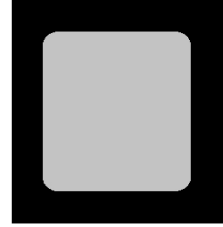


N3D-0650-010

Silicon Carbide Schottky Diode Chip



Part Number	Die Size	Anode	Cathode
SIC-0650-010	1.83 x 1.83 mm ²	Al	Ni/Ag

Maximum Ratings

Symbol	Parameter	Value	Unit	Test Conditions	Note
V _{RRM}	Repetitive Peak Reverse Voltage	650	V		
I _F	Continuous Forward Current	10	A	T _C =150°C	
V _R	DC Peak Blocking Voltage	650	V		
T _J , T _{stg}	Operating Junction and Storage Temperature	-55 to +175	°C		

* R_{θJC}=1.09°C/W

Electrical Characteristics

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
V _F	Forward Voltage	1.45 1.75	1.70 2.00	V	I _F = 10 A T _J =25°C I _F = 10 A T _J =175°C	Figure 1
I _R	Reverse Current	2 40	20 200	μA	V _R = 650 V T _J =25°C V _R = 650 V T _J =175°C	Figure 2
Q _C	Total Capacitive Charge	28		nC	V _R = 400 V, I _F = 10 A, T _J = 25°C Q _C =∫ ₀ ^{V_R} C(V)dV	Figure 4
C	Total Capacitance	550 53 48		pF	V _R = 0 V, T _J = 25°C, f = 1 MHz V _R = 200 V, T _J = 25°C, f = 1 MHz V _R = 400 V, T _J = 25°C, f = 1 MHz	Figure 3
E _C	Capacitance Stored Energy	7.0		μJ	V _R = 400 V	

Mechanical Parameters

Parameter	Typ.	Unit
Die Size	1.83 x 1.83	mm
Anode Pad Size	1.59 x 1.59	mm
Anode Pad Opening	1.37 x 1.37	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

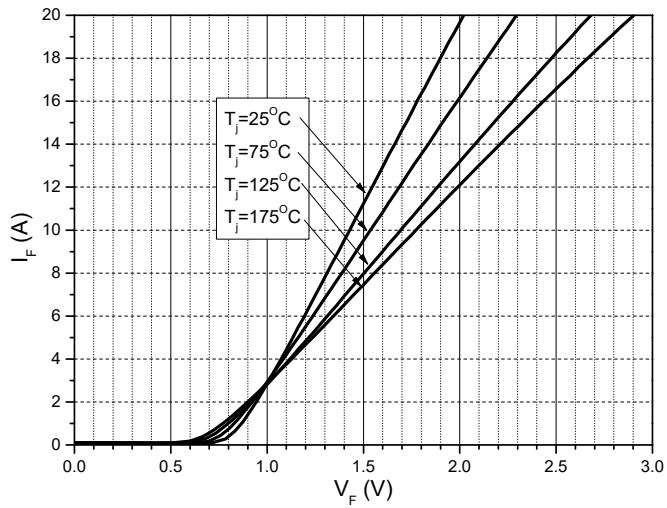


Figure 1. Forward Characteristics

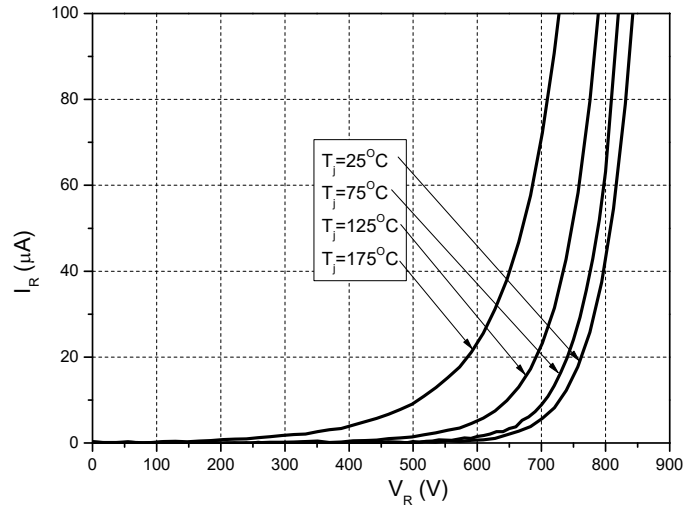


Figure 2. Reverse Characteristics

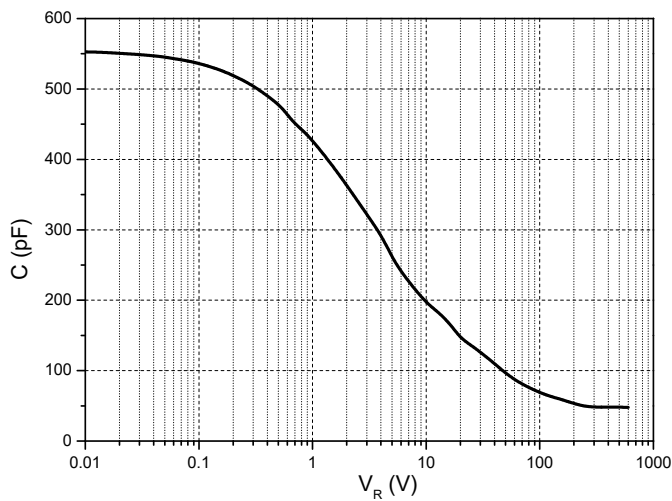


Figure 3. Capacitance vs. Reverse Voltage

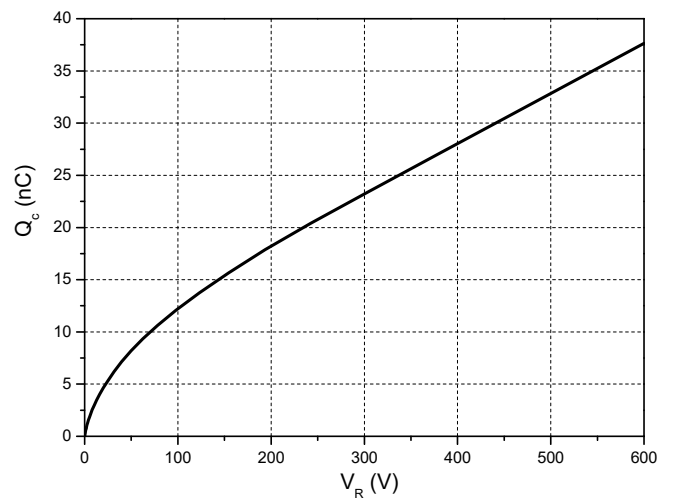
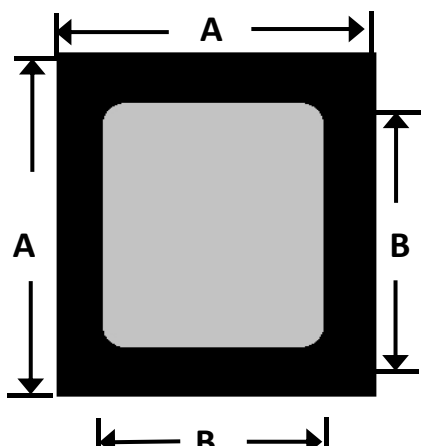


Figure 4. Total Capacitance Charge vs. Reverse Voltage

Chip Dimensions



Symbol	Dimension(mm)
A	1.83
B	1.37