



H3D02120L

Silicon Carbide Schottky Diode Chip

V_{RRM}	=	1200	V
$I_{F(AVG)}$	=	2	A
Q_C	=	8	nC

Features

- 1200-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
H3D02120L	1.21×1.21 mm ²	Al	Ni/Ag

Maximum Ratings

Symbol	Parameter	Value	Unit	Test Conditions	Note
V_{RRM}	Repetitive Peak Reverse Voltage	1200	V		
V_{DC}	DC Blocking Voltage	1200	V		
$I_{F(AVG)}$	Average Forward Current	2	A	$T_C \leq 164^\circ\text{C}$	1
I_{FSM}	Non-Repetitive Forward Surge Current	20	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 2.5°C/W or less					

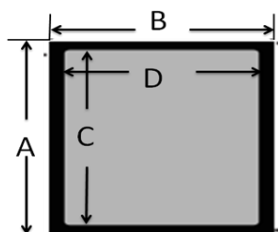
Electrical Characteristics

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
V_F	Forward Voltage	1.55 2.2	1.8 2.5	V	$I_F = 2A, T_J = 25^{\circ}C$ $I_F = 2A, T_J = 175^{\circ}C$	Fig.1
I_R	Reverse Current	2 10	20 200	μA	$V_R = 1200V, T_J = 25^{\circ}C$ $V_R = 1200V, T_J = 175^{\circ}C$	Fig.2
C	Total Capacitance	135 10 8	/	pF	$V_R = 0V, T_J = 25^{\circ}C, f = 1MHz$ $V_R = 400V, T_J = 25^{\circ}C, f = 1MHz$ $V_R = 800V, T_J = 25^{\circ}C, f = 1MHz$	Fig.3
Q_C	Total Capacitive Charge	8	/	nC	$V_R = 800V, I_F = 2A$ $di/dt = 200A/\mu s, T_J = 25^{\circ}C$	Fig.4

Mechanical Parameters

Parameter	Typ.	Unit
Die Size	1.21×1.21	mm ²
Anode Pad Opening	0.72×0.72	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	1.21mm
B	1.21mm
C	0.72mm
D	0.72mm

