



# NC1D120C30W

## NovuSiC® 1200V 30A SiC EJBST™

### SiC Schottky Diode Bare die

$V_{RRM}$	=	1200V
$I_{F(AVG)}$	=	30A
$Q_C$	=	160nC

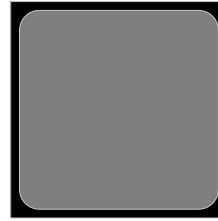
#### Features

- 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	NC1D120C30W
Die Size	3.70 * 3.70 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	$I_F$	$T_j=175^{\circ}\text{C}$	30	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	250	A
Non-Repetitive Forward Surge Current *1	$I_{FSM}$	$T_C=25^{\circ}\text{C}$ , $t_p=10\text{ms}$ , half sine pulse	270	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 0.37°C/W or less

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

Parameter	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Forward Voltage	$V_F$	$I_F=20A, T_j=25^{\circ}C$	-	1.41	1.60	V
		$I_F=20A, T_j=175^{\circ}C$	-	2.00	2.50	
Reverse Current	$I_R$	$V_R=1200V, T_j=25^{\circ}C$	-	11	85	$\mu A$
		$V_R=1200V, T_j=175^{\circ}C$	-	55	300	
Total Capacitive Charge	$Q_c$	$V_R=800V, T_j=25^{\circ}C$	-	160	-	nC
Total Capacitance	C	$V_R=0.1V, f=1MHz$	-	2125	-	pF
		$V_R=400V, f=1MHz$	-	146	-	
		$V_R=800V, f=1MHz$	-	116	-	

## Mechanical Parameters

Parameter	Typ.	Unit
Die Size	3.70 x 3.70	mm
Anode Pad Size	3.38 x 3.38	mm
Anode Pad Opening	2.83 x 2.83	mm
Thickness	175 ±15	$\mu m$
Wafer Size	150	mm
Anode Metalization (Al)	4	$\mu m$
Cathode Metalization (Ti/Ni/Ag)	2.5	$\mu m$
Frontside Passivation	Polymide	



