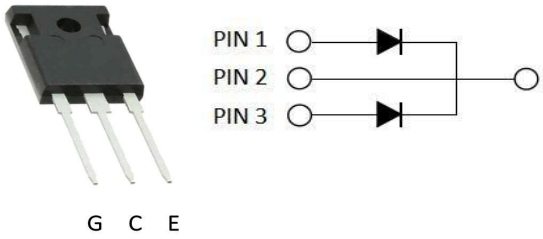
Silicon Carbide Schottky Diode

Product Summary

Parameter	Value	Unit
VRRM	650	V
IF	40	A
VF	1.45	V



Maximum Ratings (T_C = 25°C unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions	Note
VRRM	Repetitive Peak Reverse Voltage	650	V		
VRSM	Surge Peak Reverse Voltage	650	V		
VDC	DC Blocking Voltage	650	V		
IF	Continuous Forward Current (Per Leg/Per Device)	20* 40* *	A	Tc=150°C	Fig.7
IFRM	Repetitive Peak Forward Surge Current	140*	A	Tc=25°C,tp=10ms,Half Sine Wave	
IRSM	Non-Repetitive Peak Forward Surge Current	170*	A	Tc=25°C,tp=10ms,Half Sine Wave	
IF.Max	Non-Repetitive Peak Forward Surge Current	1360*	A	Tc=25°C,tp=10μs,Pulse	
Ptot	Power Dissipation	159 * 68 *	W	Tc=25°C Tc=110°C	Fig.6
Ty,Tstg	Operating Junction and Storage Temperature	-55 to+175	°C		

Note:*Per Leg,**Per Device

Electrical Characteristics (Per Leg)

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
VF	Forward Voltage	1.45 1.85	1.8 2.4	V	IF=20 A Tr=25°C IF=20ATr=175°C	Fig.1
IR	Reverse Current	2 40	20 200	μA	VR=650V Tr=25°C VR=650V Tr=125°C	Fig.2
Qc	Total Capacitive Charge	65		nC	VR = 400 V,TJ = 25°C Qc=∫VR C V dV	Fig.4

C	Total Capacitance	1340 120 109		pF	VR=0V,Tj=25°C,f=1 MHz VR=200V,Tr=25°C,f=1 MHz VR=400V,Tj=25°C,f=1 MHz	Fig.3
Ec	Capacitance Stored Energy	16		μJ	VR=400V	Fig.5

Thermal Characteristics(Per Leg)

Symbol	Parameter	Typ.	Unit	Note
Rarc	Thermal Resistance from Junction to Case	0.94	C/W	Fig.8

