



1200V Silicon Carbide Schottky Diode

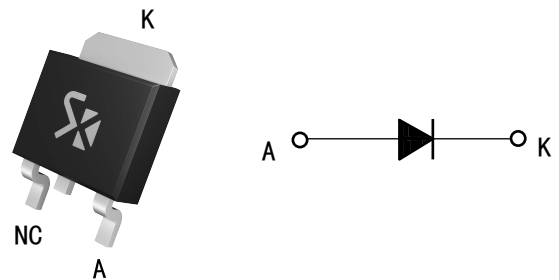
◇Features

- High surge current capability
- No reverse recovery
- Positive Temperature Coefficient
- Specified dv/dt ruggedness
- Halogen-free /RoHS compliant

V_{RRM}	1200V
I_F	2A ($T_c=165^{\circ}\text{C}$)
Q_C	12nC

◇Benefits

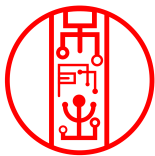
- Extremely fast switching
- Low heat dissipation requirements
- Reduce size and cost of the system
- High-reliability
- System efficiency improvement



◇Applications

- Solar inverter
- Power factor correction
- Data Center
- Switch mode power supply
- AC/DC converters

Marking	Package
02120	TO-252-2NC

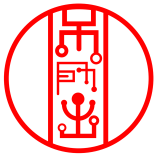


Maximum Ratings (T_c=25°C unless otherwise noted)

Symbol	Parameter		Value	Unit	Note
V _{RRM}	Repetitive peak reverse voltage		1200	V	
I _F	Continuous forward current	T _c =25	11	A	Figure 3
		T _c =135°C	5	A	
		T _c =165°C	2	A	
I _{FSM}	Non-repetitive forward surge current	T _c =25°C, t _p =10ms, Half sine pulse	19	A	
		T _c =110°C, t _p =10ms, Half sine pulse	14	A	
I _{FRM}	Repetitive Peak Forward Surge Current	T _c =25°C, t _p =10ms, Half sine pulse	18	A	
∫i ² dt	i ² t value	T _c =25°C, t _p =10ms	1.80	A ² S	
		T _c =110°C, t _p =10ms	0.98	A ² S	
P _{tot}	Power Dissipation	T _c =25°C	108	W	Figure 4
		T _c =110°C	47	W	
		T _c =150°C	18	W	
T _j , T _{stg}	Operating and Storage Temperature		-55 to +175	°C	

Electrical Characteristics (T_c=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 =1A	-	1.17	-	V	Figure 1
		I _F =2A, T _c =25°C	-	1.38	1.60	V	
		I _F =2A, T _c =175°C	-	2.0	-	V	
I _R	Reverse current	V _R =1200V, T _c =25°C	-	1.0	50	uA	Figure 2
		V _R =1200V, T _c =175°C	-	4.0	-	uA	
Q _C	Total capacitive charge	V _R =800V	-	12	-	nC	Figure 6
C	Total capacitance	V _R =1V, f=1MHZ	-	125	-	pF	Figure 5
		V _R =400V, f=1MHZ	-	12	-	pF	
		V _R =800V, f=1MHZ	-	9	-	pF	
E _C	Capacitance Stored Energy	V _R =800V	-	3.70	-	uJ	Figure 7



Thermal Characteristics

Symbol	Parameter	Value		Unit	Note
		Typ.	Max.		
$R_{th(j-c)}$	Thermal resistance (Junction to case)	1.388	-	°C/W	Figure 8

