650V/8A

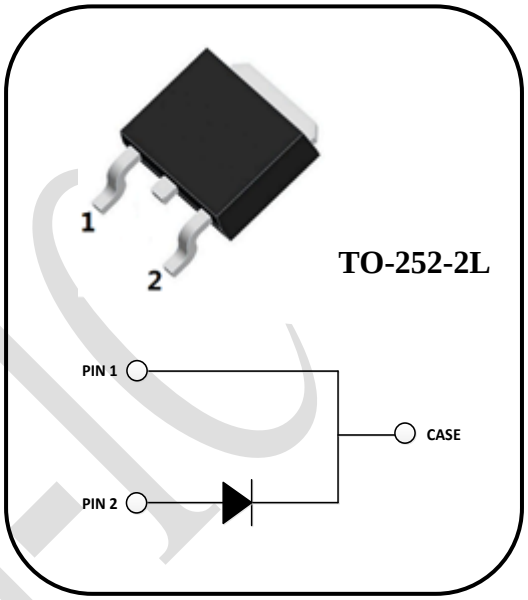
SiC Schottky Barrier Diode

Product Description

V_{RRM}	650	V
I_F(135℃)	11	A
Q_C	23	nC

Characteristic

- Zero Reverse Recovery Current
- Positive temperature coefficient
- Temperature-independent performance
- High-speed switching
- Low switching loss
- Low heat dissipation requirements



Application

- Switching power supply
- Power factor correction
- Motor drive，traction
- Charging pile

Device	Package	Marking
SDS065J008D2	TO-252-2L	DS065008D2

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit	Test Conditions
Reverse voltage (Repetitive peak)	V_{RRM}	650	V	T_C=25℃
Reverse Voltage (Surge peak)	V_{RSM}	650		T_C=25℃
Reverse voltage (DC)	V_{DC}	650		T_C=25℃
Continuous forward current	I_F	24	A	T_C=25℃
		11		T_C=135℃
		8		T_C=153℃
Surge non-repetitive forward current	I_{FSM}	64	A	T_C=25℃,tp=10ms,half Sine Pulse
Repetitive Peak Forward Surge Current	I_{FRM}	40	A	T_C=25℃,tp=10ms,half Sine Wave D=0.1
Total power dissipation	P_{TOT}	100	W	T_C=25℃
i^2t value	$\int i^2dt$	20.5	A^2s	T_C=25℃, t_P=10ms
Operating temperature	T_j	-55~175	℃	
storage temperature	T_{stg}	-55~175	℃	

Thermal Characteristics

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Thermal resistance	$R_{th(j-c)}$	/	1.5	/	℃/W	

Electrical Characteristics T_j =25℃

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
DC blocking voltage	V_{DC}	650	/	/	V	I_R=100 μA
Forward voltage	V_F	/	1.40	1.70	V	I_F=8A, T_j =25℃
		/	1.75	2.50		I_F=8A, T_j =175℃
Reverse current	I_R	/	1	25	μA	V_R=650V, T_j =25℃
		/	5	160		V_R=650V, T_j =175℃
Total capacitance	C	/	434	/	pF	V_R=0V, f=1MHz
		/	44	/		V_R=200V, f=1MHz
		/	38	/		V_R=400V, f=1MHz
Total capacitive charge	Q_C	/	23	/	nC	V_R=400V
Capacitance Stored Energy	E_C	/	3.5	/	μJ	V_R=400V

