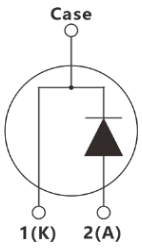
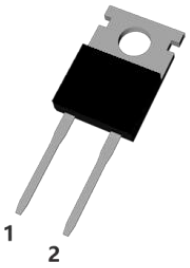
Silicon Carbide Schottky Diode

Parameter	Value	Unit
V_{RRM}	1200	V
I_F	15	A
Q_C	80	nC





TO-220AC

Features

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

Applications

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

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 = 155.5℃	I_F	 48.2 23 15	A
Repetitive Peak Forward Surge Current T_C = 25℃, tp =10ms, Half Sine Pulse, D=0.1,1000Cycle	I_{FRM}	75	A
Non-Repetitive Forward Surge Current T_C = 25℃, tp =10ms, Half Sine Pulse	I_{FSM}	165	A
i^2t Value T_C = 25℃, tp =10ms, Half Sine Pulse	$\int i^2dt$	136	A^2s
Power dissipation T_C = 25℃ T_C = 110℃	P_{tot}	 227 98	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}	0.66	℃/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
DC Blocking Voltage	V_{DC}		1200			V
Instantaneous forward voltage per leg	V_F	I_F =15A T_J=25℃ T_J=175℃		1.4 1.95	1.7 2.5	V
Reverse current per leg	I_R	V_R=1200V T_J=25℃ T_J=175℃		5.5 32	50 100	uA
Total Capacitance	C	f =1MHZ V_R=0V V_R=400V V_R=800V		1246 74.4 63		pF
Total Capacitive Charge	Q_C	V_R=800V T_J=25℃		80		nC
Capacitance Stored Energy	E_C	V_R=800V		41		uJ

