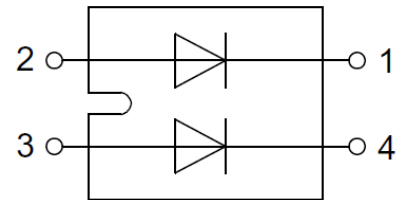


3rd Generation 650V/100A SiC Schottky Barrier Diode

Features

- 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
- RoHS compliant



Package Type: SOT-227

Potential Applications

- Solar inverter
- Uninterruptible Power Supply (UPS)
- Switched-mode power supplies
- Welding equipment
- High speed rectifier



Description

The SLS065J100A SiC Schottky Barrier Diode (SBD) Module has been developed using Sanan’s advanced 3rd generation SiC SBD technology with the highest performance and reliability. It registers higher efficiency, higher operation temperature and lower loss and can be operated at higher frequency than Si-based solutions. As to the Schottky structure, it shows no recovery at turn-off and allows a low leakage current with reverse voltage up to 650V. It can contribute to system miniaturization and achieve lightweight system design. Using RoHS compliant components, it is qualified for use in industrial application.

Product Specifications

Device	V _{RRM}	I _F (110°C)	V _F (25°C)	Q _c	Marking
SLS065J100A	650V	103A	1.45V	275nC	SLS065J100A

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Table 1. Maximum Ratings

(T_c = 25°C, unless otherwise specified)

Parameter	Symbol	Value	Unit	Test conditions
Repetitive peak reverse voltage	V _{RRM}	650	V	T _C = 25°C
Surge peak reverse voltage	V _{RSM}	650		T _C = 25°C
DC reverse voltage	V _{DC}	650		T _C = 25°C
Continuous forward current	I _F	164	A	T _C = 25°C
		103		T _C = 110°C
		100		T _C = 114°C
Surge non-repetitive forward current	I _{FSM}	700	A	T _C = 25°C, t _p = 10ms, half sine pulse
Power dissipation	P _{tot}	394	W	T _C = 25°C
i ² t value	∫i ² dt	2450	A ² s	T _C = 25°C, t _p = 10ms
Virtual junction temperature	T _{VJ}	-40~175	°C	
Operation temperature	T _{OP}	-40~150	°C	
Storage temperature	T _{stg}	-40~150	°C	
Mounting torque	M	1.1	Nm	M4 screw

Table 2. Thermal Resistance

Parameter	Symbol	Values			Unit	Test condition
		Min.	Typ.	Max.		
Thermal resistance from junction to case	R _{th(j-c)}	/	0.38	/	°C/W	

Table 3. Static Electrical Characteristics

(T_j = 25°C, unless otherwise specified)

Parameter	Symbol	Values			Unit	Test conditions
		Min.	Typ.	Max.		
DC blocking voltage	V _{DC}	650	/	/	V	I _R = 200 μA
Forward voltage	V _F	/	1.45	1.70	V	I _F = 100A, T _j = 25°C
		/	1.70	2.30		I _F = 100A, T _j = 175°C
Reverse current	I _R	/	10	200	μA	V _R = 650V, T _j = 25°C
		/	60	1200		V _R = 650V, T _j = 175°C

Table 4. Dynamic Electrical Characteristics

(T_j = 25°C, unless otherwise specified)

Parameter	Symbol	Values			Unit	Test conditions
		Min.	Typ.	Max.		
Total capacitance	C	/	5089	/	pF	V _R = 0V, f = 1MHz
		/	520	/		V _R = 200V, f = 1MHz
		/	443	/		V _R = 400V, f = 1MHz
Total capacitive charge	Q _C	/	275	/	nC	V _R = 400V
Capacitance stored energy	E _C	/	41	/	μJ	V _R = 400V

