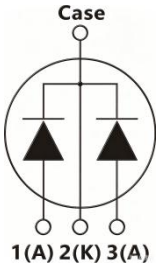
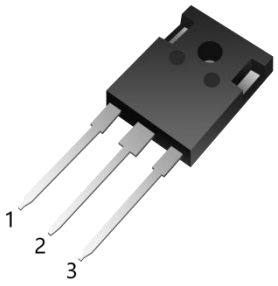
Silicon Carbide Schottky Diode

Parameter	Value	Unit
V_{RRM}	650	V
I_F	20*	A
Q_C	65*	nC





TO-247-3L

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 Converte

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

Parameter	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	650	V
Surge Peak Reverse Voltage	V_{RSM}	650	V
Continuous Forward Current (Per Leg/Per Device) T_C=150℃	I_F	20* 40**	A
Repetitive Peak Forward Surge Current T_C = 25℃,tp=10ms, Half Sine Pulse	I_{FRM}	140*	A
Non-Repetitive Forward Surge Current T_C = 25℃,tp=10ms, Half Sine Pulse	I_{FSM}	170*	A
Power dissipation T_C = 25℃,T_j = 175℃	P_{tot}	159* 68*	W
Operating junction Range	T_j	-55 to +175	℃
Storage temperature Range	T_{stg}	-55 to +175	℃

* Per leg;**Per device

Thermal Characteristics

Parameter	Symbol	Typ.	Unit
Thermal resistance, junction – case.	R_{thJC}	0.94	℃/W

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

Parameter	Symbol	Test conditions	Value			Unit
			Min.	Typ.	Max.	
DC blocking voltage	V_{DC}		650			V
Diode forward voltage	V_F	I_F=20A ,T_j=25℃ I_F=20A ,T_j=175℃		1.45 1.85	1.8 2.4	V
Reverse current	I_R	V_R=650V, T_j=25℃ V_R=650V ,T_j=175℃		2 40	20 200	μA
Total capacitive charge	Q_C	V_R=400V, T_j=25℃		65		nC
Total capacitance	C	T_j =25℃ V_R=0V , f=1MHz V_R=200V , f=1MHz V_R=400V , f=1MHz		1340 120 109		pF
Capacitance Stored Energy	E_C	V_R=400V		16		μJ

