



# NC1D120C10W

## NovuSiC® 1200V 10A SiC EJBS™

### SiC Schottky Diode Bare die

$V_{RRM}$	=	1200V
$I_{F(AVG)}$	=	10A
$Q_C$	=	55nC

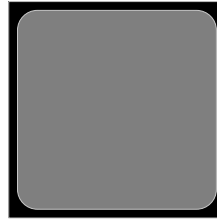
#### Features

- 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	NC1D120C10W
Die Size	2.29 * 2.29 mm <sup>2</sup>
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	$I_F$	$T_j=175^{\circ}\text{C}$	10	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	100	A
Non-Repetitive Forward Surge Current *1	$I_{FSM}$	$T_C=25^{\circ}\text{C}$ , $t_p=10\text{ms}$ , half sine pulse	118	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 0.72°C/W or less



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

Parameter	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =10A, T <sub>j</sub> =25°C	-	1.39	1.60	V
		I <sub>F</sub> =10A, T <sub>j</sub> =175°C	-	1.97	2.50	
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =1200V, T <sub>j</sub> =25°C	-	3	35	μA
		V <sub>R</sub> =1200V, T <sub>j</sub> =175°C	-	20	200	
Total Capacitive Charge	Q <sub>c</sub>	V <sub>R</sub> =800V, T <sub>j</sub> =25°C	-	55	-	nC
Total Capacitance	C	V <sub>R</sub> =0.1V, f=1MHz	-	670	-	pF
		V <sub>R</sub> =400V, f=1MHz	-	53	-	
		V <sub>R</sub> =800V, f=1MHz	-	43	-	

## Mechanical Parameters

Parameter	Typ.	Unit
Die Size	2.29 x 2.29	mm
Anode Pad Size	1.97 x 1.97	mm
Anode Pad Opening	1.42 x 1.42	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

