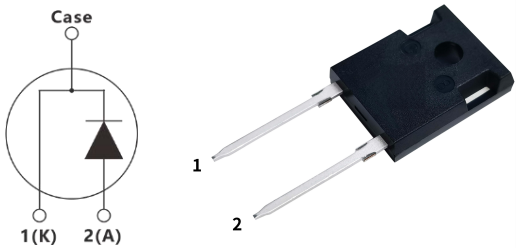
Silicon Carbide Schottky Diode

Parameter	Value	Unit
V_{RRM}	1200	V
I_F	10	A
Q_C	55	nC



TO-247-2L

Features

- Zero reverse recovery current
- Zero forward recovery voltage
- Temperature independent switching behavior
- High temperature operation
- High frequency operation

Applications

- Switched-Mode Power Supply
- Power Factor Correction
- Uninterruptible Power Supply
- Boost Converter

Maximum Ratings (at T_J=25℃ unless otherwise specified)

Parameter	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	1200	V
Surge Peak Reverse Voltage	V_{RSM}	1200	V
Continuous Forward Current T_C=25℃ T_C=135℃ T_C=156.5℃	I_F	 33.3 15.9 10	A
Repetitive Peak Forward Surge Current T_C=25℃,tp =10ms,Half Sine Pulse,D=0.1,1000Cycle	I_{FRM}	60	A
Non-Repetitive Forward Surge Current T_C=25℃,tp =10ms,Half Sine Pulse	I_{FSM}	120	A
Non-Repetitive Forward Surge Current T_C= 25℃,tp =10ms,Half Sine Pulse	$\int i^2 dt$	72	A^2s
Power dissipation T_C=25℃ T_C=110℃	P_{tot}	 153 66	W
Operating junction Range	T_j	-55 to +175	℃
Storage temperature Range	T_{stg}	-55 to +175	℃

Thermal Characteristics

Parameter	Symbol	Typ.	Unit
Thermal resistance, junction – case.	R_{thJC}	0.98	℃/W

Electrical Characteristics(at T_J=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Value			Unit
			Min.	Typ.	Max.	
DC blocking voltage	V_{DC}	T_j=25℃	1200			V
Diode forward voltage	V_F	I_F=10A ,T_j=25℃ I_F=10A ,T_j=175℃		1.39 1.89	1.7 2.5	V
Reverse current	I_R	V_R=1200V, T_j=25℃ V_R=1200V ,T_j=175℃		4 25	50 100	μA
Total capacitive charge	Q_C	V_R=800V, T_j=25℃		55		nC
Total capacitance	C	Tj=25℃ V_R=0V , f=1MHz V_R=400V ,f=1MHz V_R=800V ,f=1MHz		834 51 43.8		pF
Capacitance Stored Energy	E_C	V_R=800V		28		uJ