* Per leg **Per device

Typical Characteristics

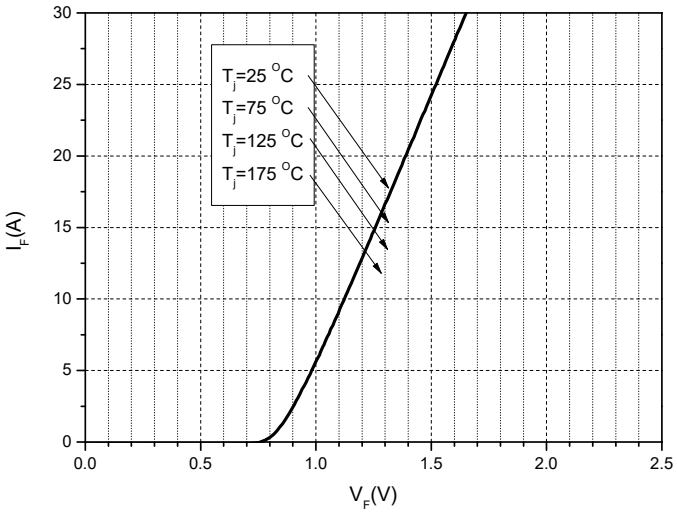


Figure1.Forward Characteristics

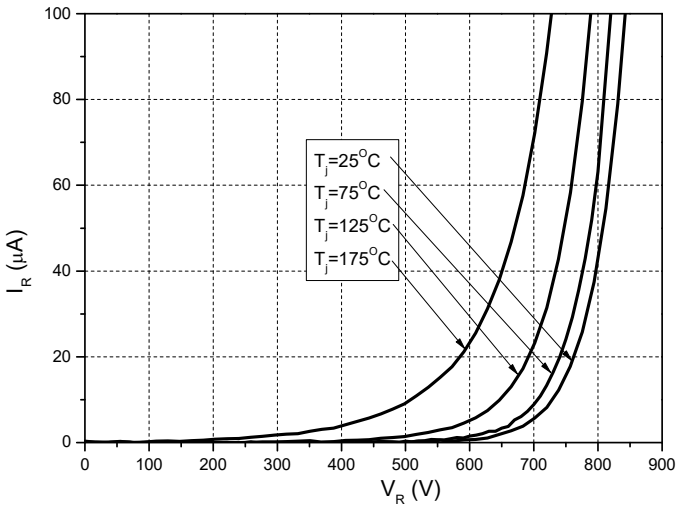


Figure2.Reverse Characteristics

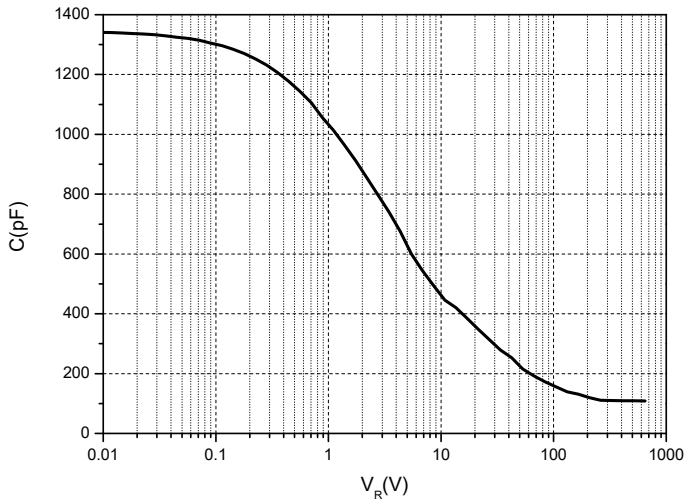


Figure3.Capacitance vs.Reverse Voltage

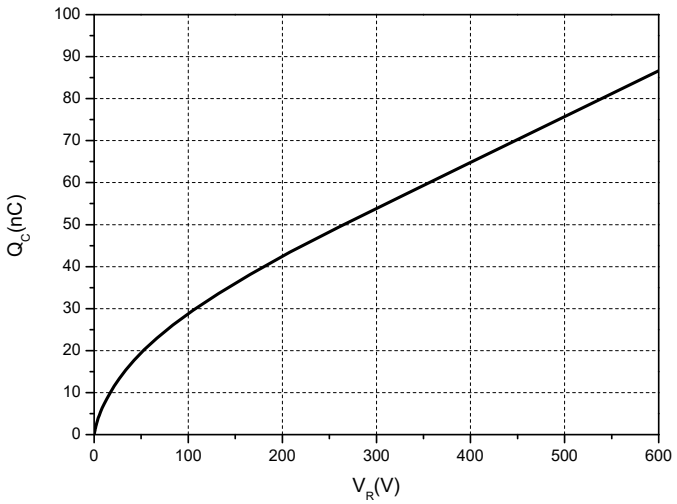


Figure4.TotalCapacitance Charge vs.Reverse Voltage

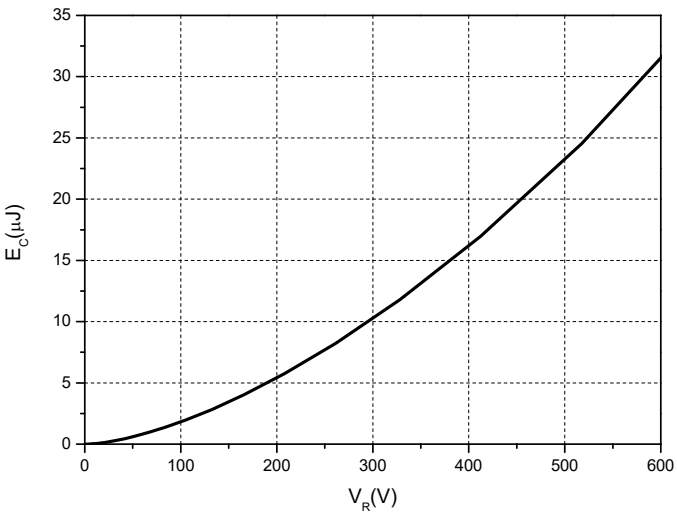