Electrical Characteristic Curves

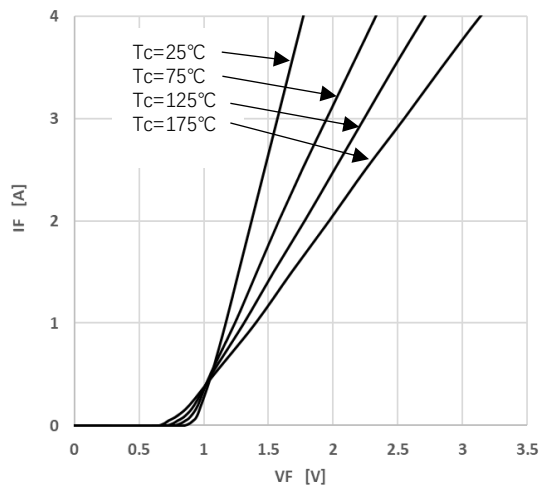


Figure 1 Forward Characteristics

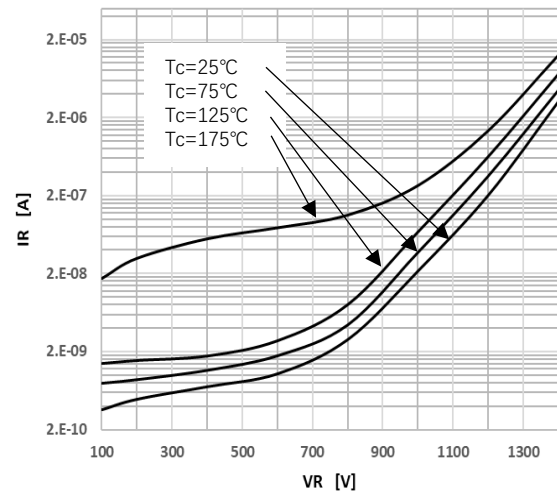


Figure 2 Reverse Characteristics

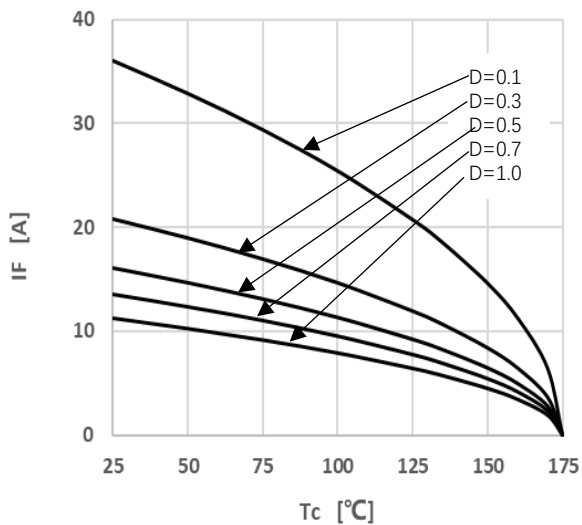


Figure 3 Peak Forward Current Derating

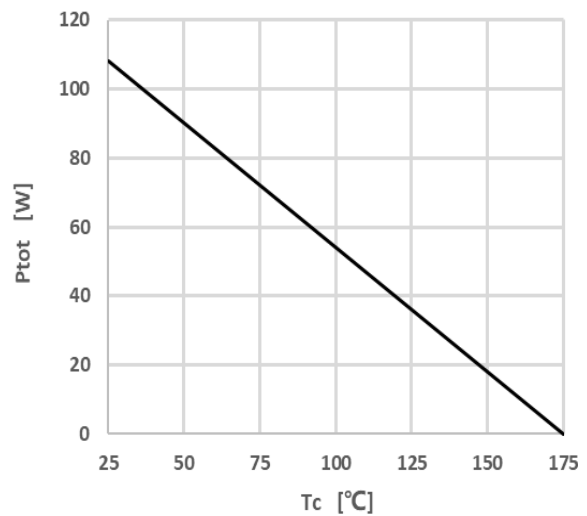


Figure 4 Power Dissipation

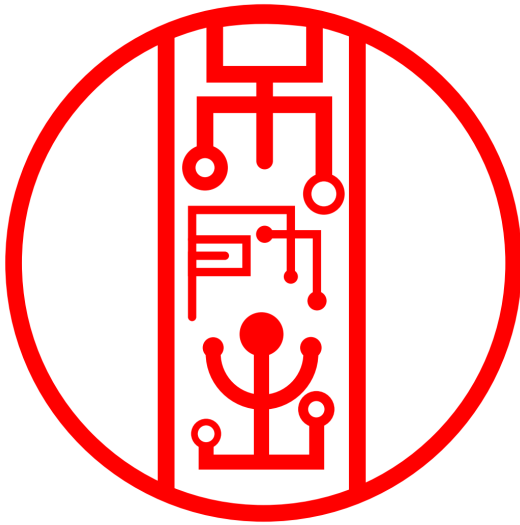


Figure 5 Capacitance vs. Reverse Voltage

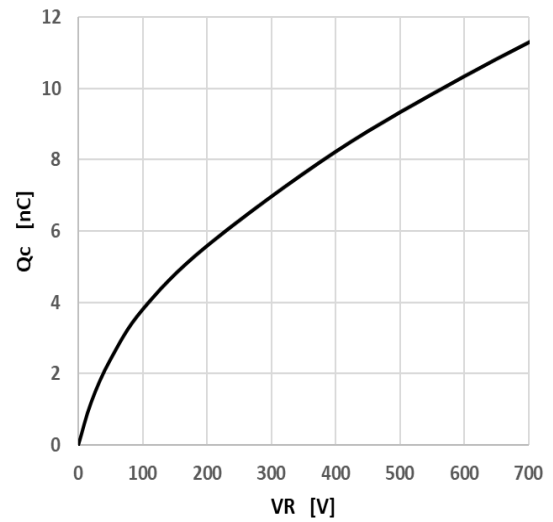


Figure 6 Capacitance Charge vs. Reverse Voltage

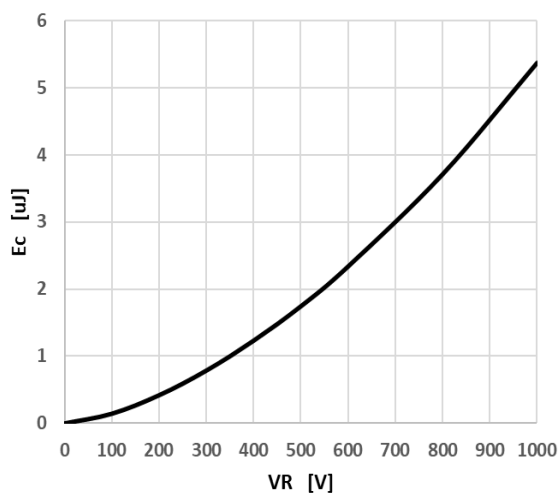