## Typical Performance

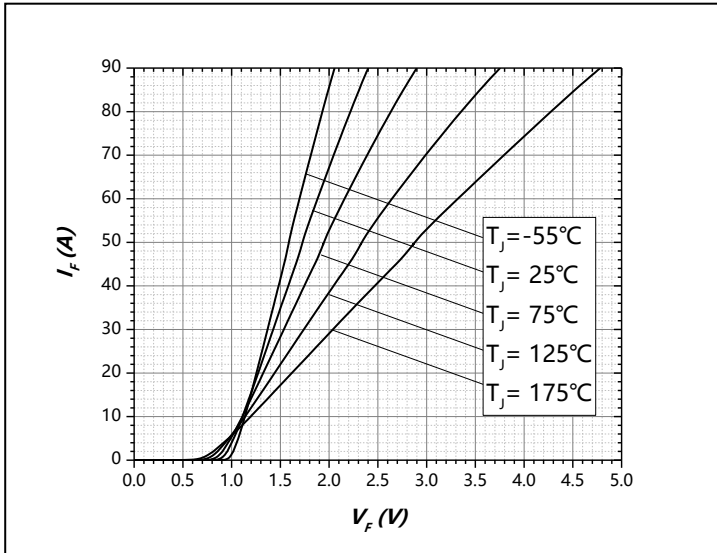


Figure 1. Forward Characteristics

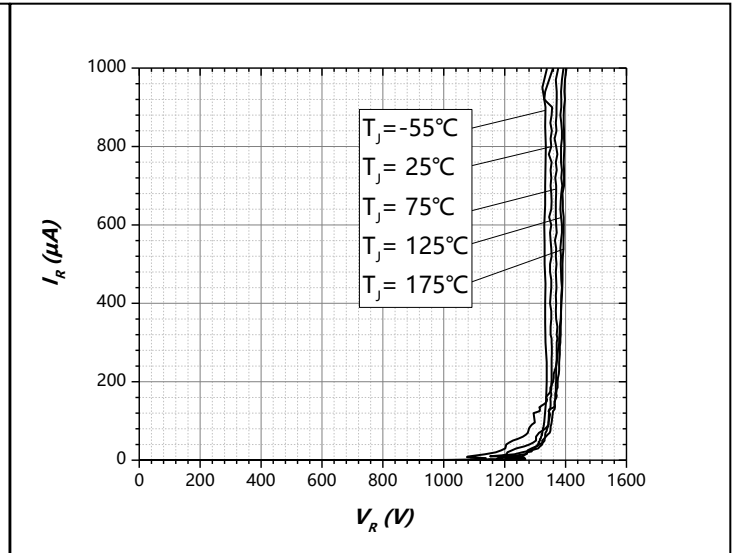


Figure 2. Reverse Characteristics

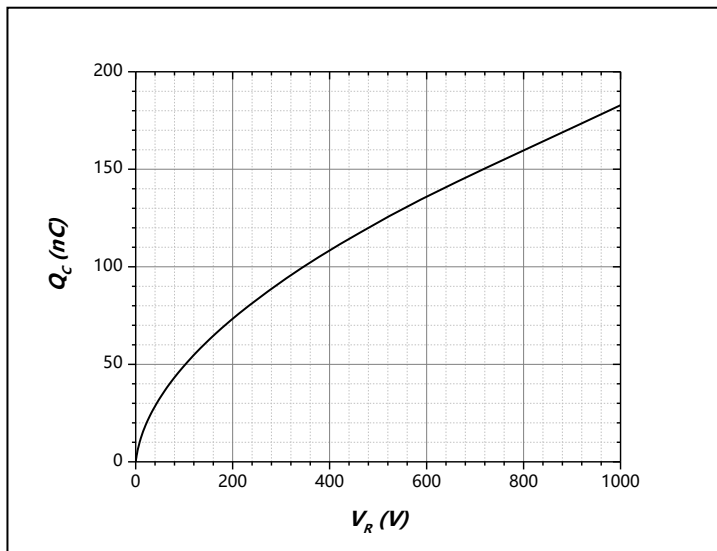


Figure 3. Total Capacitance Charge vs. Reverse Voltage

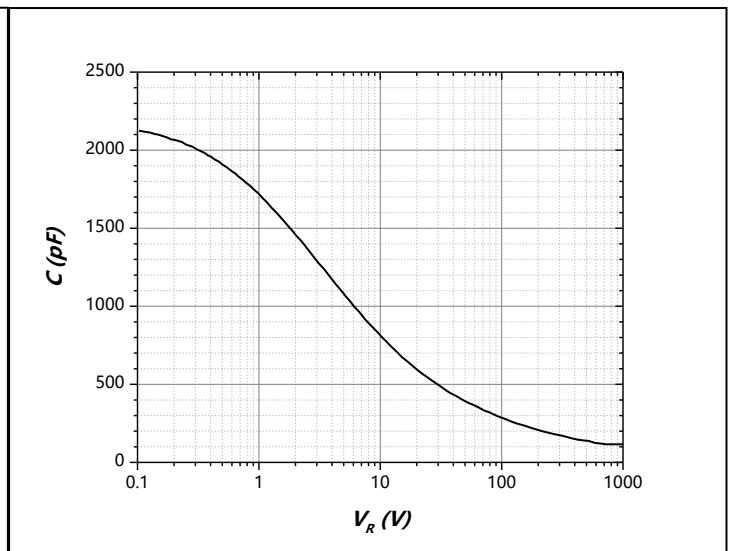
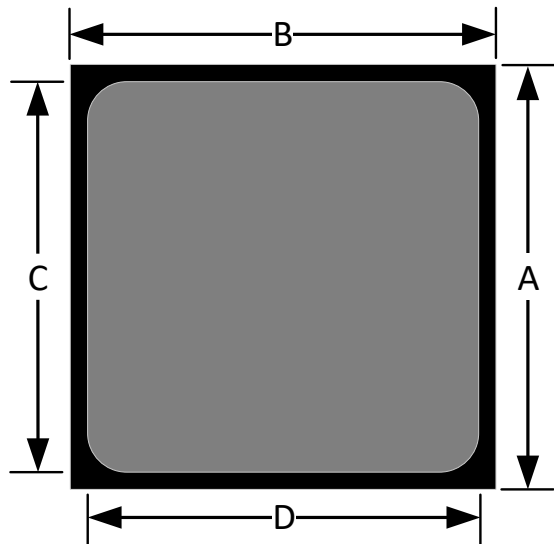


Figure 4. Capacitance vs. Reverse Voltage

## Chip Dimensions



Symbol	Dimension	
	mm	inch
A	3.70	0.146
B	3.70	0.146
C	2.83	0.111
D	2.83	0.111

## Revision History

Revision	Date	Subjects (major changes since last revision)
1.0	06 Mar. 2023	Official first release

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