Typical Characteristics

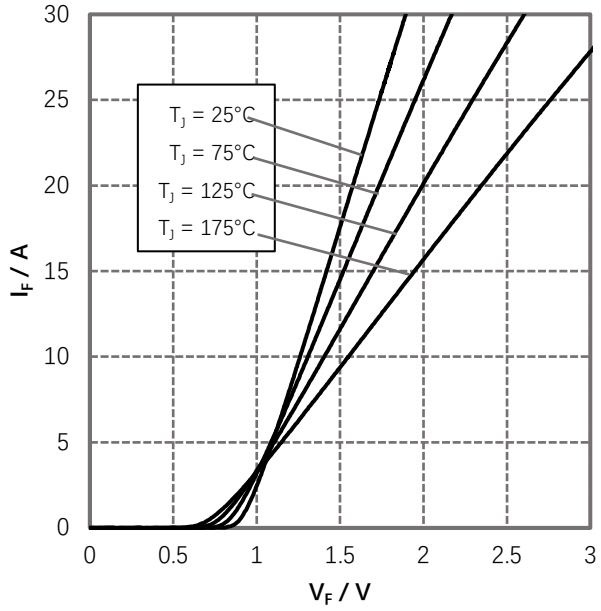


Figure 1. Forward Characteristics

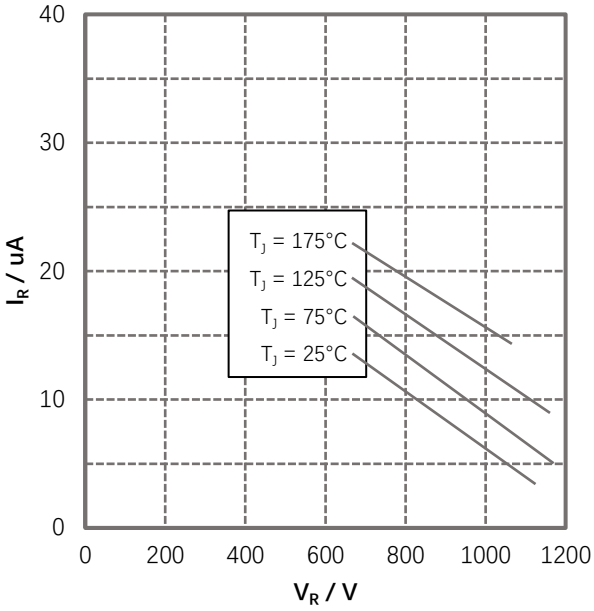


Figure 2. Reverse Characteristics

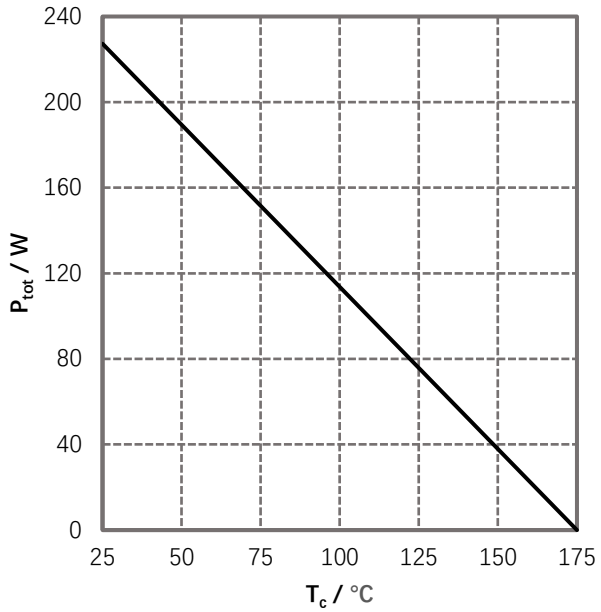


Figure 3. Power Derating

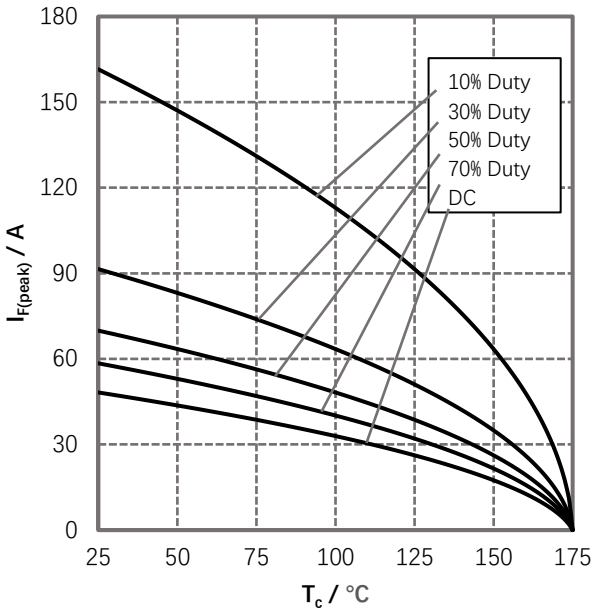


Figure 4. Current Derating

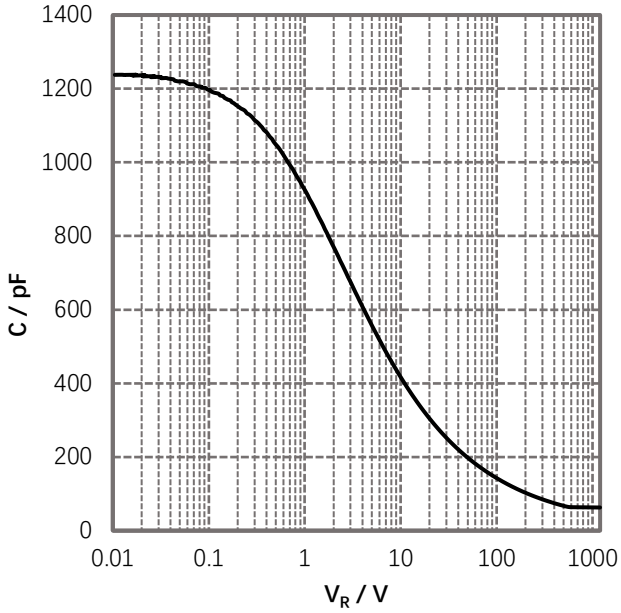


Figure 5. Capacitance vs. Reverse Voltage

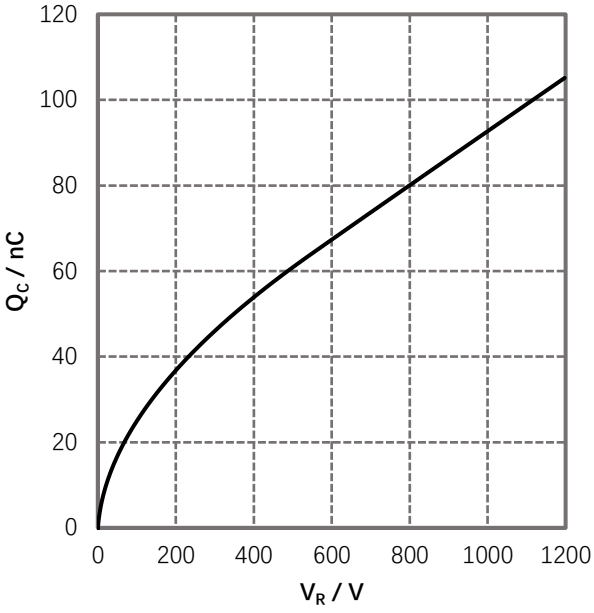


Figure 6. Reverse Charge vs. Reverse Voltage

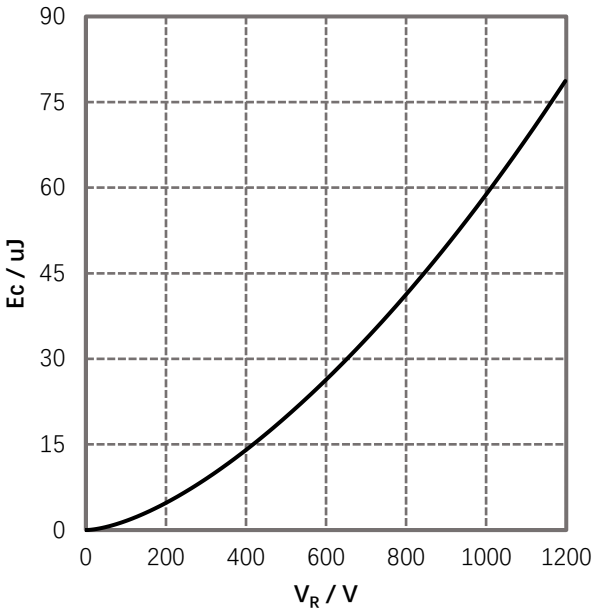


Figure 7. Capacitance Stored Energy

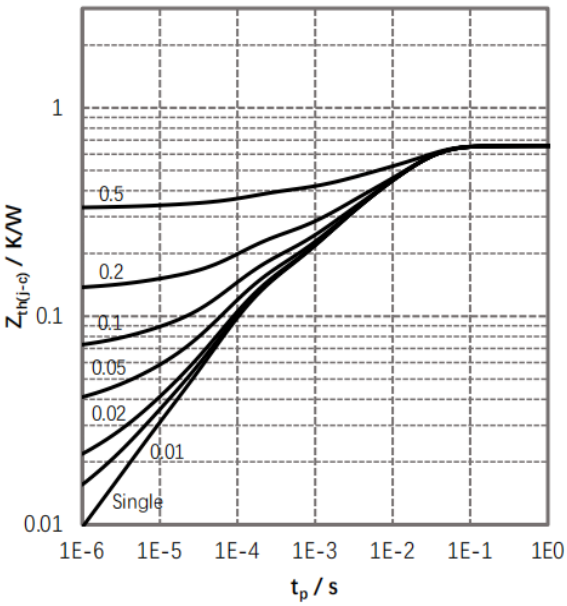
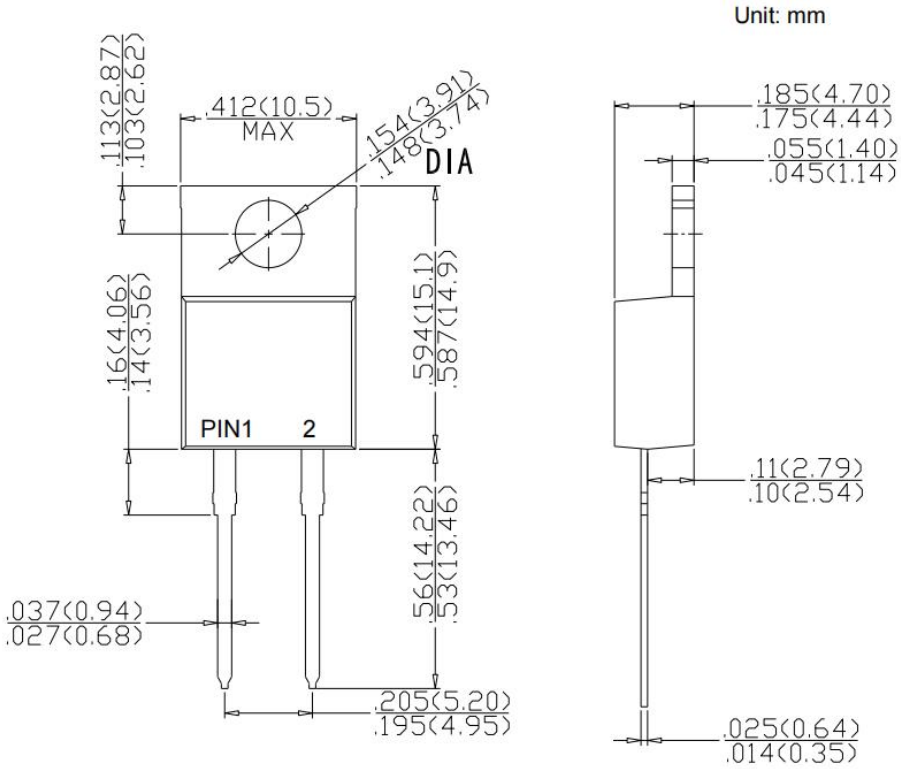


Figure 8. Transient Thermal Impedance

Package Outlines(Unit:mm)

TO-220AC



***Important Usage Information and Disclaimer**

The specifications of Zhuhai Hypersemi Co., Ltd. products are not guarantees of product characteristics. They reflect typical performance expected in standard applications, which may vary with specific uses. Users must conduct prior testing for their applications and make necessary adjustments.
Users are responsible for the safety of applications utilizing our products and must implement adequate safety measures to prevent physical injury, fire, or other risks in case of product failure. It is the user's duty to ensure that application designs comply with all applicable laws and standards. Our products must not be used in any applications where a product failure could reasonably result in personal injury, unless specifically authorized in a signed document by Zhuhai Hypersemi Co., Ltd.
No representations or warranties are made regarding the accuracy or completeness of this information, including any claims of non-infringement of third-party intellectual property rights. Zhuhai Hypersemi Co., Ltd. assumes no liability for any applications or uses of its products and does not grant any licenses to its intellectual property rights or those of others. We also make no claims regarding non-infringement of third-party intellectual property rights that may arise from applications.
Due to technical requirements, our products may contain hazardous substances. For details, please contact your nearest sales office. This document replaces all previous information and may be updated. We reserve the right to make changes.