Figure 7 Capacitance Stored Energy

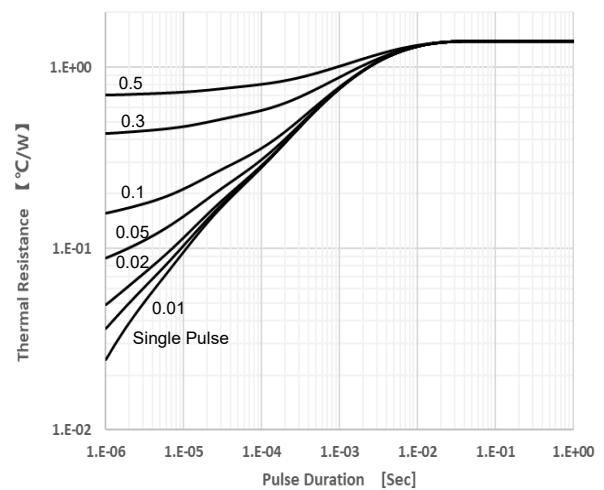
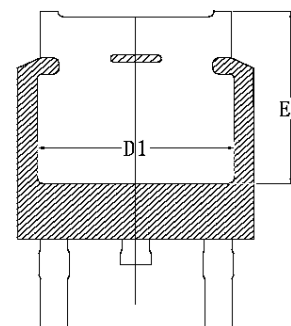
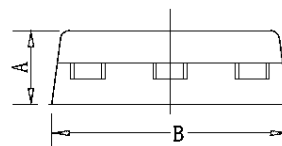
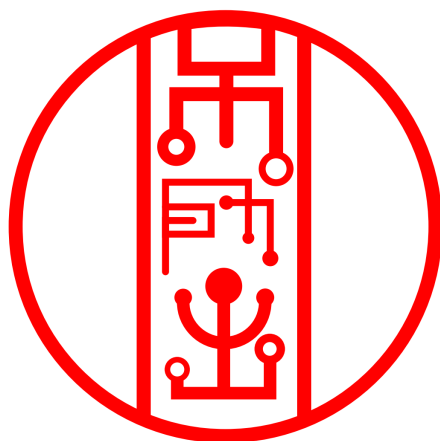


Figure 8 Transient Thermal Impedance

Package Dimensions

To-252-2NC



Symbol	Min	Typ	Max
A	2.20	2.30	2.40
A1	0.91	1.01	1.11
A2			0.25
B	6.50	6.60	6.70
C	0.40	0.50	0.60
C1	0.40	0.50	0.60
D	5.15	5.30	5.45
D1	5.10	5.25	5.40
E	2.20	2.29	2.40
E1	4.95	5.15	5.35
F	0.66	0.76	0.86
F1	0.70	0.82	0.95
L	9.70	9.90	10.10
L1	2.67	2.87	3.07
L2	6.00	6.10	6.20
N	0.60	0.80	1.00