



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



Electrical Characteristics (Per Leg)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Typ.	Max.
Forward voltage drop	V_F	V	$I_F=20A, T_j=25^{\circ}C$	1.34	1.55
			$I_F=20A, T_j=175^{\circ}C$	1.86	2.70
Reverse leakage current	I_R	μA	$V_R=1200V, T_j=25^{\circ}C$	0.5	25
			$V_R=1200V, T_j=175^{\circ}C$	5	-
Total capacitive charge	Q_C	nC	$V_R=800V, T_j=25^{\circ}C, Q_C=\int_0^{V_R} I_C(V)dV$	114	-
Total capacitance	C	pF	$V_R=0V, f=1MHz$	1552	-
			$V_R=400V, f=1MHz$	107	-
			$V_R=800V, f=1MHz$	79	-
Capacitance Stored Energy	E_C	μJ	$V_R=800V$	29.3	-

Thermal Characteristics $T_a=25$ Unless otherwise specified

PARAMETER	SYMBOL	UNIT	VALUE
Thermal resistance	R_{j-c}	$^{\circ}C/W$	0.47 ⁽¹⁾ 0.24 ⁽²⁾

(1)Per Leg, (2)Per Device

Typical Characteristics (Per Leg)

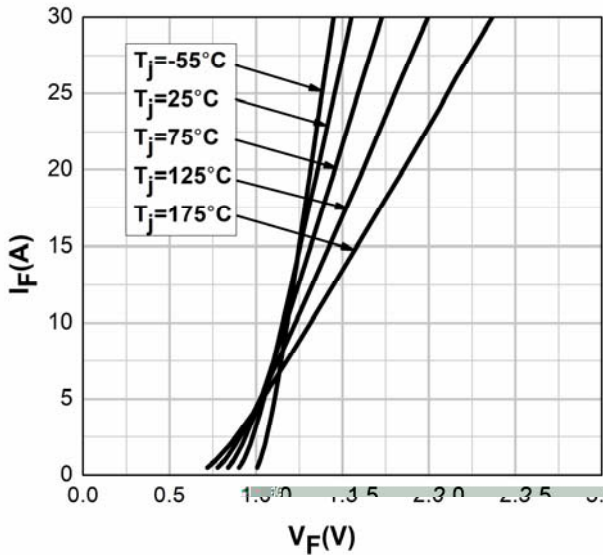


Figure 1. Forward Characteristics

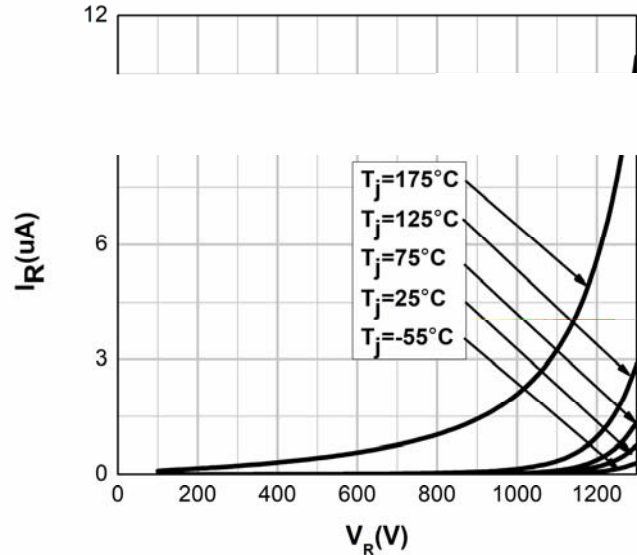


Figure2. Reverse Characteristic

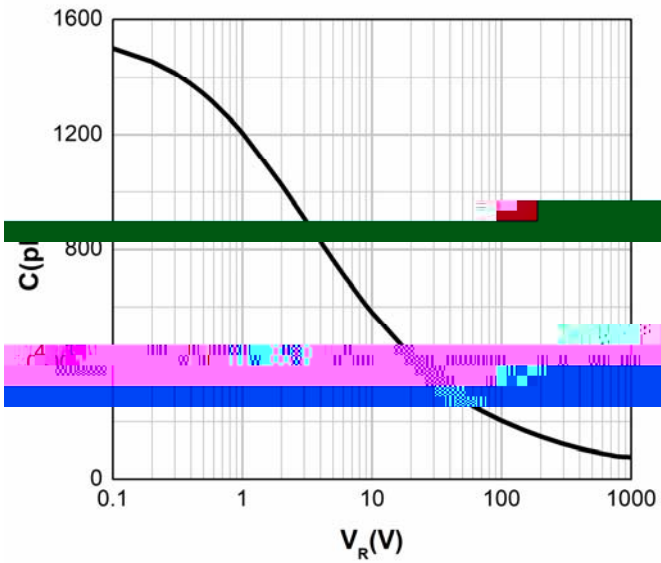


Figure 3. Capacitance vs. Reverse Voltage

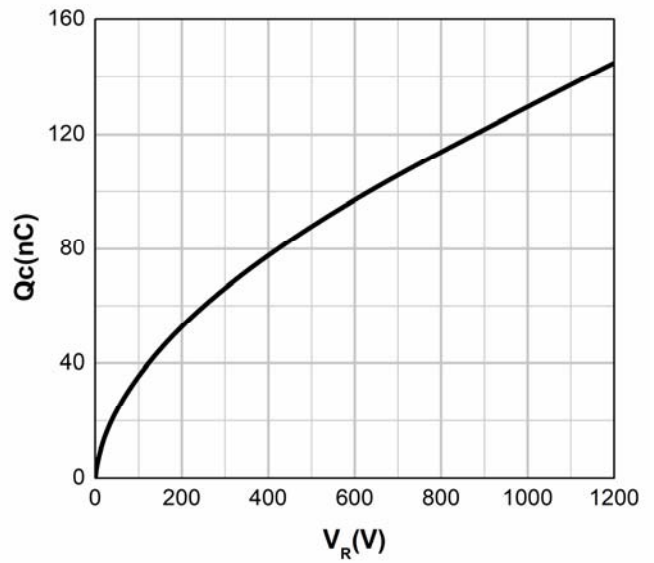


Figure 4. Total Capacitance Charge vs. Reverse Voltage

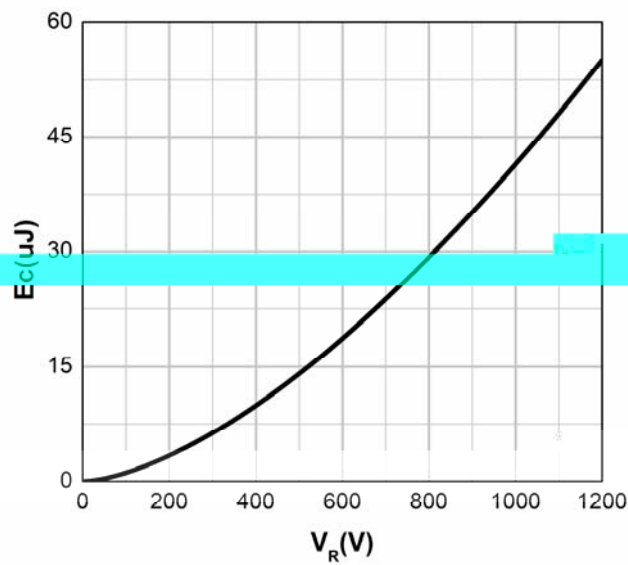


Figure 5. Capacitance Stored Energy

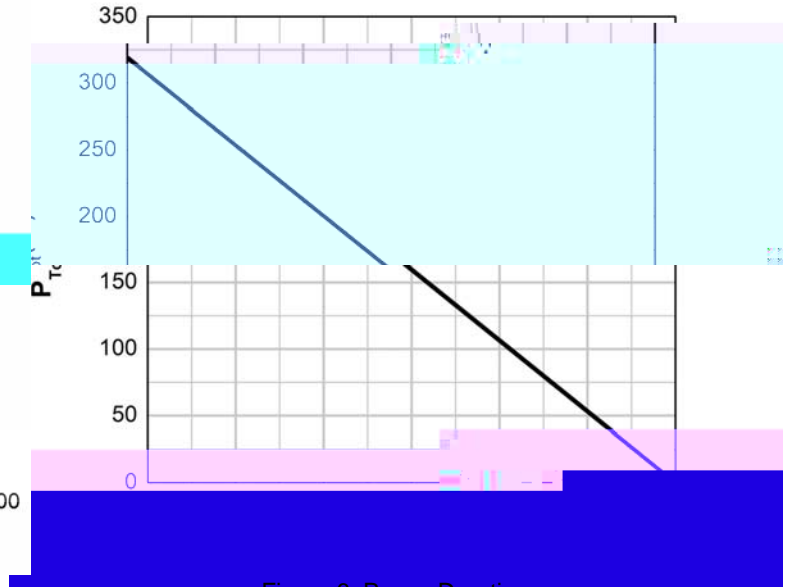


Figure 6. Power Derating

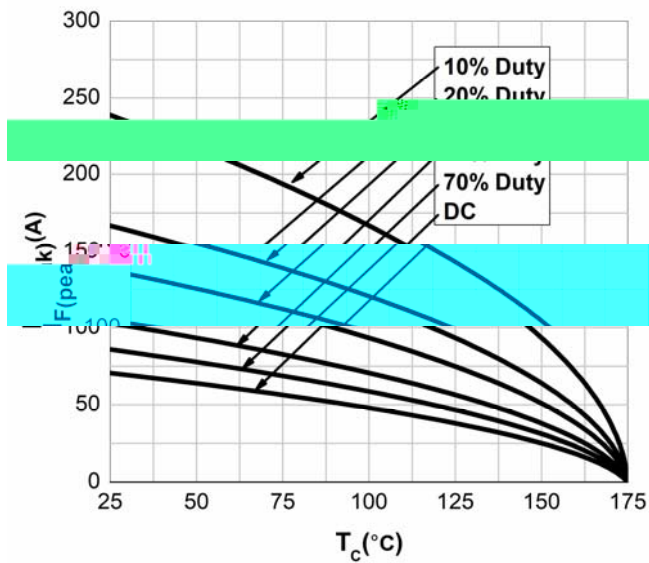


Figure 7. Current Derating

Typical Characteristics (Device)