Typical Performance

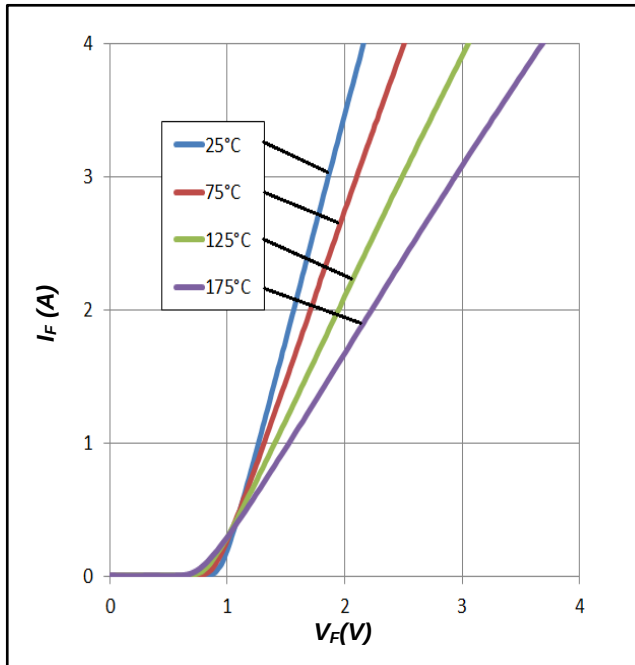


Figure 1. Forward Characteristics

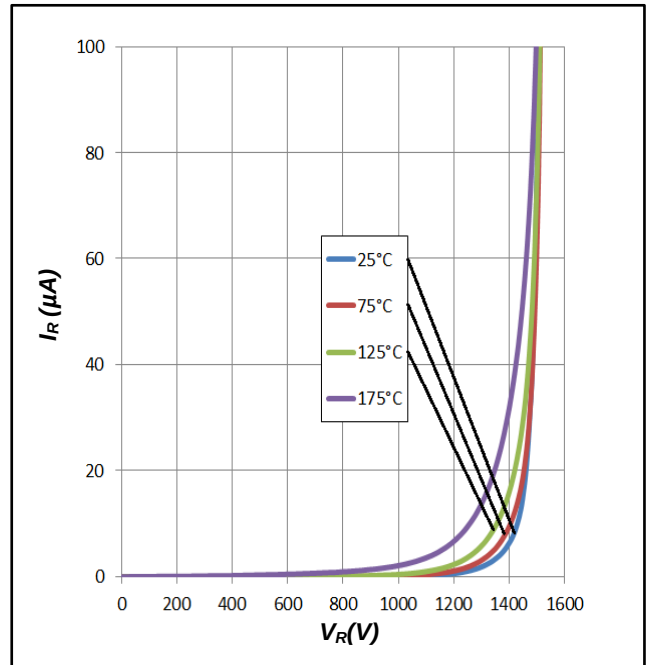


Figure 2. Reverse Characteristics

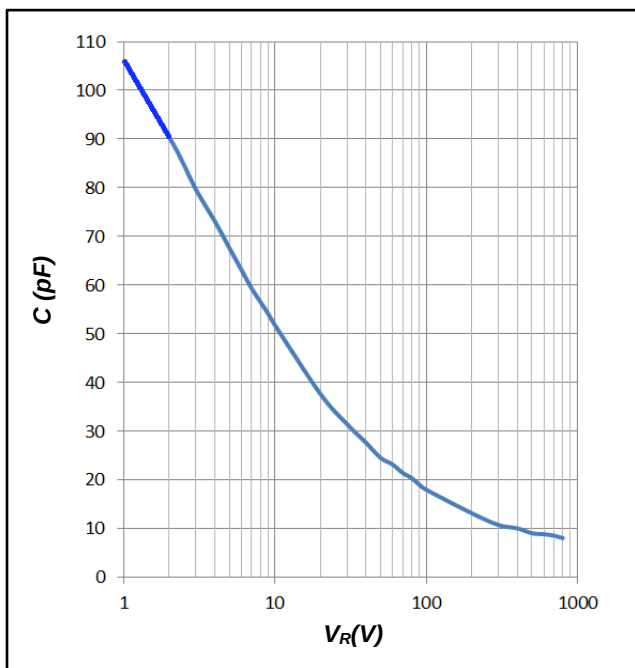


Figure 3. Total Capacitance vs. Reverse Voltage

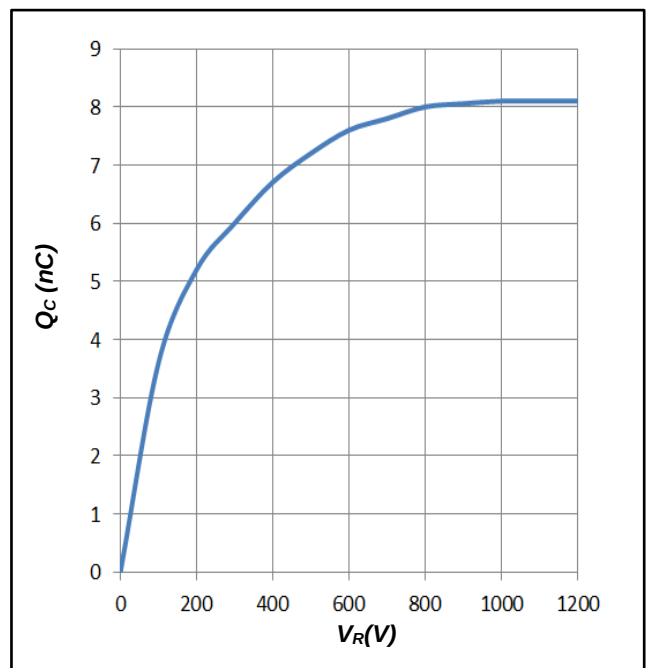


Figure 4. Total Capacitance Charge vs. Reverse Voltage