Figure 1.Forward Characteristics

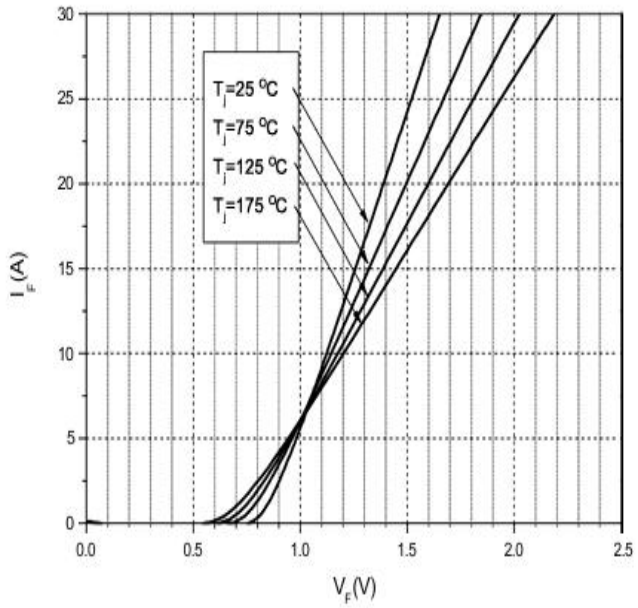


Figure 2.Reverse Characteristics

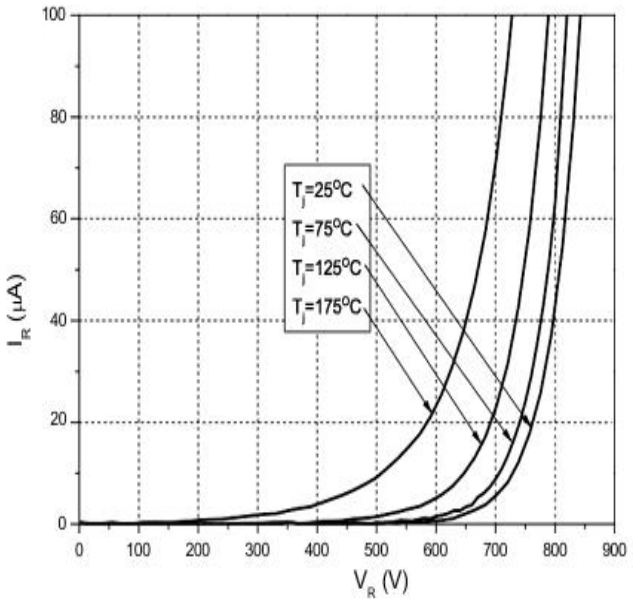


Figure 3.Capacitance vs.Reverse Voltage

Figure 4.Total Capacitance Charge vs.Reverse Voltage

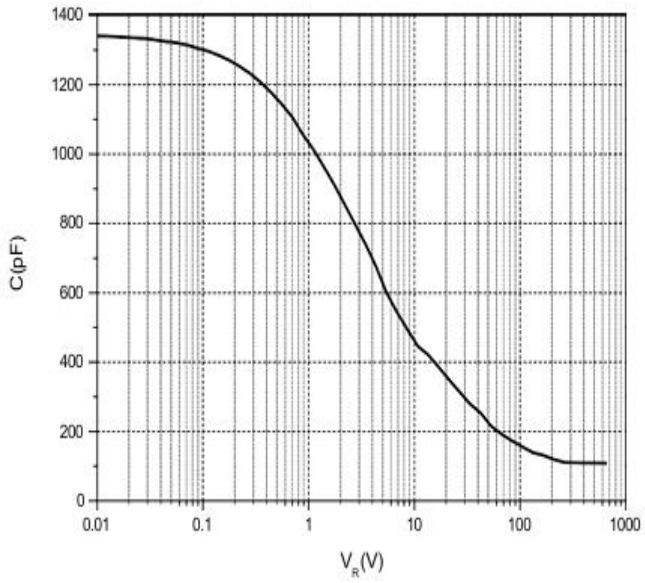


Figure 5.Capacitance Stored Energy

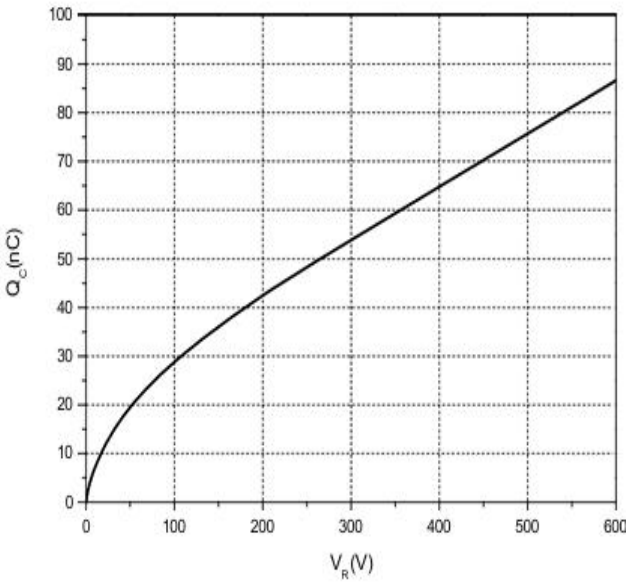


