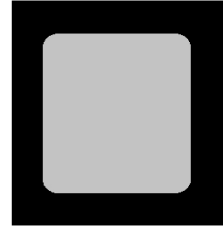


N3D-0650-030

Silicon Carbide Schottky Diode Chip

Part Number	Die Size	Anode	Cathode
SIC-0650-030	3.00x 3.00 mm ²	Al	Ni/Ag



Maximum Ratings ($T_c = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions	Note
V_{RRM}	Repetitive Peak Reverse Voltage	650	V		
I_F	Continuous Forward Current	30	A	$T_C=150^\circ\text{C}$	
V_R	DC Peak Blocking Voltage	650	V		
T_J, T_{stg}	Operating Junction and Storage Temperature	-55 to +175	$^\circ\text{C}$		

Electrical Characteristics

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
V_F	Forward Voltage	1.45 1.95	1.8 2.4	V	$I_F = 30\text{ A } T_J=25^\circ\text{C}$ $I_F = 30\text{ A } T_J=175^\circ\text{C}$	Fig. 1
I_R	Reverse Current	2 40	20 200	μA	$V_R = 650\text{ V } T_J=25^\circ\text{C}$ $V_R = 650\text{ V } T_J=175^\circ\text{C}$	Fig. 2
Q_C	Total Capacitive Charge	85		nC	$V_R = 400\text{ V}, T_J = 25^\circ\text{C}$ $Q_C = \int_0^{V_R} C(V)dV$	Fig. 4
C	Total Capacitance	2050 162 137		pF	$V_R = 0\text{ V}, T_J = 25^\circ\text{C}, f = 1\text{ MHz}$ $V_R = 200\text{ V}, T_J = 25^\circ\text{C}, f = 1\text{ MHz}$ $V_R = 400\text{ V}, T_J = 25^\circ\text{C}, f = 1\text{ MHz}$	Fig. 3
E_C	Capacitance Stored Energy	21		μJ	$V_R = 400\text{ V}$	

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	2.50 x 2.50	mm
Thickness	180 \pm 10%	μm
Wafer Size	150	mm
Anode Metalization (Al)	4	μm
Cathode Metalization (Ni/Ag)	1.5	μm
Frontside Passivation	Polyimide	

