



Silicon Carbide Schottky Diode

Features

- Positive temperature coefficient
- Temperature-independent switching
- Maximum working temperature at 175 °C
- Unipolar devices and zero reverse recovery current
- Zero forward recovery current
- Essentially no switching losses
- Reduction of heat sink requirements
- High-frequency operation
- Reduction of EMI

Typical Applications

Typical applications are in power factor correction(PFC), solar inverter, uninterruptible power supply, motor drives, photovoltaic inverter, electric car and charger.

Mechanical Data

Package

Electrical Characteristics (Per Leg)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Typ.	Max.
Forward voltage drop	V_F	V	$I_F=20A, T_J=25^\circ C$	1.35	1.55
			$I_F=20A, T_J=175^\circ C$	1.75	-
Reverse leakage current	I_R	μA	$V_R=650V, T_J=25^\circ C$	1	25
			$V_R=650V, T_J=175^\circ C$	5	-
Total capacitive charge	Q_C	nC	$V_R=400V, T_J=25^\circ C, Q_C = \int_0^{V_R} I_C(V) dV$	62	-
Total capacitance	C	μF	$V_R=0V, f=1MHz$	1157	-
			$V_R=200V, f=1MHz$	115.6	-
			$V_R=400V, f=1MHz$	107	-
Capacitance Stored Energy	E_C	μJ	$V_R=400V$	7.8	-

Thermal Characteristics ($T_a=25$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Value
Thermal resistance	R_{J-C}	$^\circ C/W$	0.8