Figure5.Capacitance Stored Energy

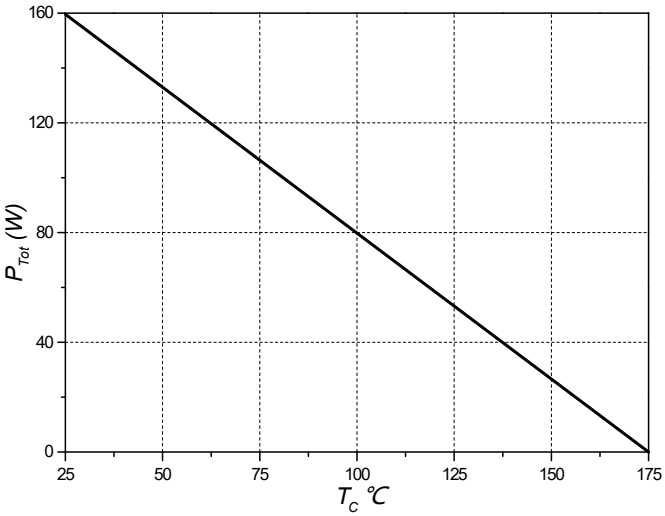


Figure6.Power Derating

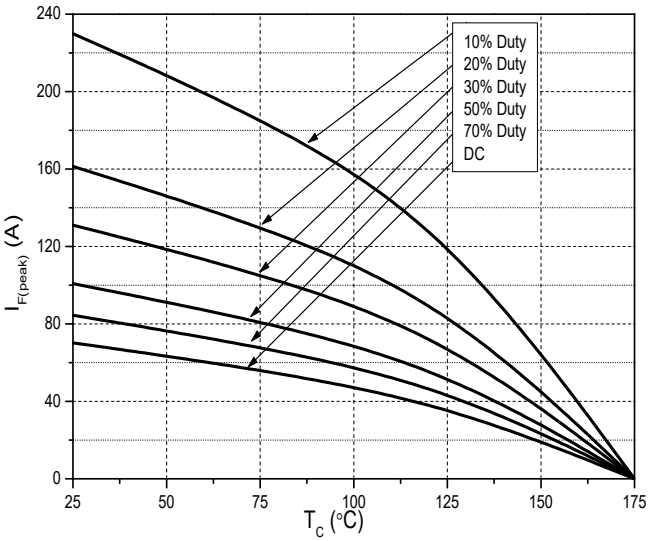


Figure7.Current Derating

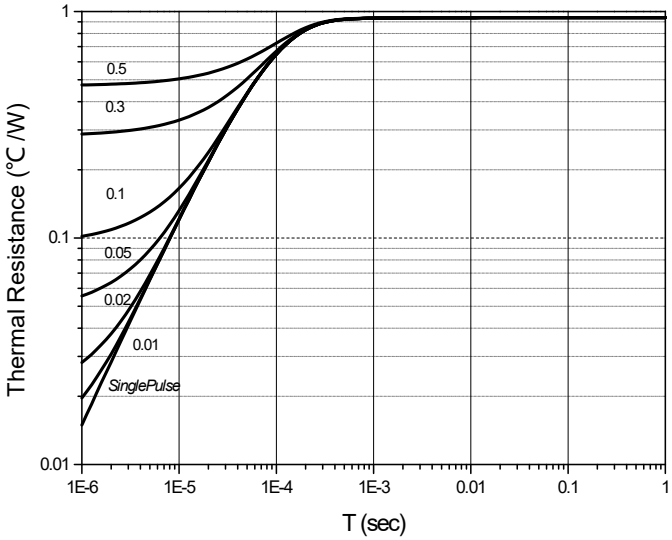
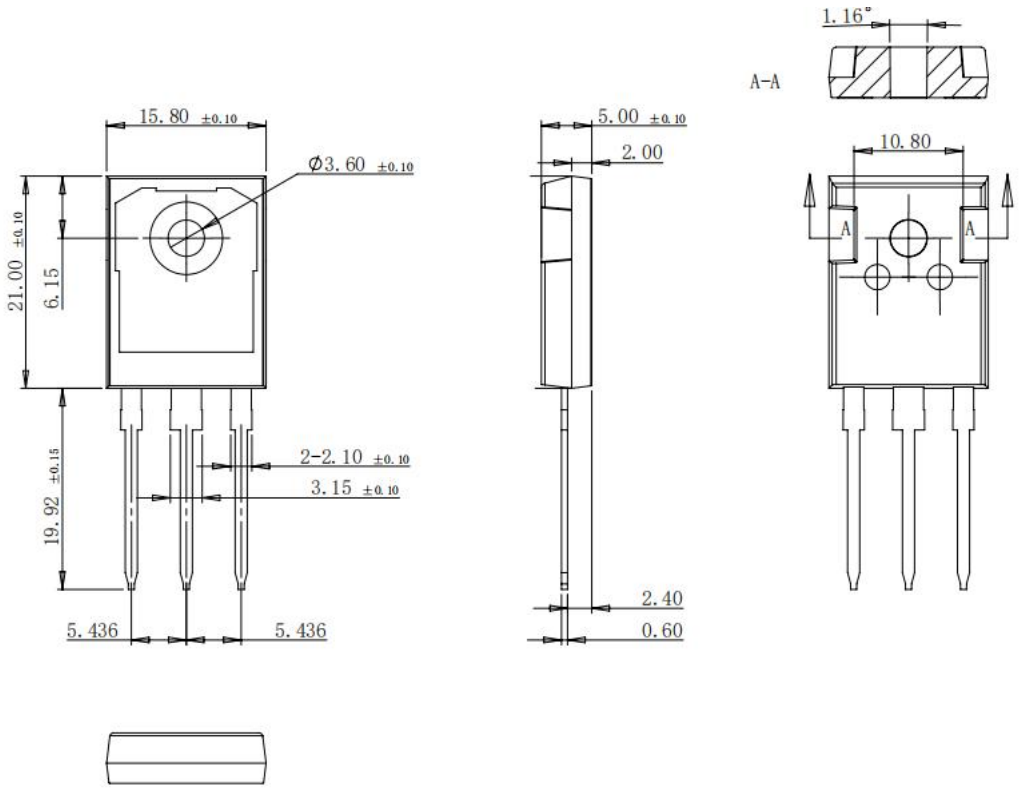


Figure8.Transient Thermal Impedance

Package Outlines(Unit:mm)

TO-247-3L



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