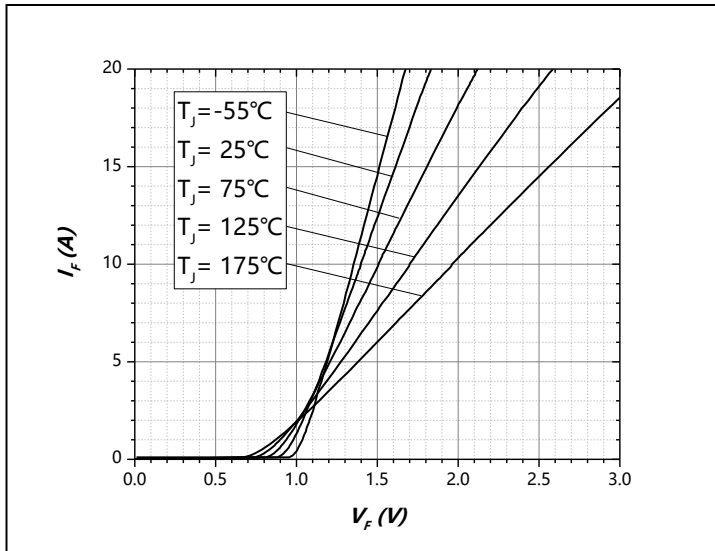


Figure 1. Forward Characteristics

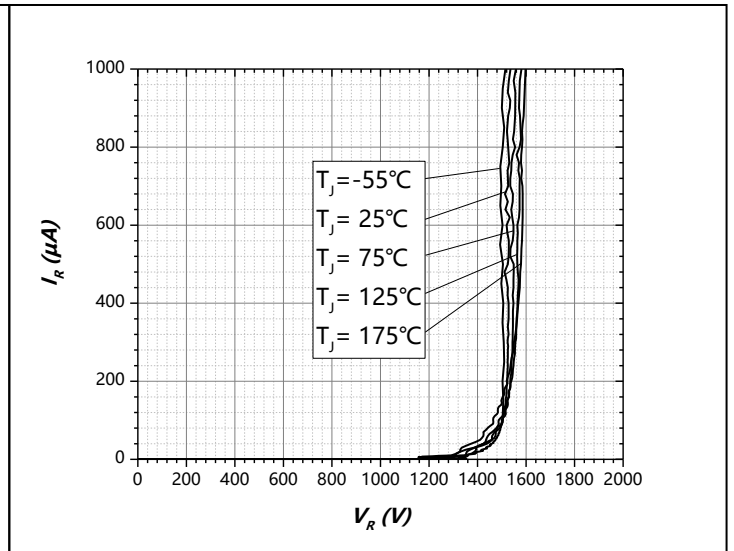


Figure 2. Reverse Characteristics

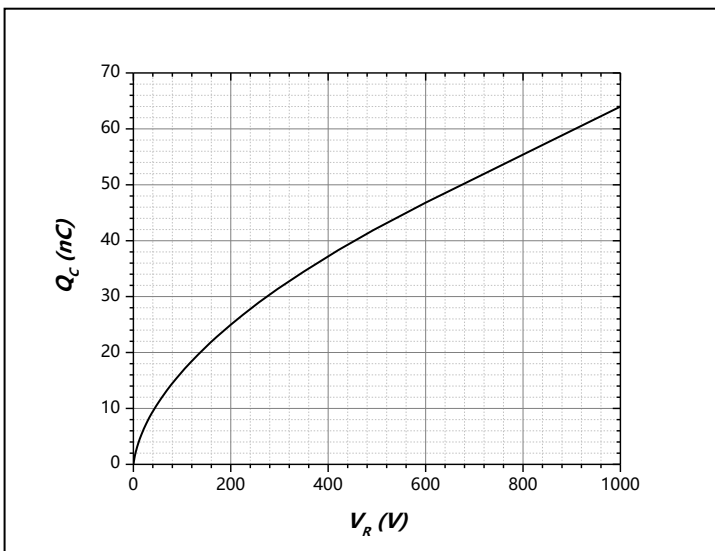


Figure 3. Total Capacitance Charge vs. Reverse Voltage

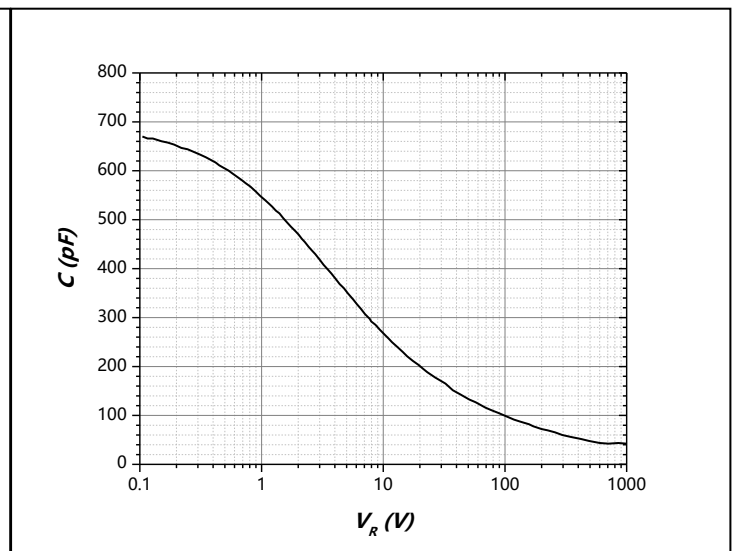
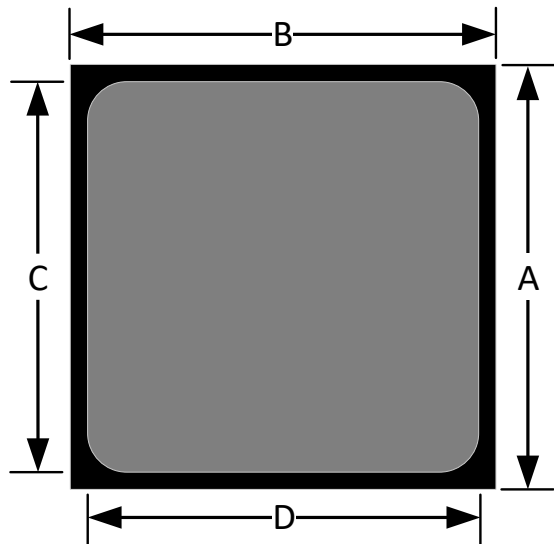


Figure 4. Capacitance vs. Reverse Voltage

## Chip Dimensions



Symbol	Dimension	
	mm	inch
A	2.29	0.090
B	2.29	0.090
C	1.42	0.056
D	1.42	0.056

## Revision History

Revision	Date	Subjects (major changes since last revision)
1.0	29 Mar. 2023	Official first release

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