Typical Characteristics

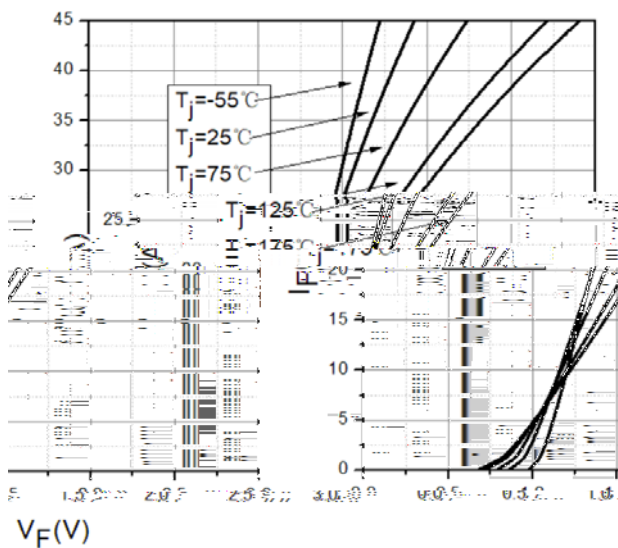


Figure 1. Forward Characteristics

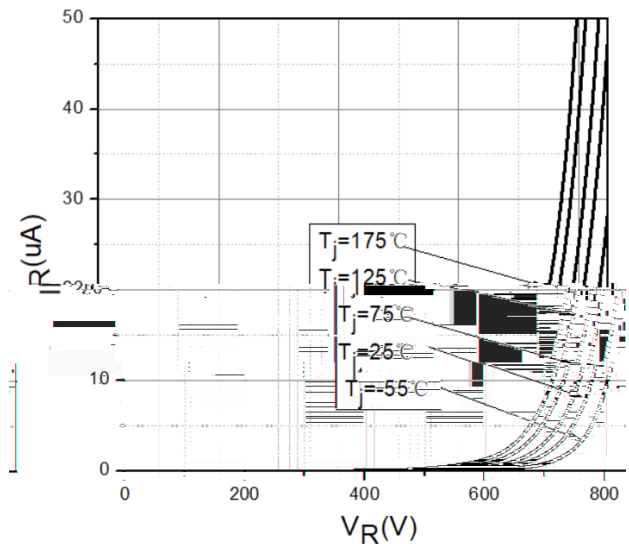


Figure2. Reverse Characteristic

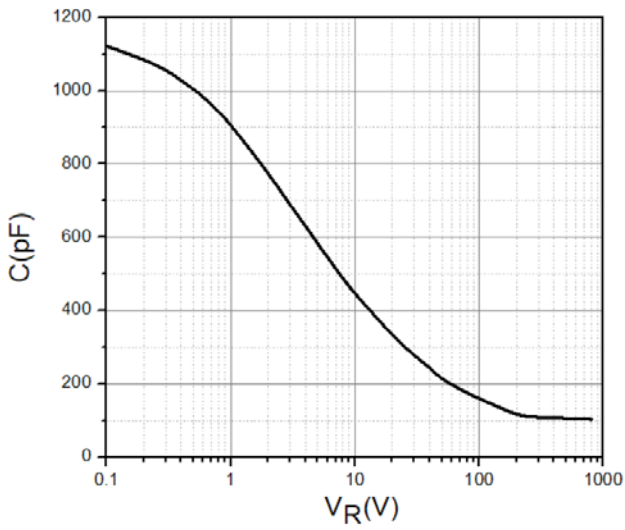


Figure 3. Capacitance vs. Reverse Voltage

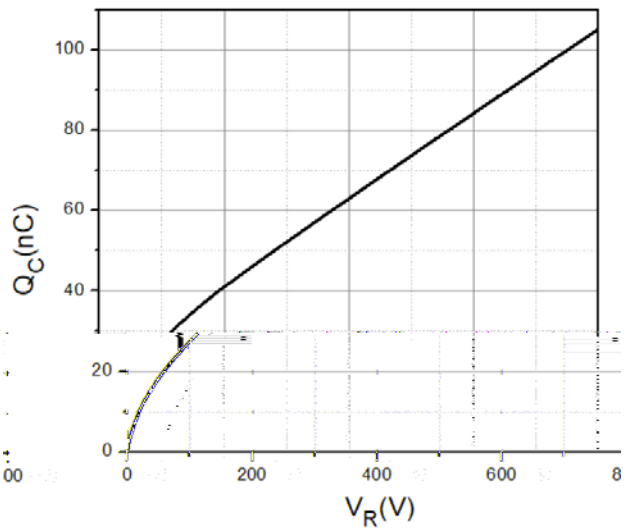


Figure 4. Total Capacitance Charge vs. Reverse Voltage

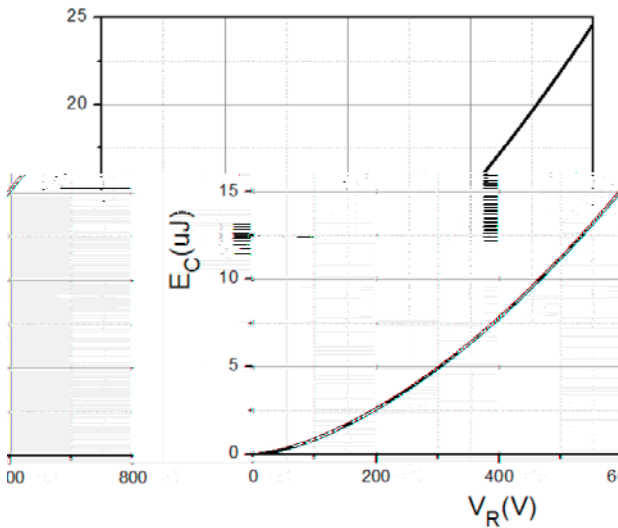


Figure 5. Capacitance Stored Energy

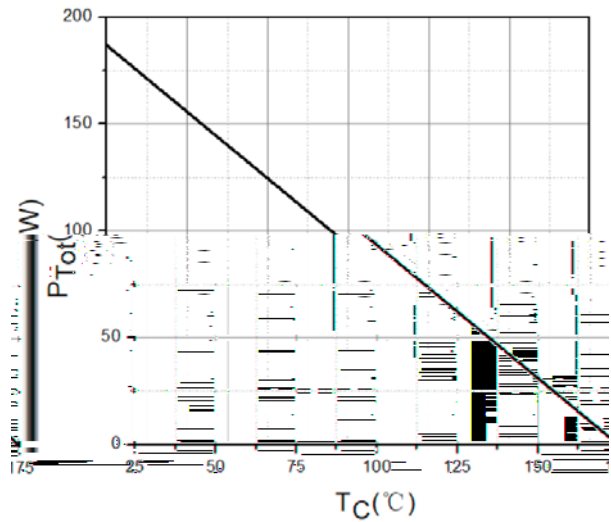


Figure 6. Power Derating

