	10.18	10.11	10.40						