

## 1200V/100A

### SiC Schottky Barrier Diode

#### Characteristic

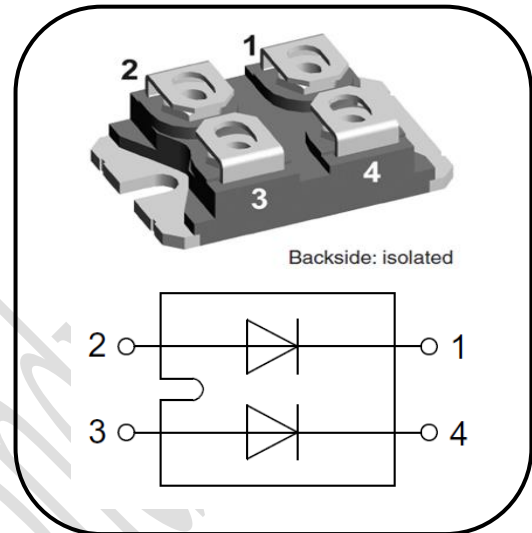
- Zero Reverse Recovery Current
- Ceramic Package Provides 2.5kV Isolation
- Positive temperature coefficient
- Temperature-independent performance
- High-speed switching
- Low switching loss
- Low heat dissipation requirements

#### Application

- Anti-Parallel diode
- Uninterruptible Power Supply (UPS)
- Induction heating
- Welding equipment

#### Product Description

$V_{RRM}$	1200	V
$I_F(110^\circ\text{C})$	117	A
$Q_C$	539	nC



Device	Package	Marking
SLS120J100A	SOT-227	SLS120J100A

#### Absolute Maximum Ratings (per leg)

Parameter	Symbol	Value	Unit	Test Conditions
Reverse voltage (Repetitive peak)	$V_{RRM}$	1200	V	$T_C=25^\circ\text{C}$
Reverse Voltage (Surge peak)	$V_{RSM}$	1200		$T_C=25^\circ\text{C}$
Reverse voltage (DC)	$V_{DC}$	1200		$T_C=25^\circ\text{C}$
Continuous forward current	$I_F$	195	A	$T_C=25^\circ\text{C}$
		117		$T_C=110^\circ\text{C}$
		100		$T_C=128^\circ\text{C}$
Surge non-repetitive forward current	$I_{FSM}$	800	A	$T_C=25^\circ\text{C}, t_p=10\text{ms}, \text{half Sine Pulse}$
Total power dissipation	$P_{TOT}$	535	W	$T_C=25^\circ\text{C}$
$i^2t$ value	$\int i^2 dt$	3200	$\text{A}^2\text{s}$	$T_C=25^\circ\text{C}, t_p=10\text{ms}$
Virtual junction temperature	$T_{VJ}$	-40~175	$^\circ\text{C}$	
Operation temperature	$T_{OP}$	-40~150	$^\circ\text{C}$	
Storage temperature	$T_{stg}$	-40~150	$^\circ\text{C}$	
Mounting Torque	M	1.1	Nm	M4 Screw

### Thermal Characteristics (per leg)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Thermal resistance	$R_{th(j-c)}$	/	0.28	/	°C/W	

### Electrical Characteristics (per leg) $T_j=25^\circ\text{C}$

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
DC blocking voltage	$V_{DC}$	1200	/	/	V	$I_R=200\ \mu\text{A}$
Forward voltage	$V_F$	/	1.40	1.60	V	$I_F=100\text{A}, T_j=25^\circ\text{C}$
		/	1.90	2.30		$I_F=100\text{A}, T_j=175^\circ\text{C}$
Reverse current	$I_R$	/	20	300	$\mu\text{A}$	$V_R=1200\text{V}, T_j=25^\circ\text{C}$
		/	100	1600		$V_R=1200\text{V}, T_j=175^\circ\text{C}$
Total capacitance	C	/	7821	/	pF	$V_R=0\text{V}, f=1\text{MHz}$
		/	503	/		$V_R=400\text{V}, f=1\text{MHz}$
		/	375	/		$V_R=800\text{V}, f=1\text{MHz}$
Total capacitive charge	$Q_C$	/	539	/	nC	$V_R=800\text{V}$
Capacitance Stored Energy	$E_C$	/	154	/	$\mu\text{J}$	$V_R=800\text{V}$

