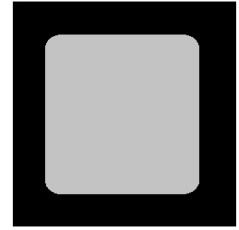


# N3D-1200-020

## Silicon Carbide Schottky Diode Chip



Part Number	Die Size	Anode	Cathode
SIC-1200-020	3.00 x 3.00 mm <sup>2</sup>	Al	Ni/Ag

### Maximum Ratings

Symbol	Parameter	Value	Unit	Test Conditions	Note
V <sub>RRM</sub>	Repetitive Peak Reverse Voltage	1200	V		
I <sub>F</sub>	Continuous Forward Current	20*	A	T <sub>C</sub> =150°C	
I <sub>FRM</sub>	Repetitive Peak Forward Surge Current	100	A	T <sub>C</sub> =25°C, t <sub>p</sub> =10 ms, Half Sine Wave	*
I <sub>FSM</sub>	Non-Repetitive Peak Forward Surge Current	185	A	T <sub>C</sub> =25°C, t <sub>p</sub> =10ms, Half Sine Wave	*
I <sub>F,Max</sub>	Non-Repetitive Peak Forward Surge Current	1200	A	T <sub>C</sub> =25°C, t <sub>p</sub> = 10 μs, Pulse	*
T <sub>J</sub> , T <sub>stg</sub>	Operating Junction and Storage Temperature	-55 to +175	°C		

\* R<sub>θJC</sub>=0.55°C/W

### Electrical Characteristics

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
V <sub>F</sub>	Forward Voltage	1.5 2.2	1.8 3	V	I <sub>F</sub> = 20 A T <sub>J</sub> =25°C I <sub>F</sub> = 20 A T <sub>J</sub> =175°C	Figure 1
I <sub>R</sub>	Reverse Current	10 20	50 100	μA	V <sub>R</sub> = 1200 V T <sub>J</sub> =25°C V <sub>R</sub> = 1200 V T <sub>J</sub> =175°C	Figure 2
Q <sub>C</sub>	Total Capacitive Charge	95		nC	V <sub>R</sub> = 800 V, T <sub>J</sub> = 25°C Q <sub>C</sub> =∫ <sub>0</sub> <sup>V<sub>R</sub></sup> C(V)dV	Figure 4
C	Total Capacitance	1430 89 65		pF	V <sub>R</sub> = 0 V, T <sub>J</sub> = 25°C, f = 1 MHz V <sub>R</sub> = 400 V, T <sub>J</sub> = 25°C, f = 1 MHz V <sub>R</sub> = 800 V, T <sub>J</sub> = 25°C, f = 1 MHz	Figure 3
E <sub>C</sub>	Capacitance Stored Energy	50		μJ	V <sub>R</sub> = 800 V	

## Mechanical Parameters

Parameter	Typ.	Unit
Die Size	3.00 x 3.00	mm
Anode Pad Size	2.71 x 2.71	mm
Anode Pad Opening	2.52 x 2.52	mm
Thickness	180 ± 10%	µm
Wafer Size	150	mm
Anode Metalzation (Al)	4	µm
Cathode Metalzation (Ni/Ag)	1.5	µm
Frontside Passivation	Polyimide	

