



NC1D120C20W

NovuSiC® 1200V 20A SiC EJBS™

SiC Schottky Diode Bare die

V_{RRM}	=	1200V
$I_{F(AVG)}$	=	20A
Q_C	=	110nC

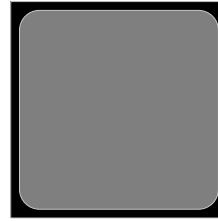
Features

- Zero reverse recovery current / forward recovery voltage
- Low forward voltage (V_F) drop with positive temperature coefficient
- Temperature-Independent switching Behavior

Applications

- PV Inverters
- Charging Piles
- Energy storage systems
- Industrial power supply
- Industrial Motors
- Automotive electronics

Chip Outline



Part Number	NC1D120C20W
Die Size	3.10 * 3.10 mm ²
Anode	Al
Cathode	Ti/Ni/Ag

Maximum Ratings @Tc=25°C (unless otherwise specified)

Parameter	Symbol	Test Conditions	Values	Unit
Repetitive Peak Reverse Voltage	V_{RRM}		1200	V
Surge Peak Reverse Voltage	V_{RSM}		1300	V
DC Peak Reverse Voltage	V_R		1200	V
Continuous Forward Current *1	I_F	$T_j=175^{\circ}\text{C}$	20	A
Repetitive Peak Forward Surge Current *1	I_{FRM}	$T_C=25^{\circ}\text{C}$, $t_p=10\text{ms}$, half sine wave, 0.1Hz	200	A
Non-Repetitive Forward Surge Current *1	I_{FSM}	$T_C=25^{\circ}\text{C}$, $t_p=10\text{ms}$, half sine pulse	220	A
Operating Junction Range	T_j		-55 to +175	°C
Storage Temperature Range	T_{stg}		-55 to +175	°C
Maximum Processing Temperature	T_{Proc}	10 min. maximum	325	°C

*1. Assumes $R_{\theta JC}$ Thermal Resistance of 0.62°C/W or less



Electrical Characteristics @Tc=25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Forward Voltage	V _F	I _F =20A, T _j =25°C	-	1.37	1.60	V
		I _F =20A, T _j =175°C	-	1.90	2.50	
Reverse Current	I _R	V _R =1200V, T _j =25°C	-	5	50	μA
		V _R =1200V, T _j =175°C	-	30	200	
Total Capacitive Charge	Q _c	V _R =800V, T _j =25°C	-	110	-	nC
Total Capacitance	C	V _R =0V, f=1MHz	-	1371	-	pF
		V _R =400V, f=1MHz	-	104	-	
		V _R =800V, f=1MHz	-	79	-	

Mechanical Parameters

Parameter	Typ.	Unit
Die Size	3.10 x 3.10	mm
Anode Pad Size	2.78 x 2.78	mm
Anode Pad Opening	2.23 x 2.23	mm
Thickness	160 ±15	μm
Wafer Size	150	mm
Anode Metalization (Al)	4	μm
Cathode Metalization (Ti/Ni/Ag)	2.5	μm
Frontside Passivation	Polymide	