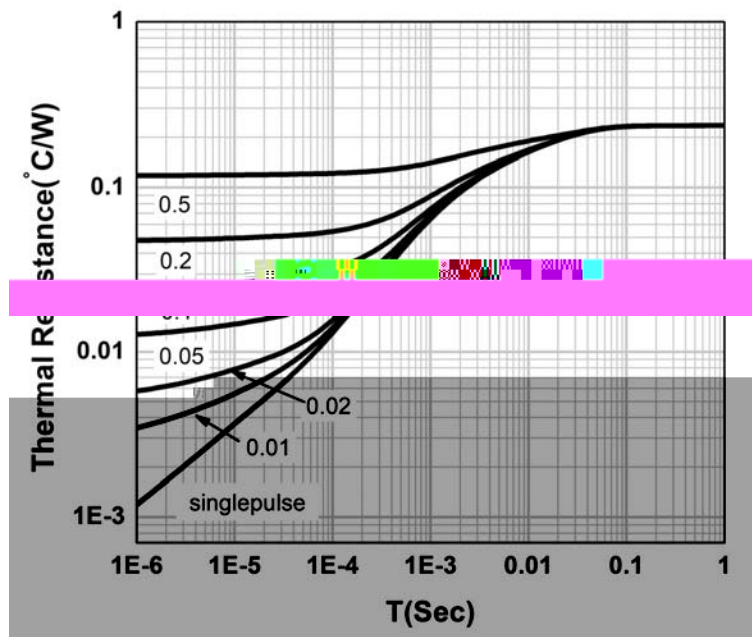
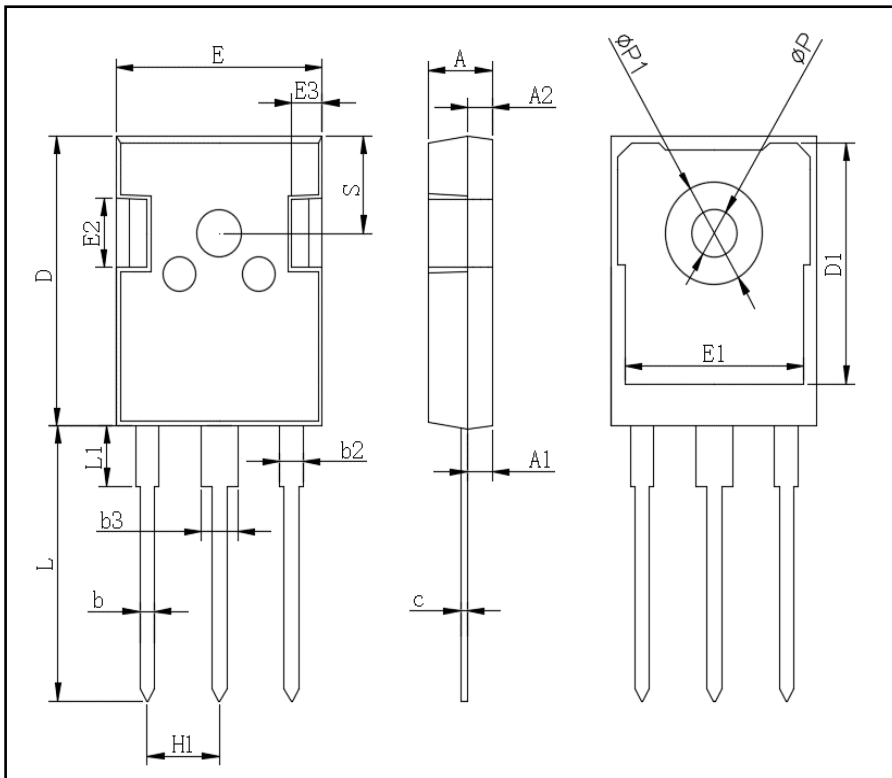


Figure 8. Transient Thermal Impedance

Outline Dimensions



TO-247AB		
Dim	Min	Max
A	4.80	5.20
A1	2.21	2.61
A2	1.85	2.15
b	1.0	1.4
b2	1.91	2.21
C	0.5	0.7
D	20.70	21.30
D1	16.25	16.85
E	15.50	16.10
E1	13.0	13.6
E2	4.80	5.20
E3	2.30	2.70
L	19.62	20.22
L1	-	4.30
P	3.40	3.80
P1		7.30
S	6.15TYP	
H1	5.44TYP	
b3	2.80	3.20



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