Electrical Characteristic Diagrams

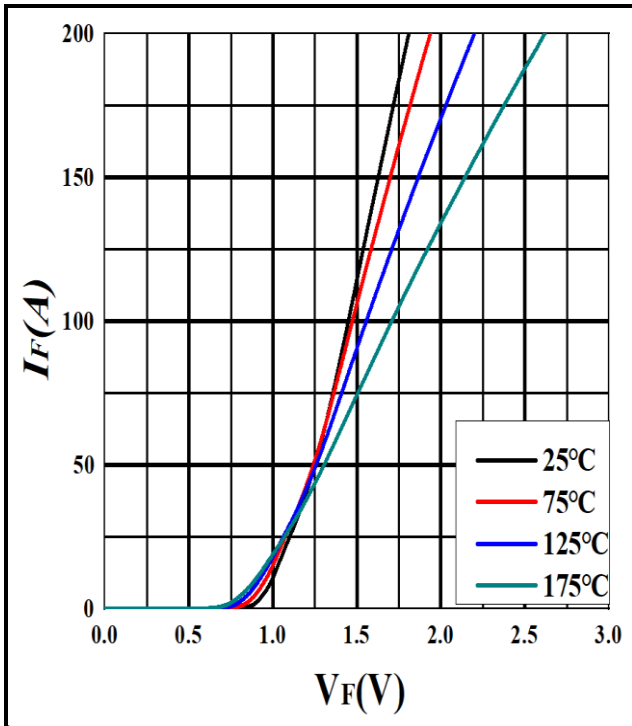


Figure 1. Forward characteristics

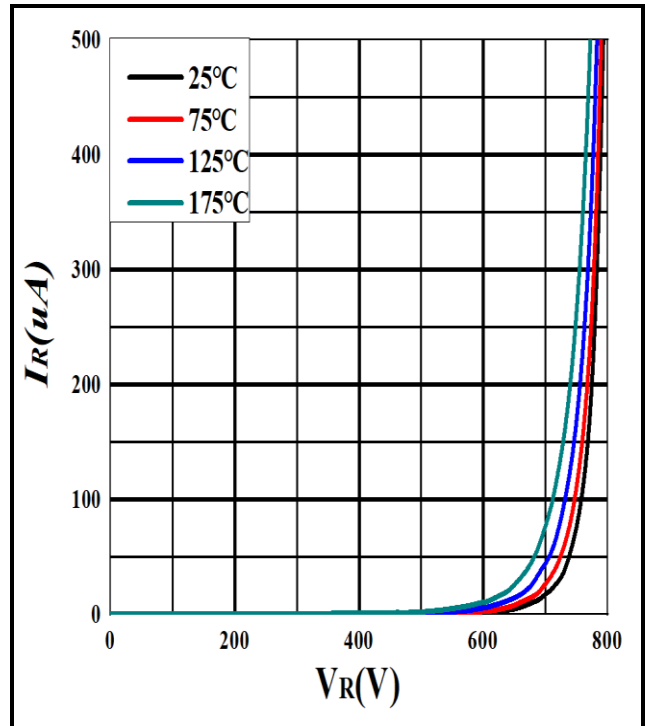


Figure 2. Reverse characteristics

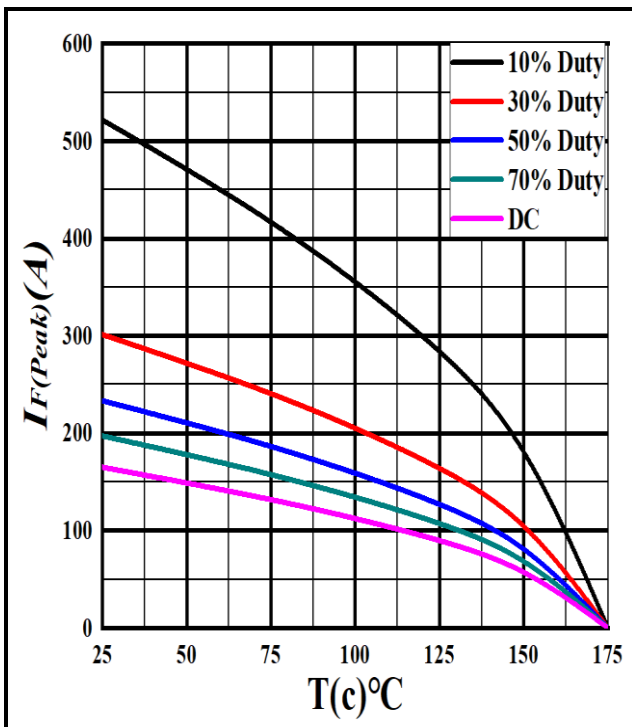


Figure 3. Current derating

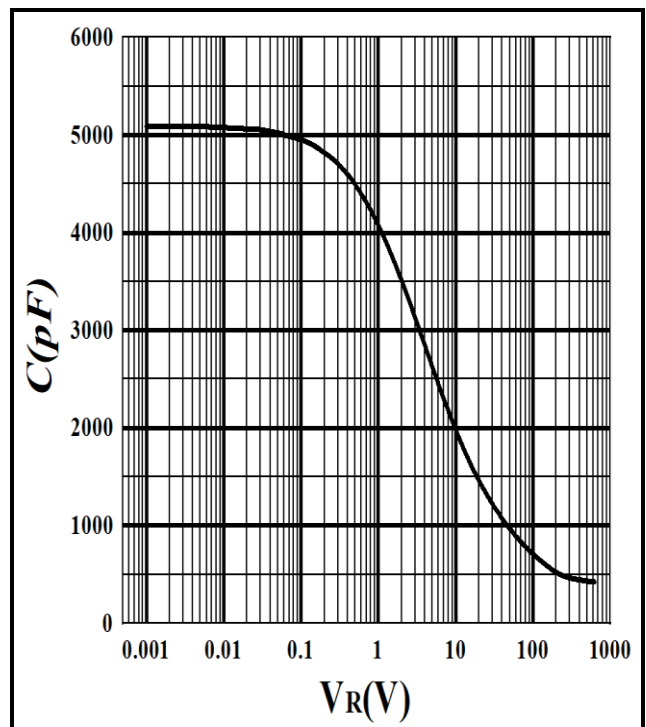