Typical Electrical Characteristics Curves

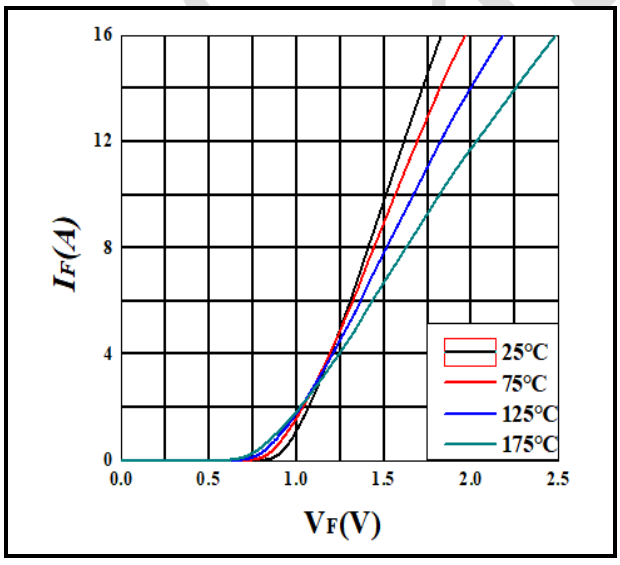


Figure 1. Forward Characteristics

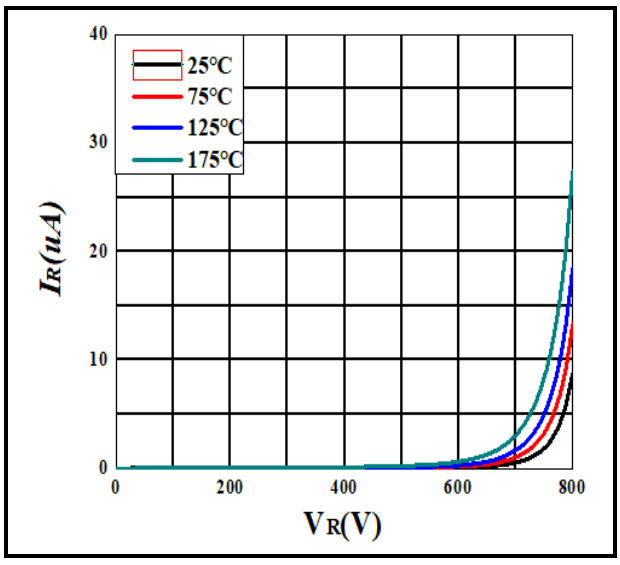


Figure 2. Reverse Characteristics

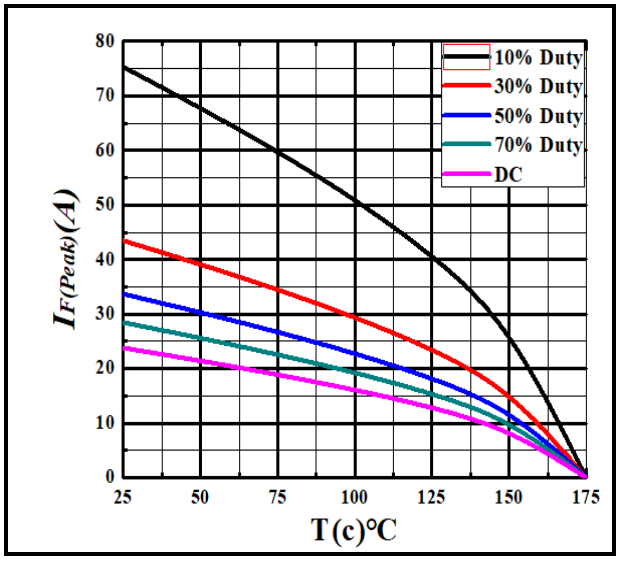


Figure 3. Current Derating

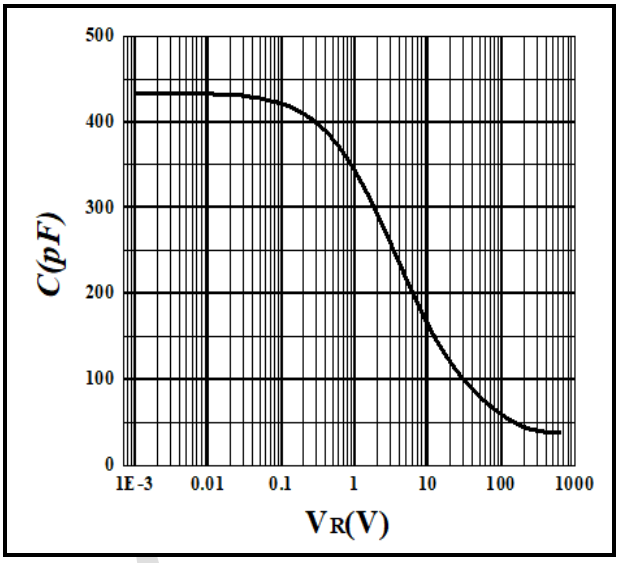


Figure 4. Capacitance vs. Reverse Voltage

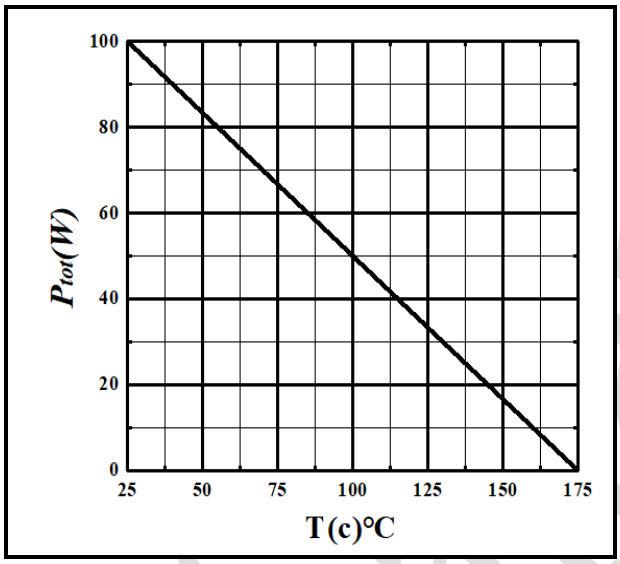


Figure 5. Power Derating

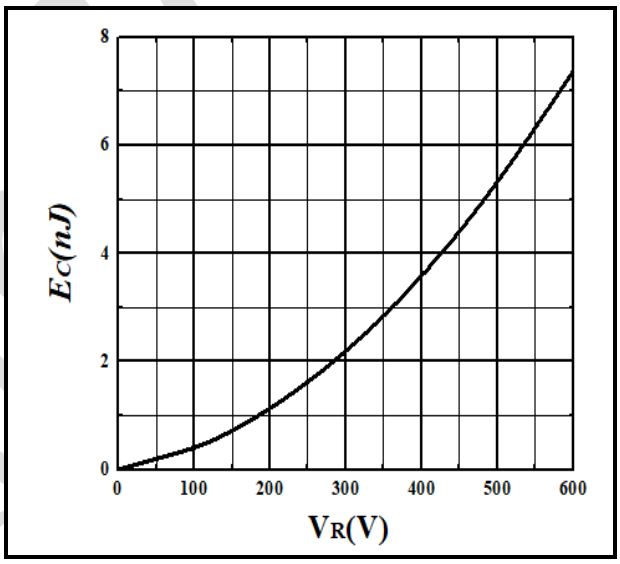


Figure 6. Capacitance Stored Energy

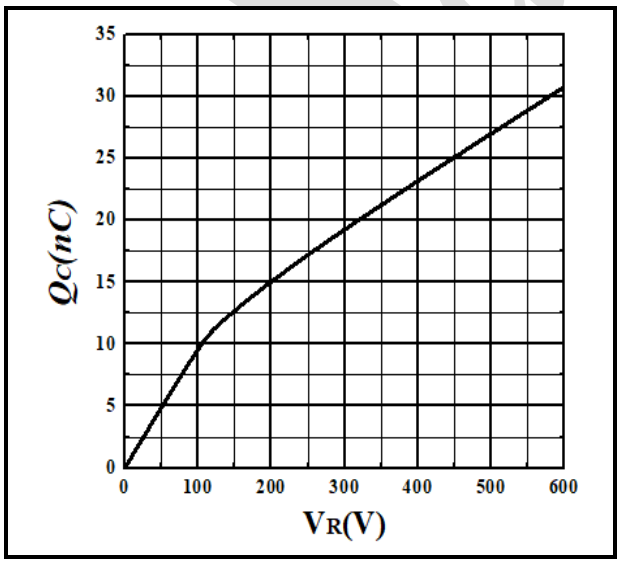
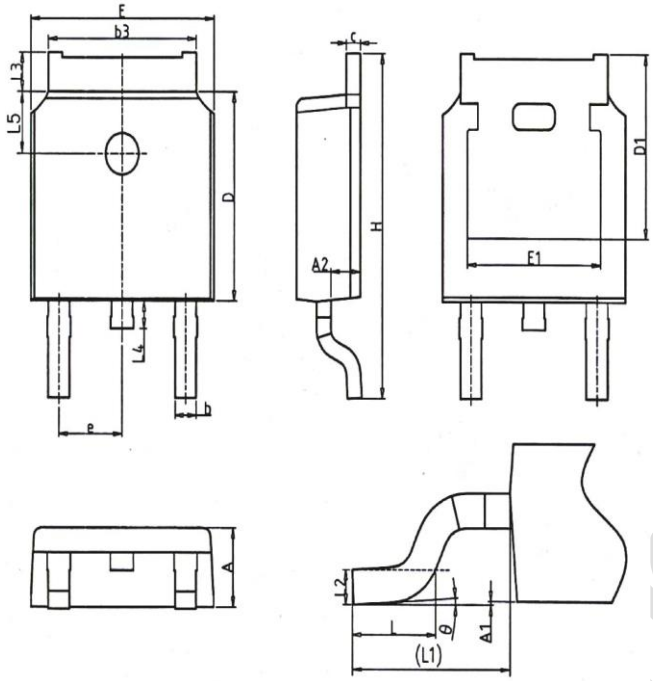


Figure 7. Total Capacitance Charge vs. Reverse Voltage

Package



SYMBOL	mm		
	MIN	NOM	MAX
A	2.2	2.3	2.38
A1	0	-	0.2
A2	0.97	1.07	1.17
b	0.68	0.78	0.9
b3	5.2	5.33	5.46
c	0.43	0.53	0.61
D	5.98	6.1	6.22
D1	5.30REF		
E	6.4	6.6	6.73
E1	4.63	-	-
e	2.286BSC		
H	9.4	10.1	10.5
L	1.38	1.5	1.75
L1	2.90REF		
L2	0.51BSC		
L3	0.88	-	1.28
L4	0.5	-	1
L5	1.65	1.8	1.95
θ	0°	-	8°

Ordering information

Part Number	SDS065J008D2-ISARH
Package	TO-252-2L
Unit Quantity	2500 EA
Packing Type	Tape Reel
RoHS	Yes

Notes

SAIC SiC Schottky diode portfolio: http://www.sanan-ic.com/