



H3D06065L

Silicon Carbide Schottky Diode Chip

V_{RRM}	=	650	V
$I_{F(AVG)}$	=	6	A
Q_C	=	18	nC

Features

- 650-Volt Schottky Rectifier
- Zero Reverse Recovery
- Zero Forward Recovery
- Positive Temperature Coefficient on V_F
- Temperature-Independent Switching Behavior

Chip Outline



Part Number	Die Size	Anode	Cathode
H3D06065L	1.57×1.57 mm ²	Al	Ni/Ag

Maximum Ratings

Symbol	Parameter	Value	Unit	Test Conditions	Note
V_{RRM}	Repetitive Peak Reverse Voltage	650	V		
V_{DC}	DC Blocking Voltage	650	V		
$I_{F(AVG)}$	Average Forward Current	6	A	$T_C \leq 155^\circ\text{C}$	1
I_{FSM}	Non-Repetitive Forward Surge Current	60	A	$T_C = 25^\circ\text{C}$, $t_p = 8.3\text{ms}$, Half Sine Wave	1
T_J	Operating Junction Temperature	-55 to 175	$^\circ\text{C}$		
1. Assumes Thermal Resistance of 1.6 $^\circ\text{C}/\text{W}$ or less					

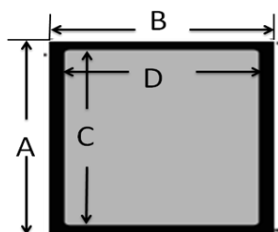
Electrical Characteristics

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
V_F	Forward Voltage	1.4 1.75	1.65 2.3	V	$I_F = 6A, T_J = 25^{\circ}C$ $I_F = 6A, T_J = 175^{\circ}C$	Fig.1
I_R	Reverse Current	1 5	20 100	μA	$V_R = 650V, T_J = 25^{\circ}C$ $V_R = 650V, T_J = 175^{\circ}C$	Fig.2
C	Total Capacitance	300 34 30	/	pF	$V_R = 0V, T_J = 25^{\circ}C, f = 1MHz$ $V_R = 200V, T_J = 25^{\circ}C, f = 1MHz$ $V_R = 400V, T_J = 25^{\circ}C, f = 1MHz$	Fig.3
Q_C	Total Capacitive Charge	18	/	nC	$V_R = 650V, I_F = 6A$ $di/dt = 200A/\mu s, T_J = 25^{\circ}C$	Fig.4

Mechanical Parameters

Parameter	Typ.	Unit
Die Size	1.57×1.57	mm ²
Anode Pad Opening	0.84×0.84	mm ²
Thickness	350±50	μm
Wafer Size	100	mm
Anode Metallization (Al)	4	μm
Cathode Metallization (Ni/Ag)	1.6	μm
Frontside Passivation	Polyimide	