Figure 4. Capacitance vs. reverse voltage

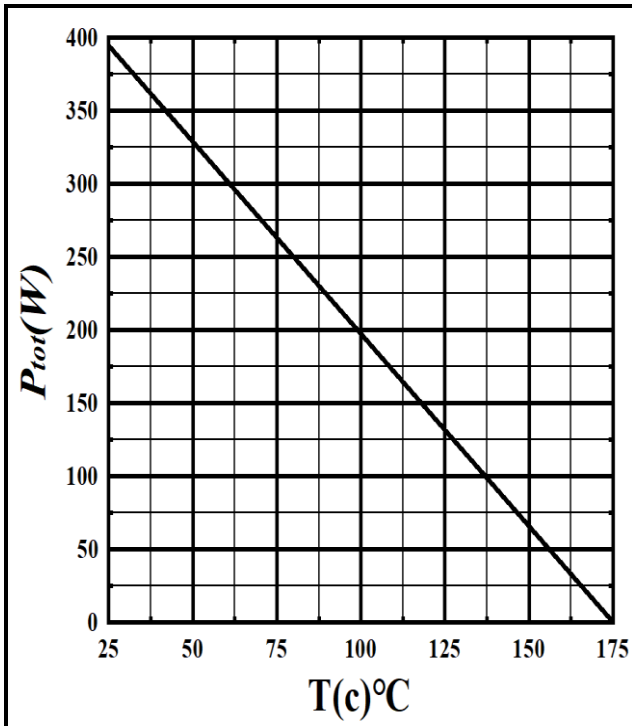


Figure 5. Power derating

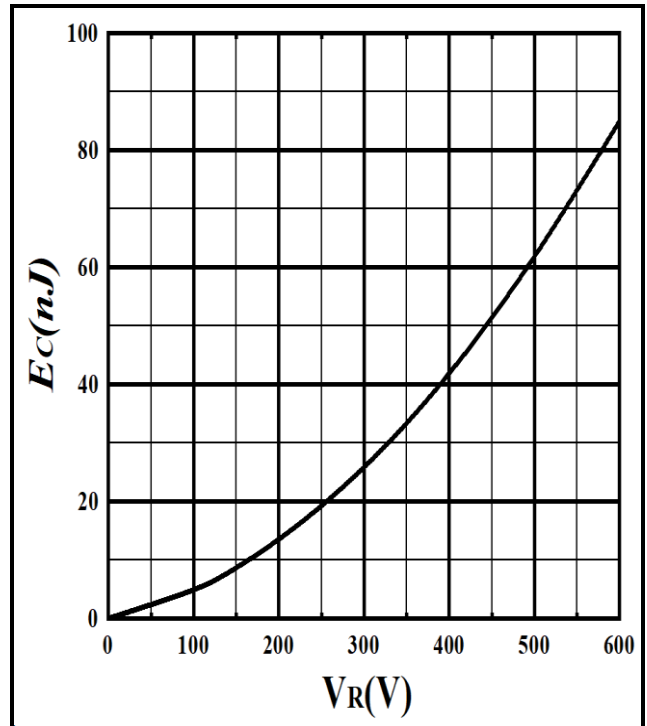


Figure 6. Capacitance stored energy

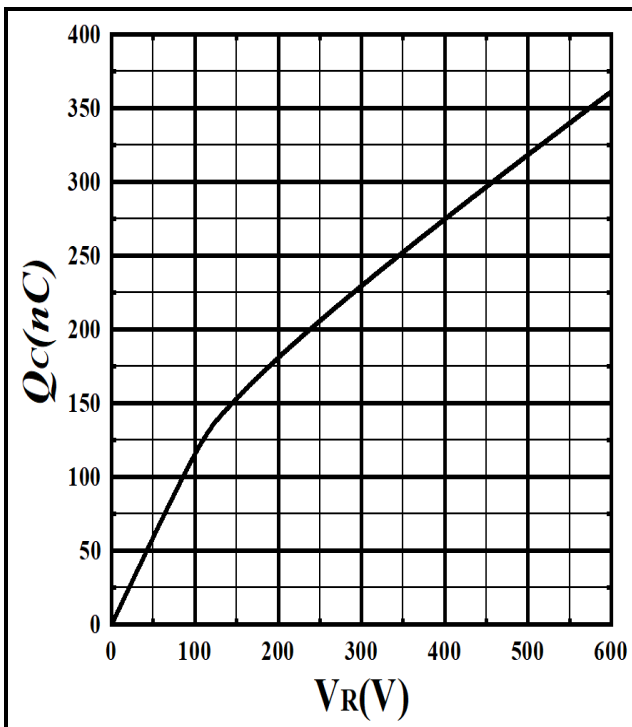
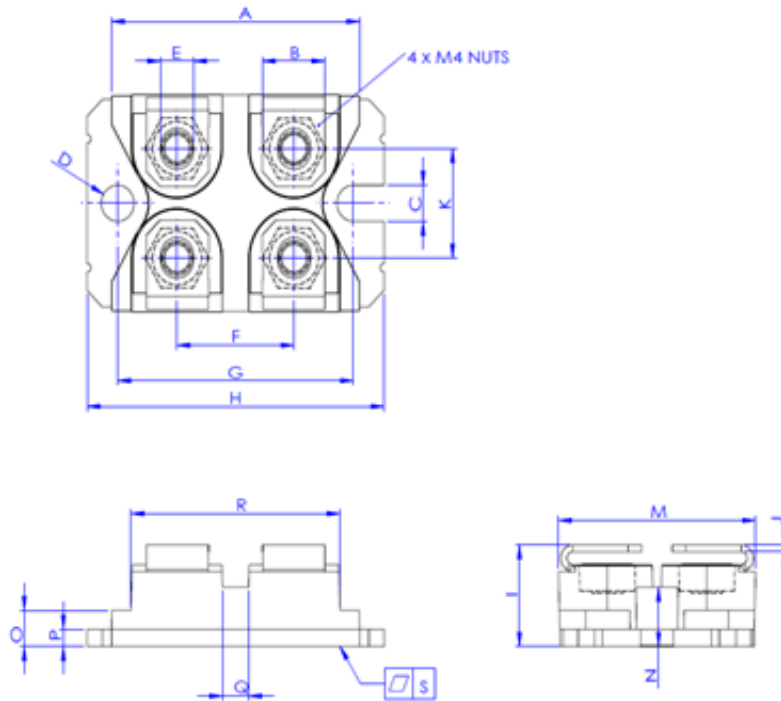


Figure 7. Total capacitance charge vs. reverse voltage

Package Information



Dimension unit: [mm]			
Symbol	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	SLS065J100A-ISATH
Package	SOT-227
Unit quantity	100EA
Packing type	Tube

Important Notices – Read Carefully

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