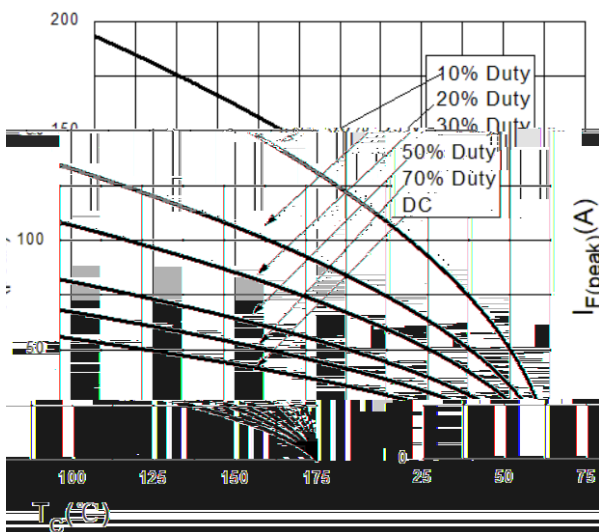


Figure 7. Current Derating

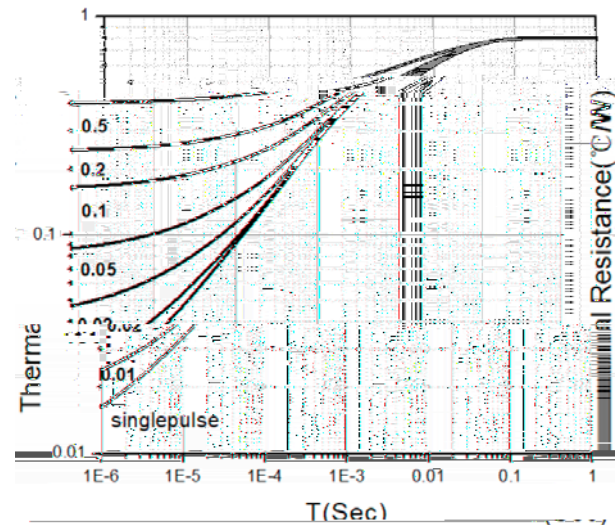
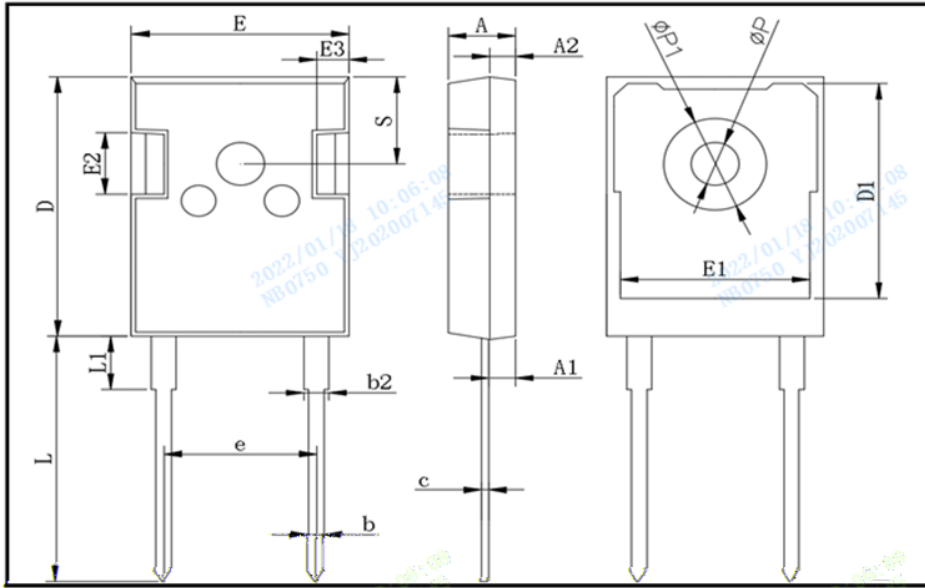


Figure 8. Transient Thermal Impedance

Outline Dimensions



TO-247AC		
Dim	Min	Max
A	4.80	5.20
A1	2.21	2.61
A2	1.85	2.15
b	1.11	1.36
b2	1.91	2.21
c	0.51	0.75
D	20.70	21.30
D1	16.25	16.85
E	15.50	16.10
E1	13.00	13.60
E2	4.80	5.20
E3	2.30	2.70
e	10.88BSC	
L	19.62	20.22
L1	-	4.30
P	3.40	3.80
P1	-	7.30
S	6.15BSC	



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