Typical Performance

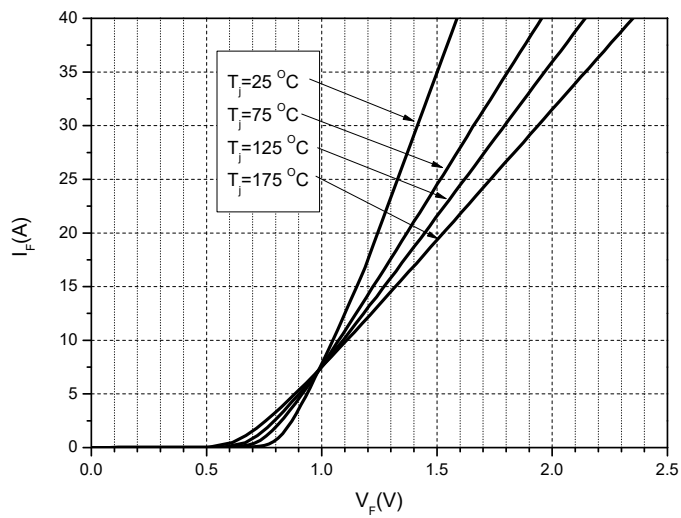


Figure 1. Forward Characteristics

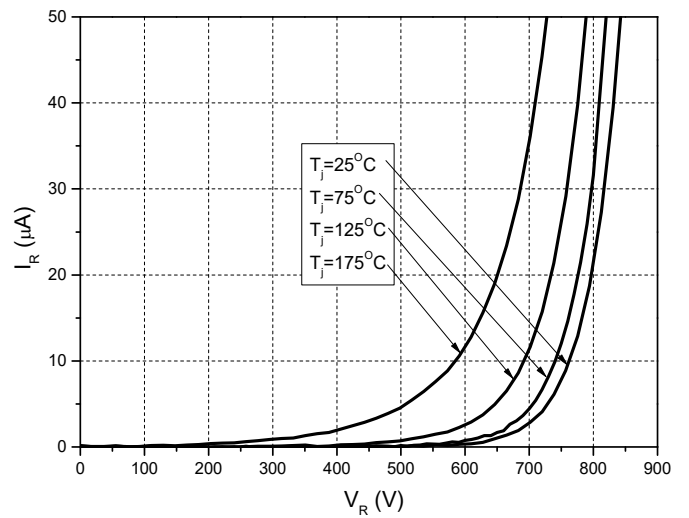


Figure 2. Reverse Characteristics

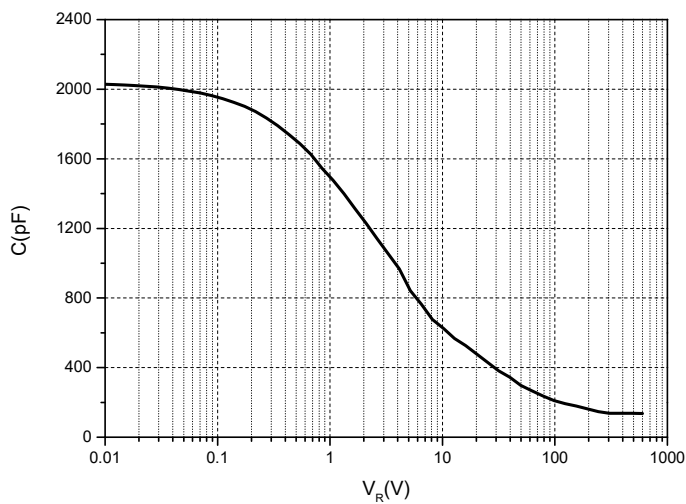


Figure 3. Capacitance vs. Reverse Voltage

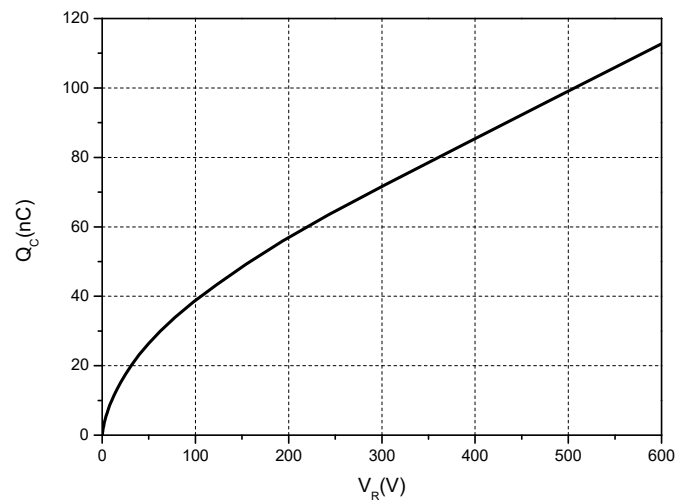
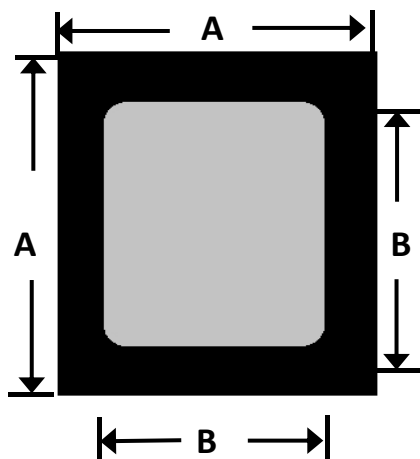


Figure 4. Total Capacitance Charge vs. Reverse Voltage

Chip Dimensions



Symbol	Dimension(mm)
A	3.00
B	2.50