Typical Characteristics

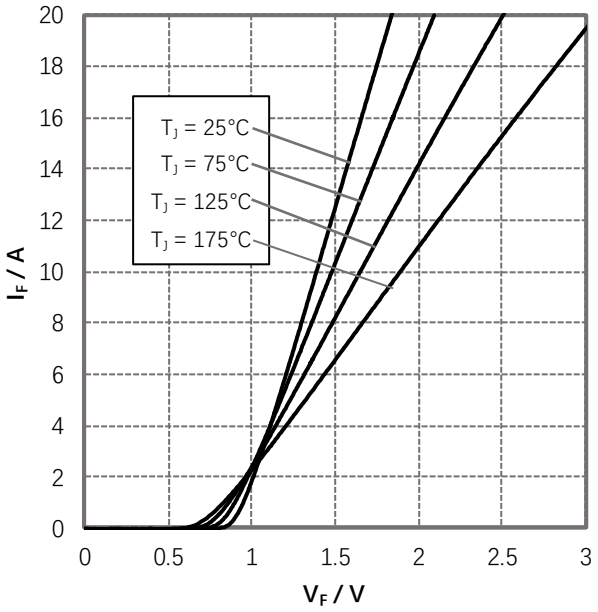


Figure 1. Forward Characteristics

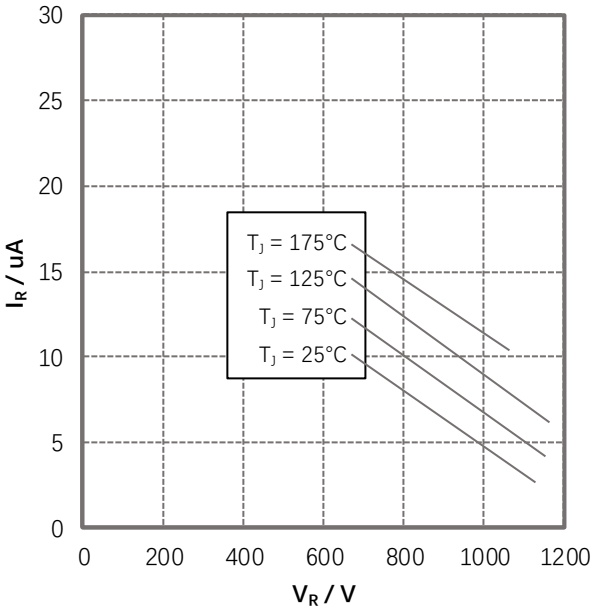


Figure 2. Reverse Characteristics

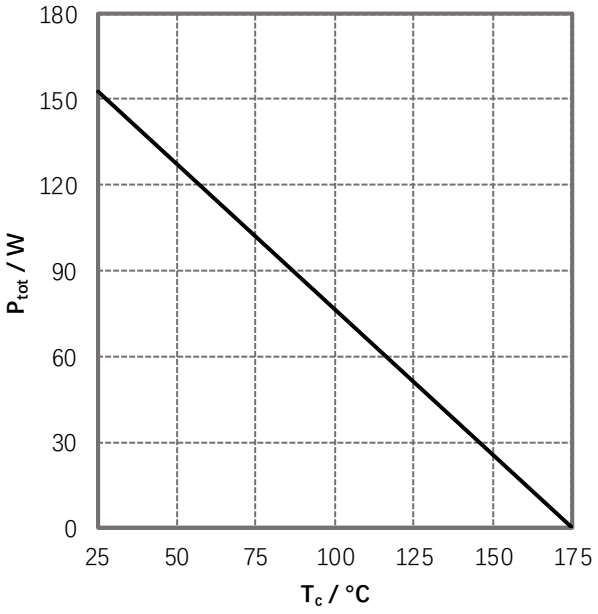


Figure 3. Power Derating

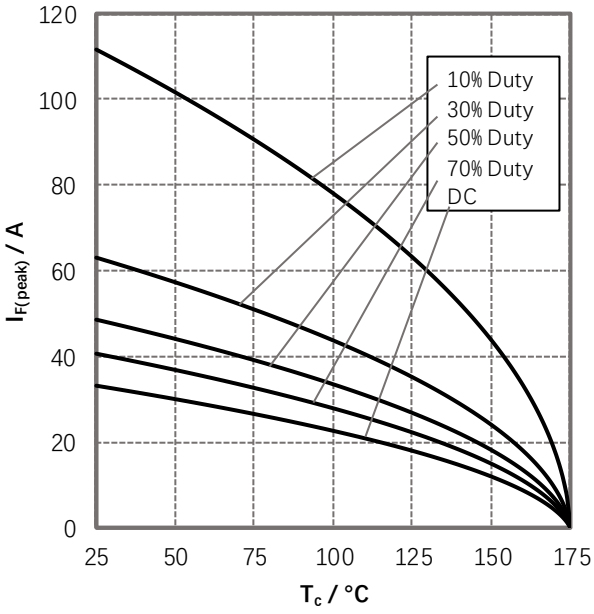


Figure 4. Current Derating
Valid for switching of above 20kHz, excluding D.C. curve