Figure 6. Power Derating

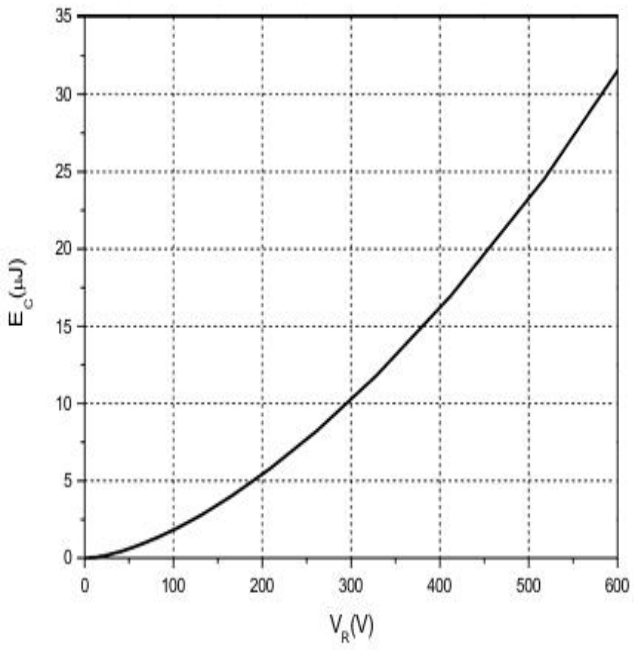


Figure 7.Current Derating

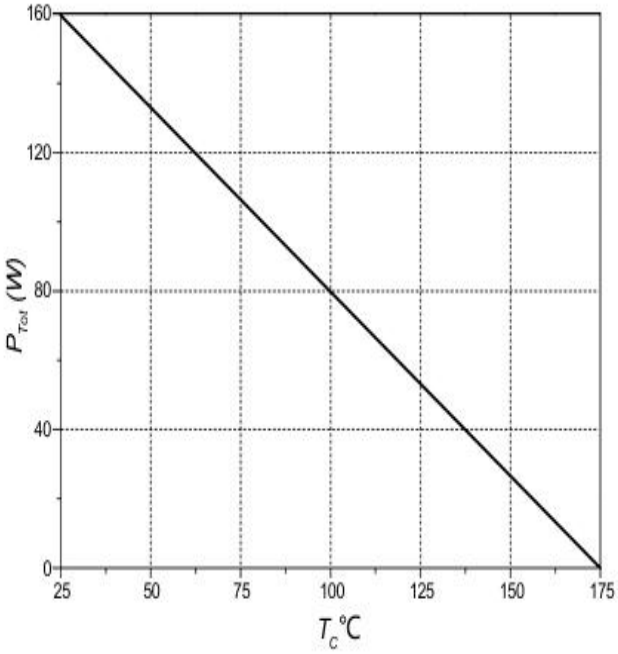
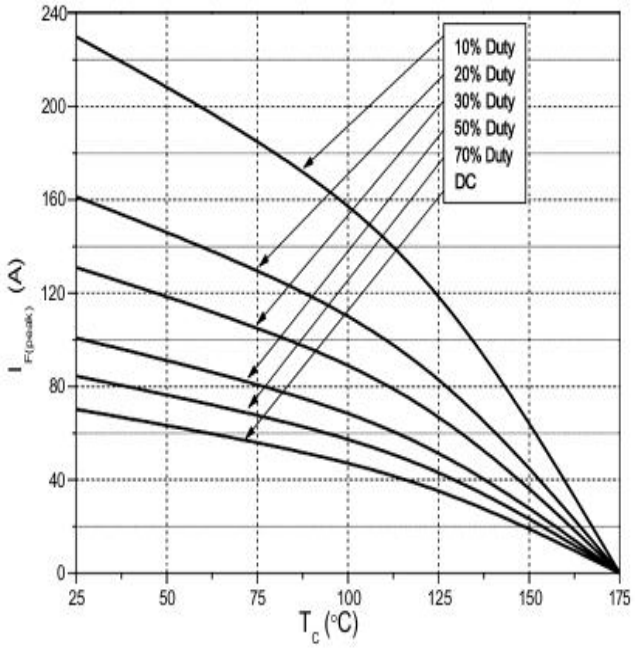
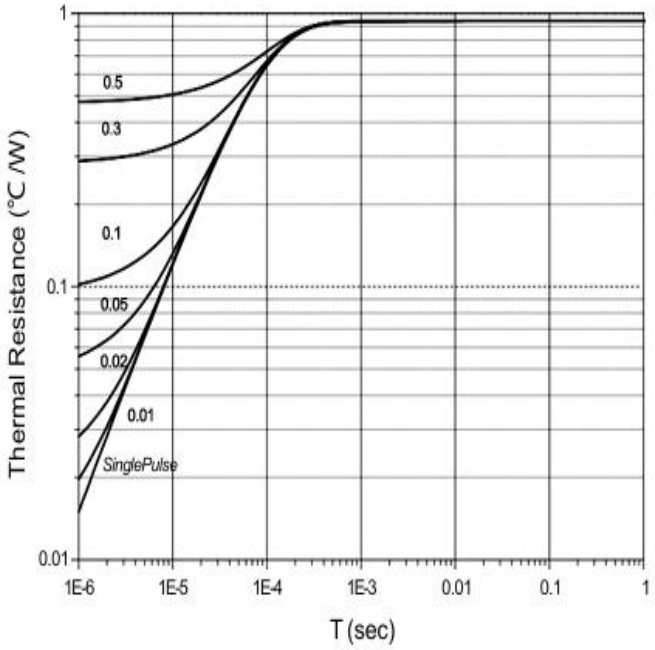
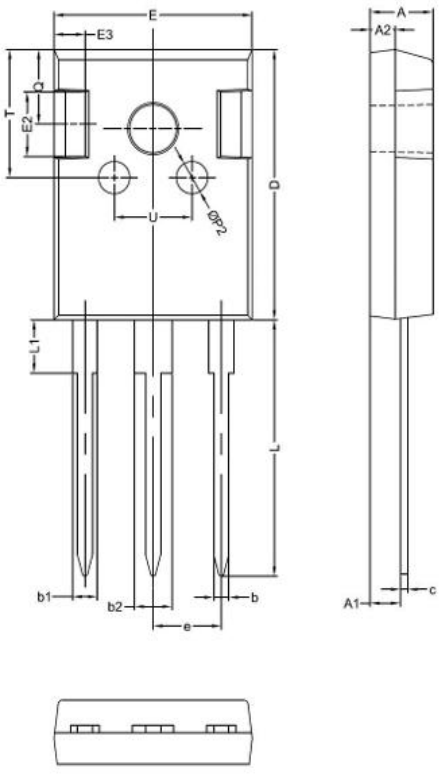


Figure 8.Transient Thermal Impedance





Package Dimensions:



符号	机械尺寸/mm		
	最小值	典型值	最大值
A	4.80	5.00	5.20
A1	2.21	2.41	2.61
A2	1.90	2.00	2.10
b	1.10	1.20	1.35
b1		2.00	
b2		3.00	
c	0.55	0.60	0.75
D	20.80	21.00	21.20
D1		16.55	
D2		1.20	
E	15.60	15.80	16.0
E1		13.30	
E2		5.00	
E3		2.50	
e		5.44	
L	19.42	19.92	20.42
L1		4.13	
P	3.50	3.60	3.70
P1	-	-	7.40
P2		2.50	
Q		5.80	
S	6.05	6.15	6.25
T		10.00	
U		6.20	

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