Typical Performance

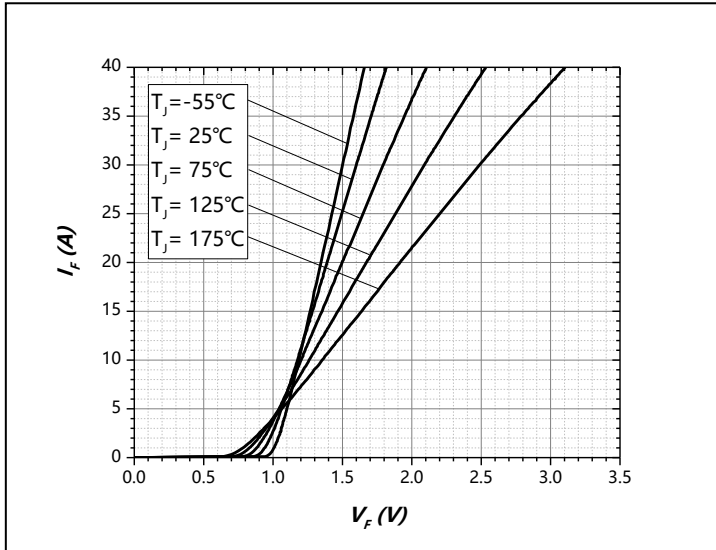


Figure 1. Forward Characteristics

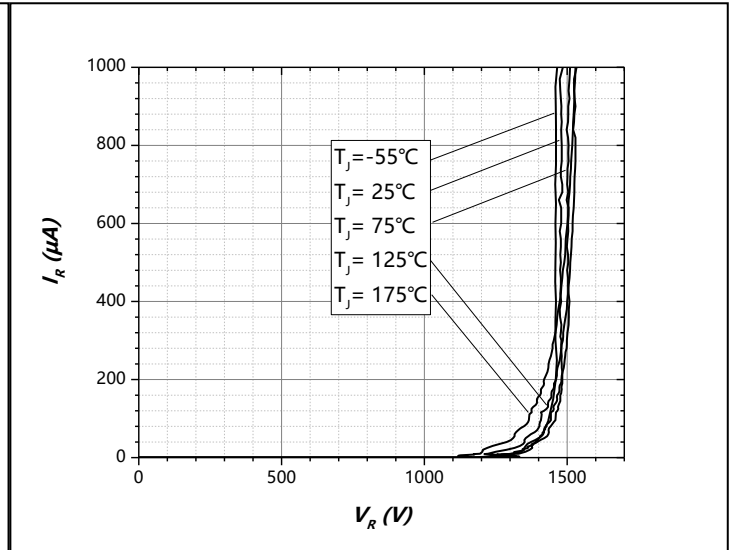


Figure 2. Reverse Characteristics

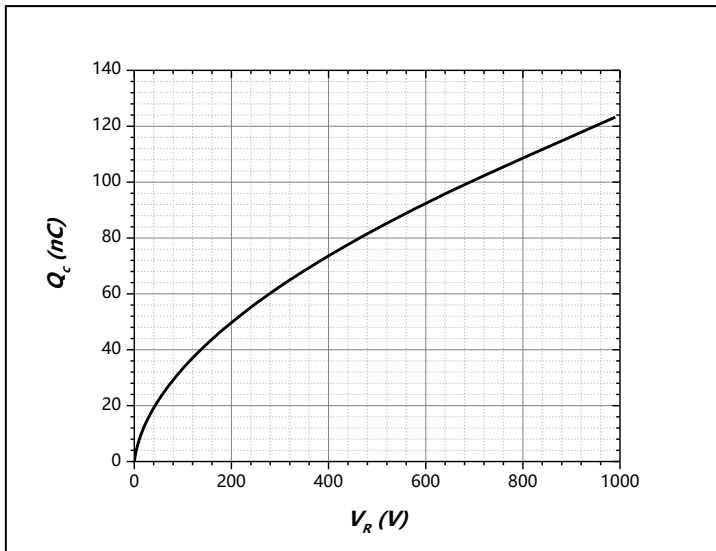


Figure 3. Total Capacitance Charge vs. Reverse Voltage

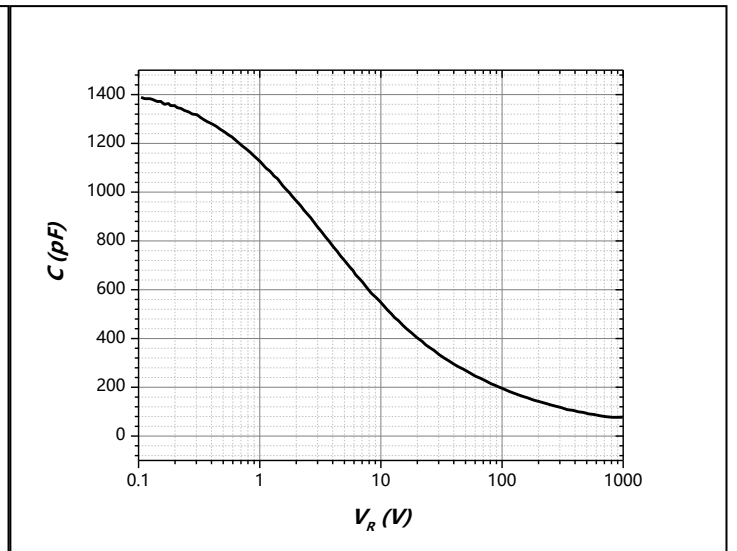
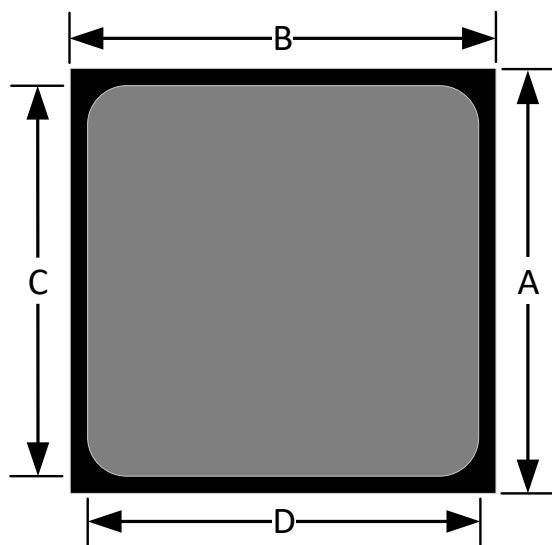


Figure 4. Capacitance vs. Reverse Voltage

Chip Dimensions



Symbol	Dimension	
	mm	inch
A	3.10	0.122
B	3.10	0.122
C	2.23	0.088
D	2.23	0.088

Revision History

Revision	Date	Subjects (major changes since last revision)
1.0	06 Mar. 2023	Official first release
1.1	29 Mar. 2023	Anode pad size change

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