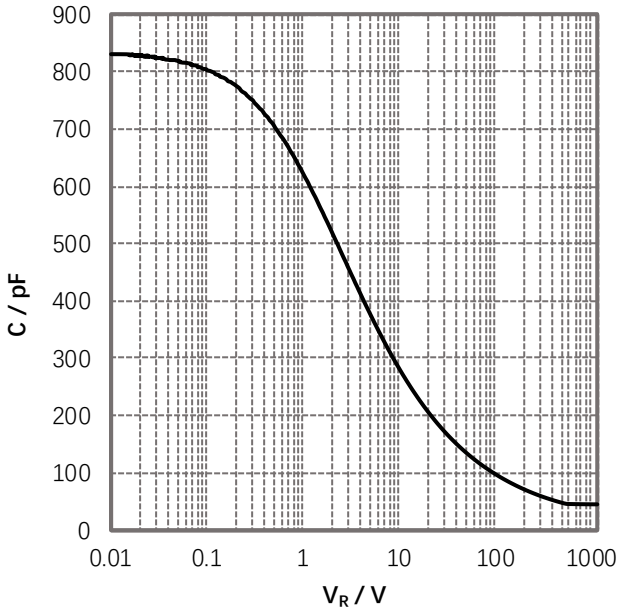


Figure 5. Capacitance vs. Reverse Voltage

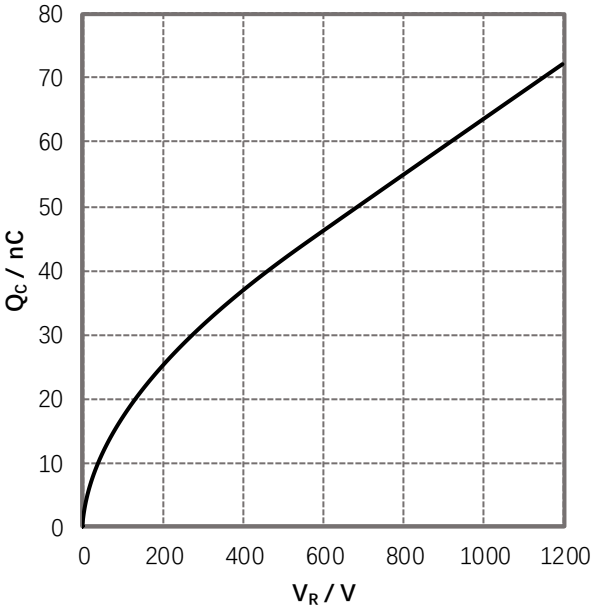


Figure 6. Reverse Charge vs. Reverse Voltage

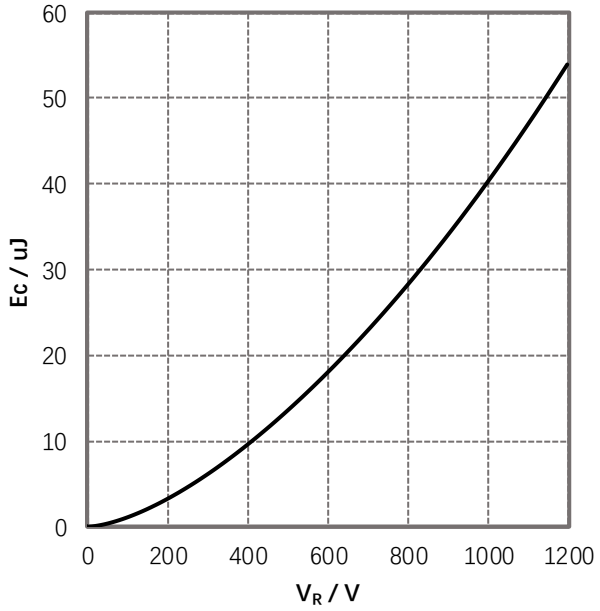


Figure 7. Capacitance Stored Energy

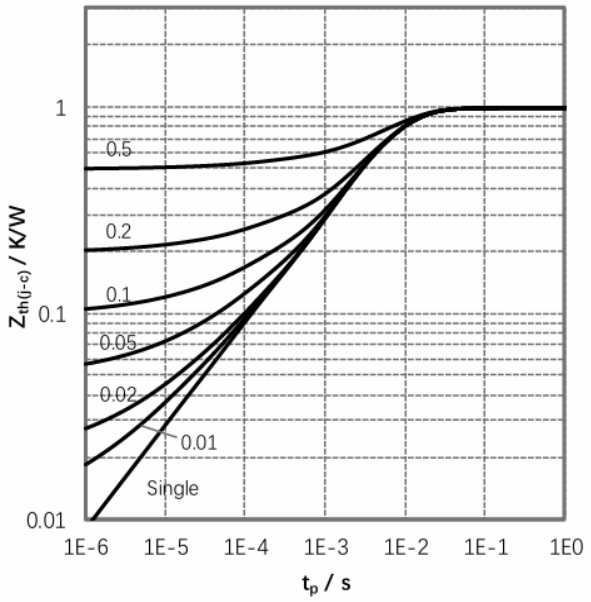
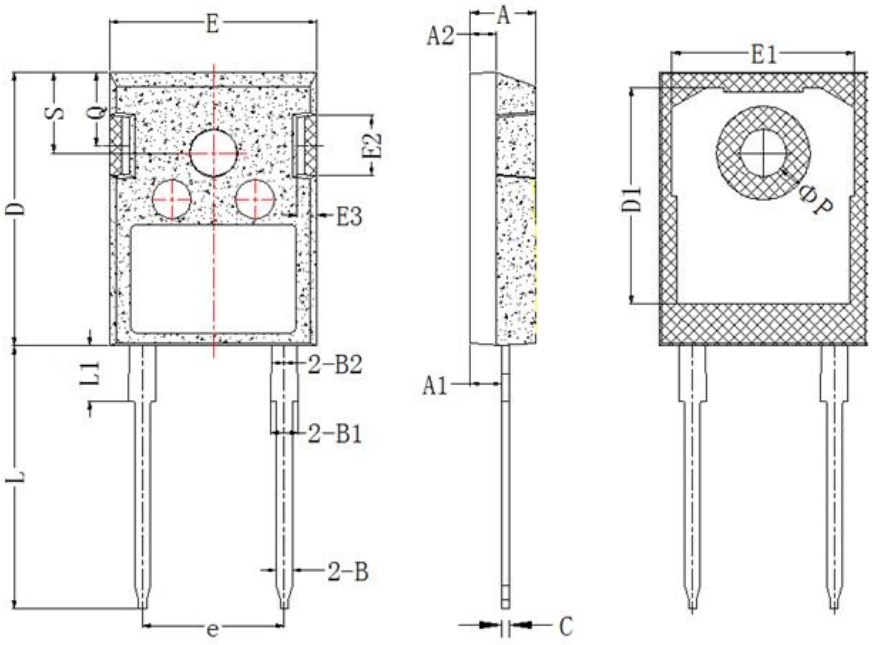


Figure 8. Transient Thermal Impedance

Package Outlines(Unit:mm)

TO-247-2L



Items	Values(mm)	
	MIN	MAX
A	4.85	5.15
A1	2.25	2.55
A2	1.85	2.15
B	1.04	1.33
B1	1.90	2.35
B2	1.90	2.15
C	0.55	0.68
D	20.80	21.10
D1	16.25	17.65
D2	0.95	1.35
E	15.70	16.10
E1	13.50	14.20
E2	3.80	5.00
E3	1.00	2.60
e	10.63	11.13
L	19.80	20.30
L1	4.00	4.50
φP	3.50	3.70
Q	5.40	6.00
S	6.00	6.40

***Important Usage Information and Disclaimer**

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