### Typical Electrical Characteristics Curves

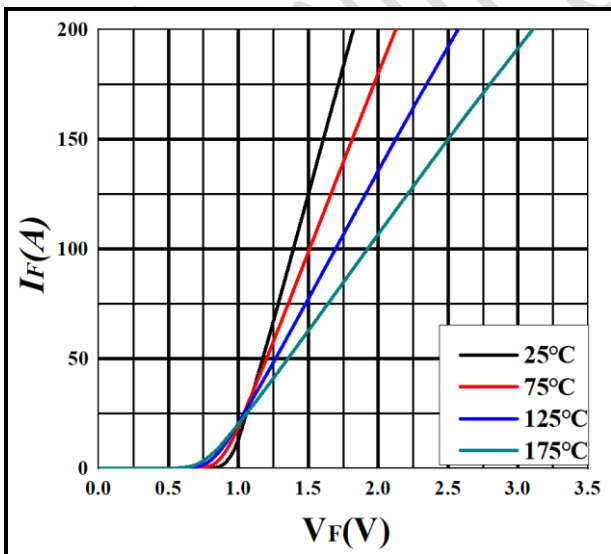


Figure 1. Forward Characteristics

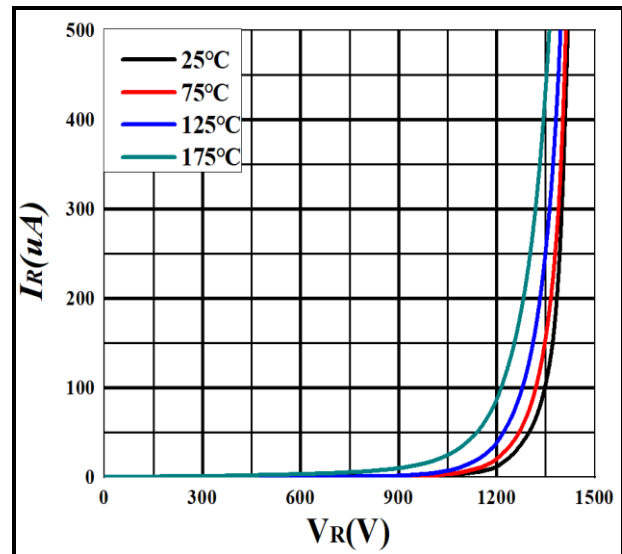


Figure 2. Reverse Characteristics

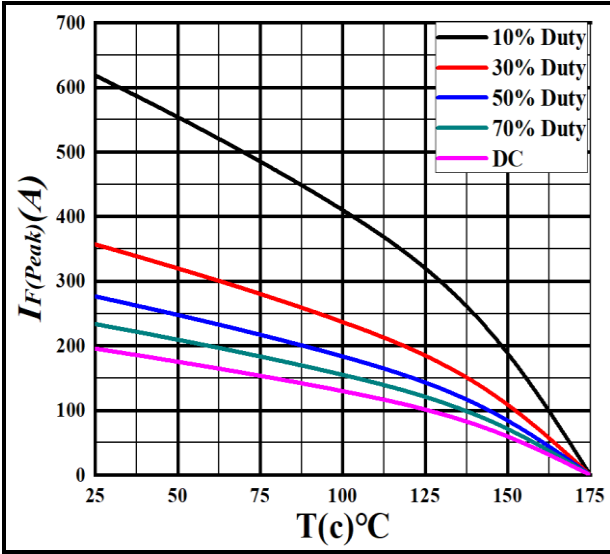


Figure 3. Current Derating

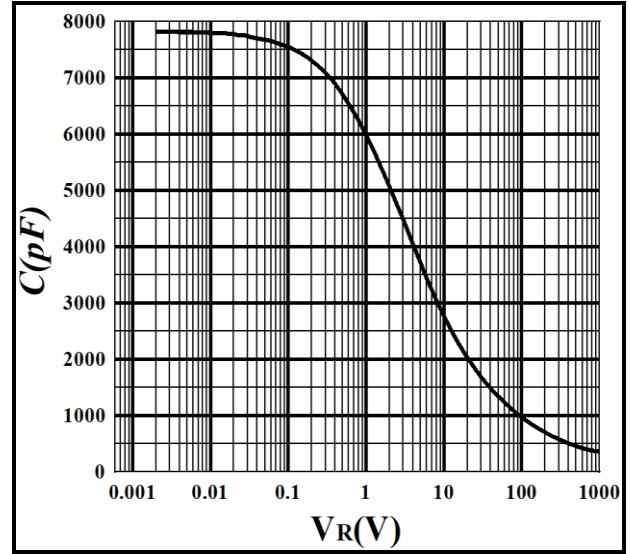


Figure 4. Capacitance vs. Reverse Voltage

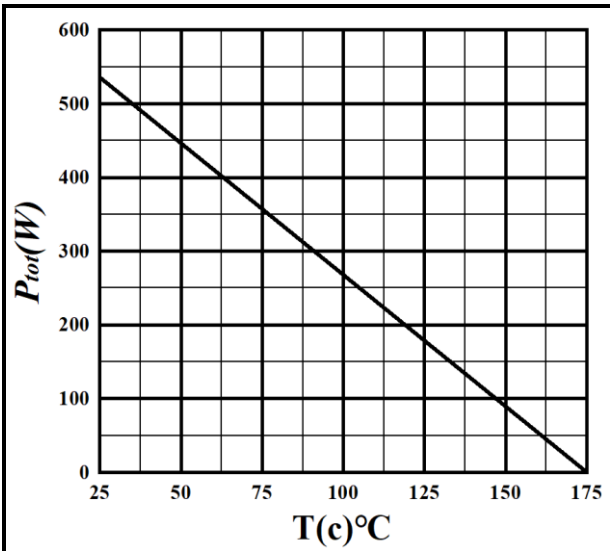


Figure 5. Power Derating

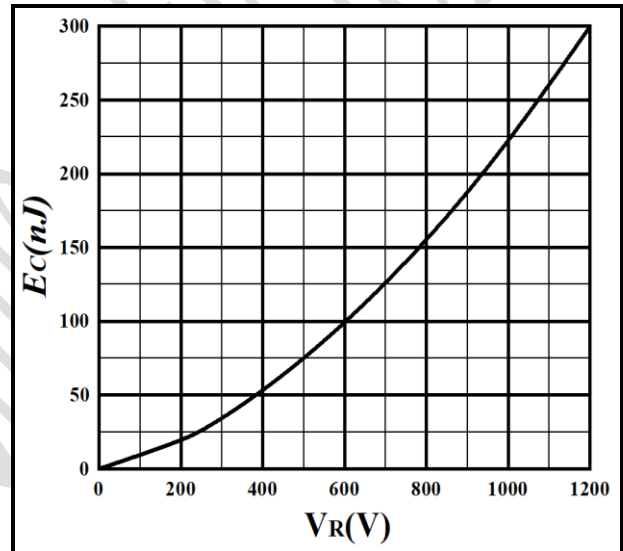


Figure 6. Capacitance Stored Energy

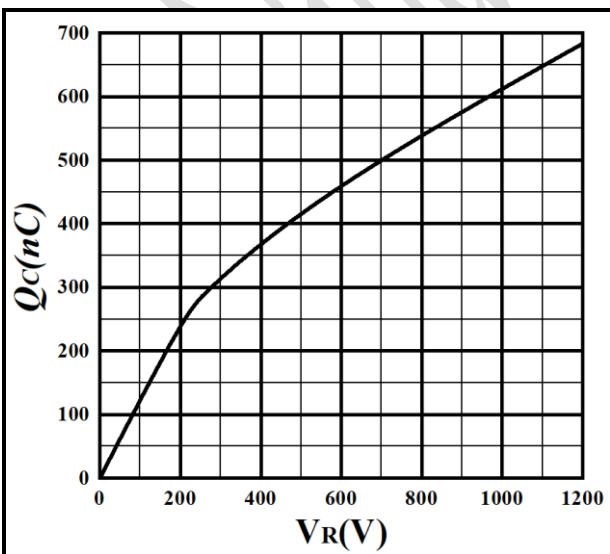