Chip Dimensions



Symbol	Dimension
A	1.57mm
B	1.57mm
C	0.84mm
D	0.84mm

Typical Performance

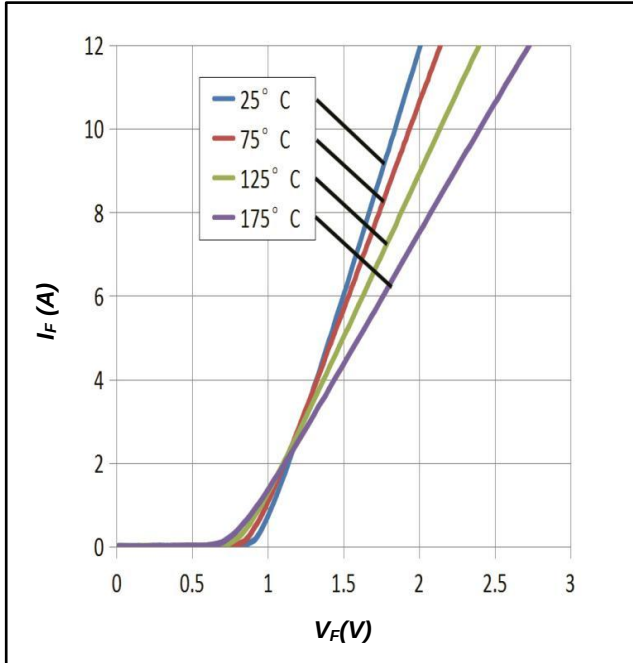


Figure 1. Forward Characteristics

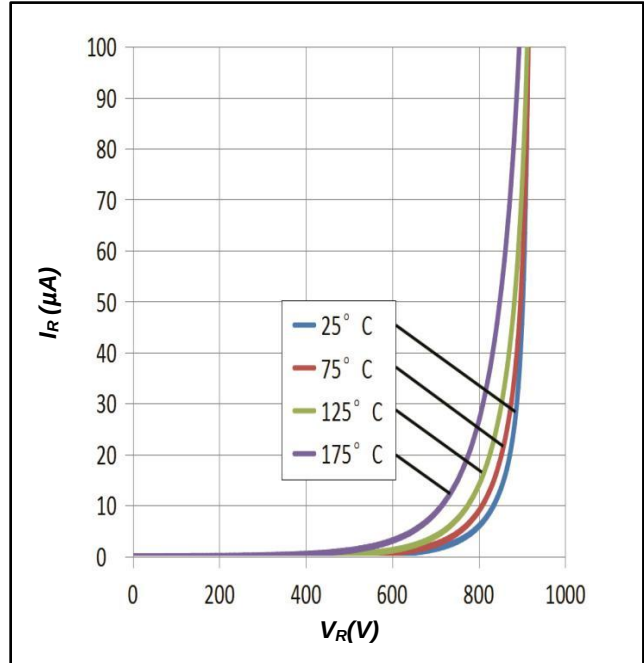


Figure 2. Reverse Characteristics

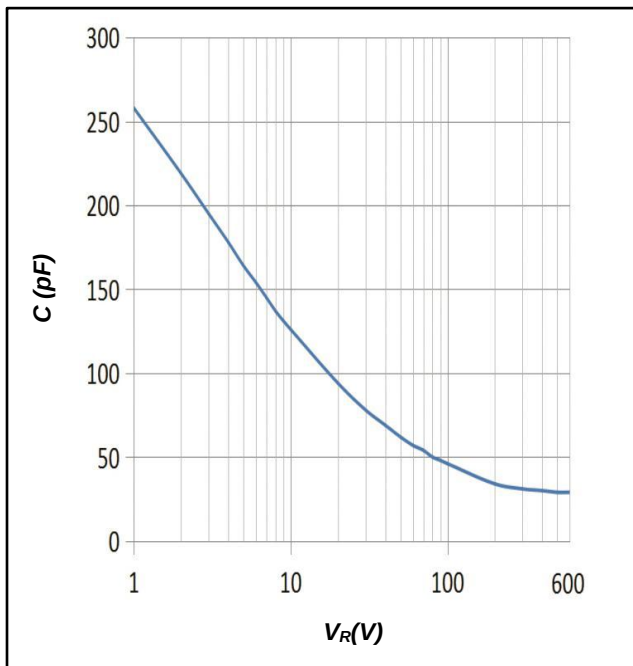


Figure 3. Total Capacitance vs. Reverse Voltage

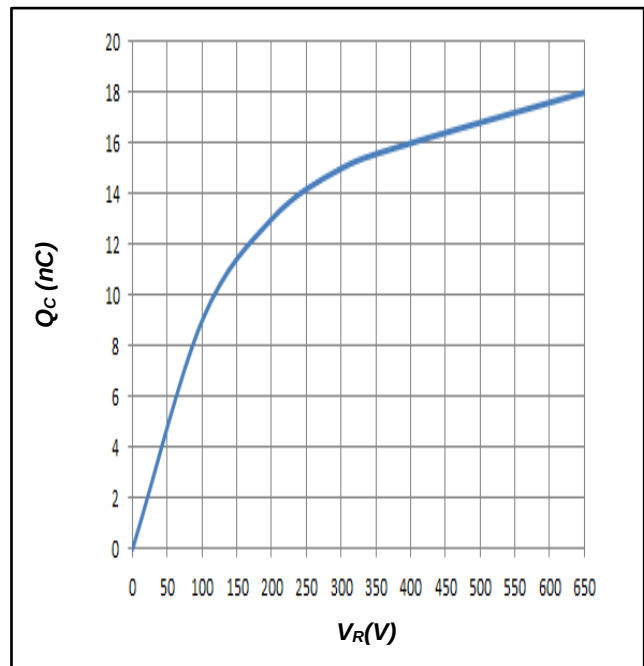


Figure 4. Total Capacitance Charge vs. Reverse Voltage