## Typical Performance

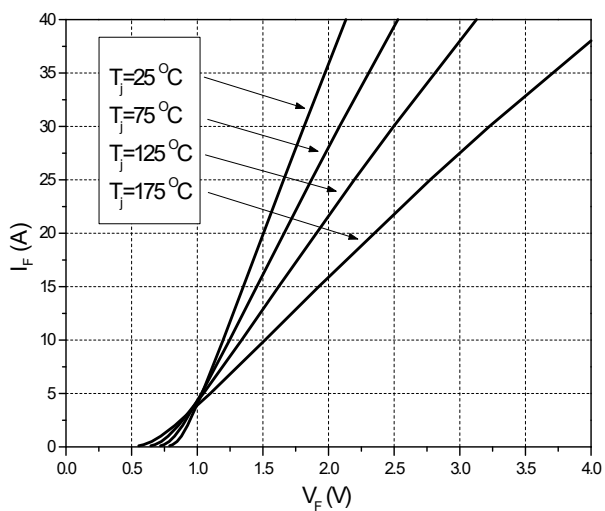


Figure 1. Forward Characteristics

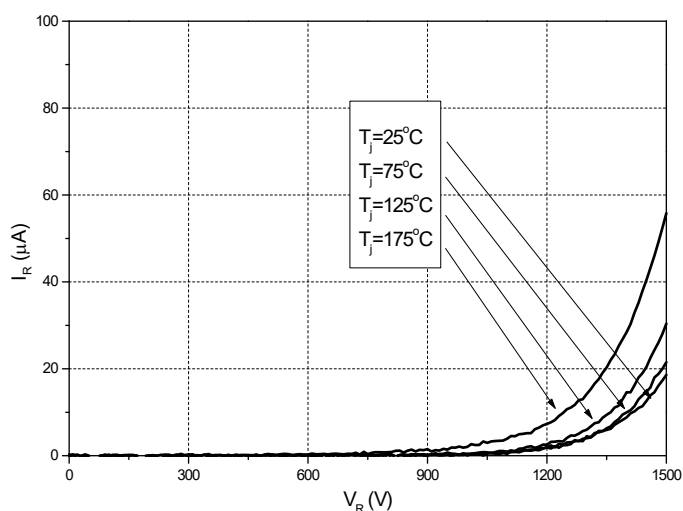


Figure 2. Reverse Characteristics

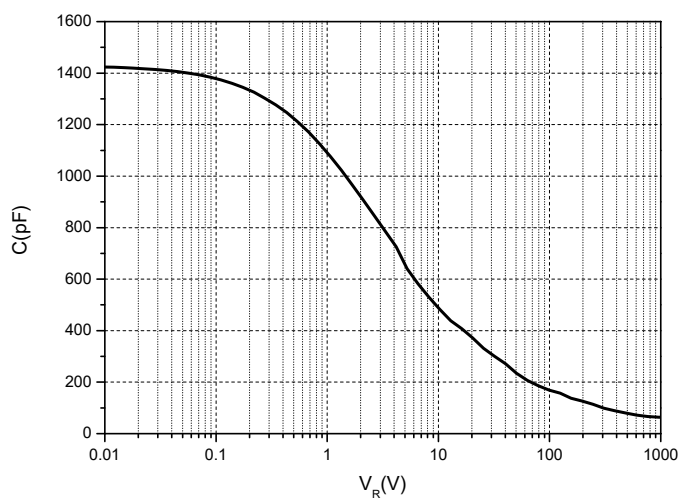


Figure 3. Capacitance vs. Reverse Voltage

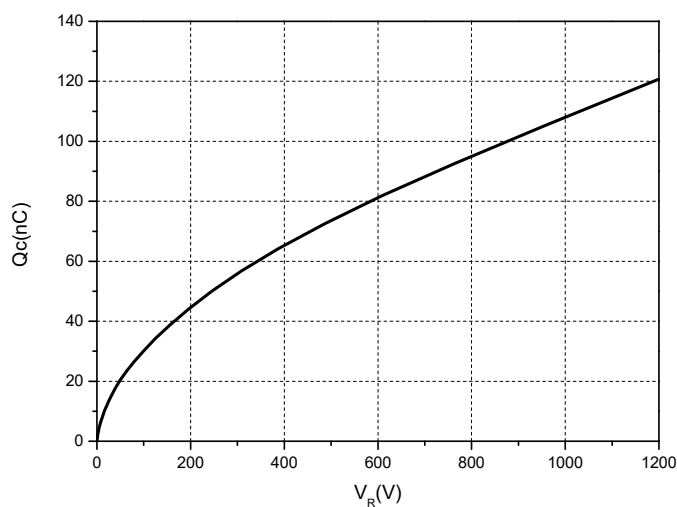
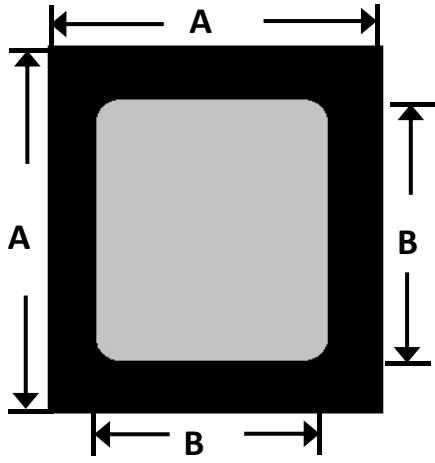


Figure 4. Total Capacitance Charge vs. Reverse Voltage

---

**Chip Dimensions**



Symbol	Dimension(mm)
A	3.00
B	2.52