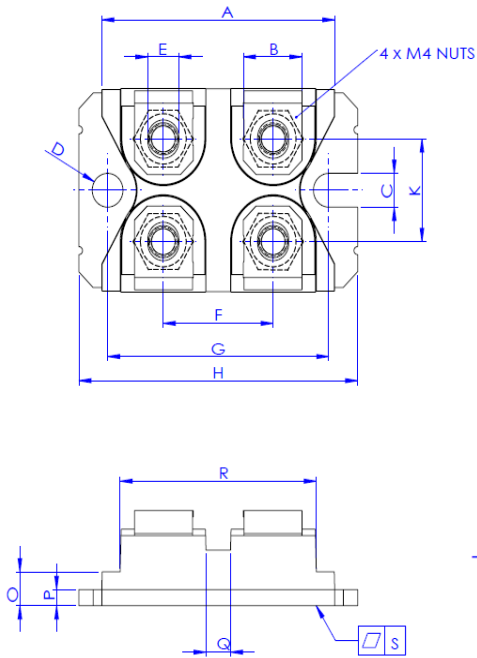


Figure 7. Total Capacitance Charge vs. Reverse Voltage

## Package



SYMBOL	mm		
	MIN	NOM	MAX
A	31.50	31.80	32.10
B	7.70	8.00	8.30
C	4.10	4.20	4.30
D	4.10	4.20	4.30
E	4.10	4.24	4.30
F	14.90	15.00	15.15
G	29.80	30.20	30.50
H	37.80	38.00	38.30
I	11.70	11.82	12.20
J	0.75	0.80	0.85
K	12.50	12.75	13.00
M	25.00	25.75	25.50
N	6.70	6.90	7.05
O	4.10	4.20	4.50
P	1.90	2.00	2.10
Q	3.20	3.36	3.60
R	26.60	26.78	27.00
S	-0.03	0.05	0.10

## Ordering information

Part Number	SLS120J100A-ISBTH
Package	SOT-227
Unit Quantity	240EA
Packing Type	Tube
RoHS	Yes