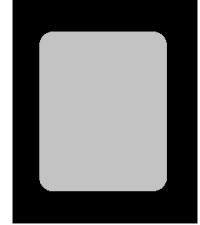


# N3D-1200-002

## Silicon Carbide Schottky Diode Chip

Part Number	Die Size	Anode	Cathode
H3D-1200-002	1.18 x 1.18 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	4	A	T <sub>C</sub> =135°C	
I <sub>FRM</sub>	Repetitive Peak Forward Surge Current	10	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	18	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	180	A	T <sub>C</sub> =25°C, t <sub>p</sub> = 10 μs, Pulse	*
V <sub>R</sub>	DC Peak Blocking Voltage	1200	V		
T <sub>J</sub> , T <sub>stg</sub>	Operating Junction and Storage Temperature	-55 to +175	°C		

\* R<sub>θJC</sub>=1.96°C/W

### Electrical Characteristics

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
V <sub>F</sub>	Forward Voltage	1.45 1.90	1.80 2.50	V	I <sub>F</sub> = 2 A T <sub>J</sub> =25°C I <sub>F</sub> = 2 A T <sub>J</sub> =175°C	Figure 1
I <sub>R</sub>	Reverse Current	2 40	20 100	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	11.2		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	148 11 8		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	5.8		μJ	V <sub>R</sub> = 800 V	

## Mechanical Parameters

Parameter	Typ.	Unit
Die Size	1.18 x 1.18	mm
Anode Pad Opening	0.7 x 0.7	mm
Thickness	180 ± 10%	μm
Wafer Size	150	mm
Anode Metalization (Al)	4	μm
Cathode Metalization (Ni/Ag)	1.5	μm
Frontside Passivation	Polyimide	

## Typical Performance

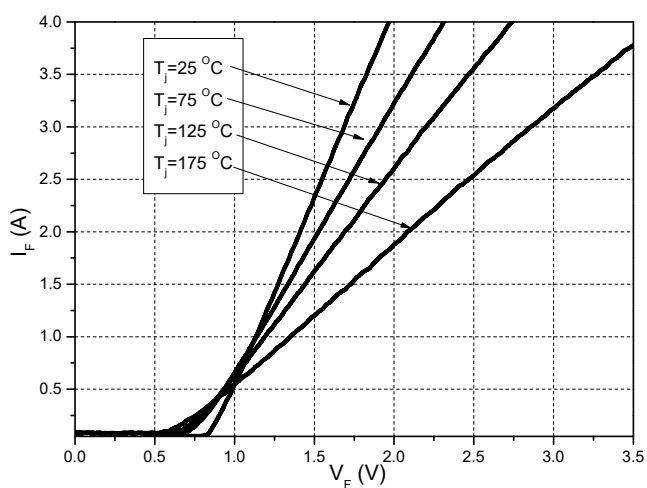


Figure 1. Forward Characteristics

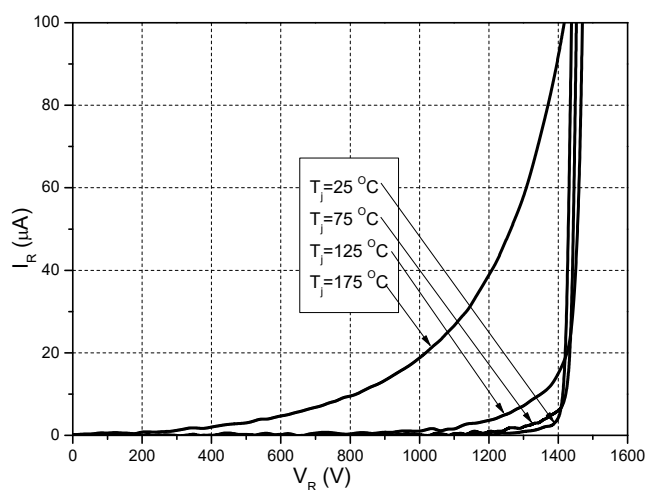


Figure 2. Reverse Characteristics

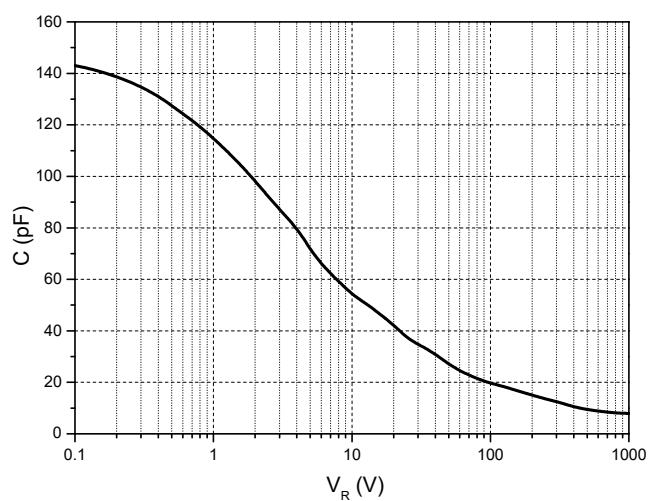


Figure 3. Capacitance vs. Reverse Voltage

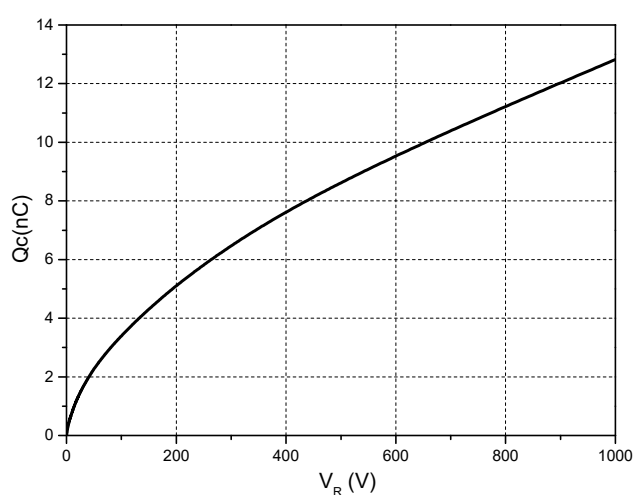
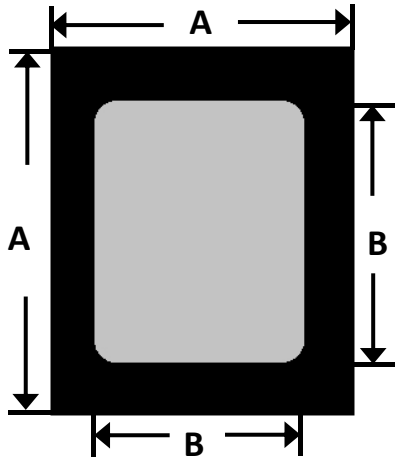


Figure 4. Total Capacitance Charge vs. Reverse Voltage

Chip Dimensions



Symbol	Dimension(mm)
A	1.18
B	0.70