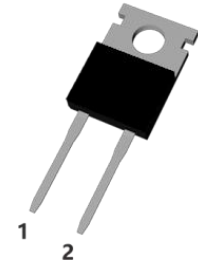


**Silicon Carbide Schottky Diode**

Parameter	Value	Unit
$V_{RRM}$	1700	V
$I_F$	10	A
$Q_C$	120	nC



TO-220AC

**Features**

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

**Applications**

- Motor drives
- Photovoltaic inverters
- Uninterruptible Power Supply
- High-voltage DC-DC converter

**Maximum Ratings** (at  $T_J=25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	$V_{RRM}$	1700	V
Surge Peak Reverse Voltage	$V_{RSM}$	1700	V
Continuous Forward Current $T_C = 25^\circ\text{C}$ $T_C = 135^\circ\text{C}$ $T_C = 167^\circ\text{C}$	$I_F$	52.5 25.6 10	A
Repetitive Peak Forward Surge Current $T_C = 25^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Pulse, $D=0.1, 1000\text{Cycle}$	$I_{FRM}$	100	A
Non-Repetitive Forward Surge Current $T_C = 25^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Pulse	$I_{FSM}$	200	A
$i^2t$ Value $T_C = 25^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Pulse	$\int i^2 dt$	200	$\text{A}^2\text{s}$
Power dissipation $T_C = 25^\circ\text{C}$ $T_C = 110^\circ\text{C}$	$P_{tot}$	349 151	W
Operating junction Range	$T_j$	-55 to +175	$^\circ\text{C}$
Storage temperature Range	$T_{stg}$	-55 to +175	$^\circ\text{C}$

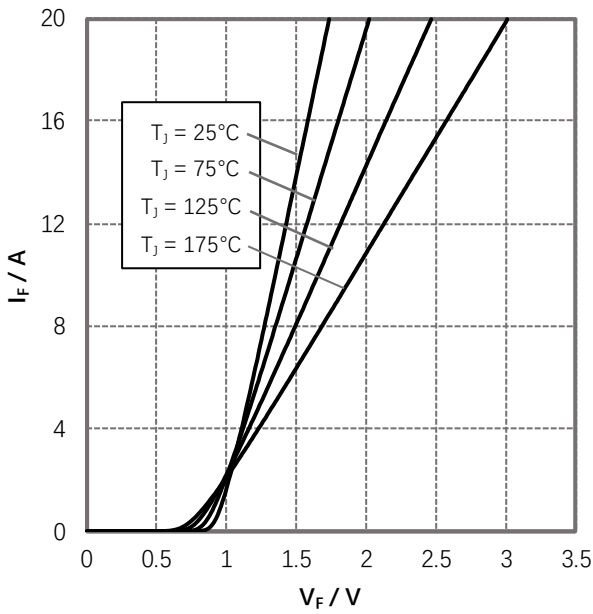
**Thermal Characteristics**

Parameter	Symbol	Typ.	Unit
Thermal resistance, junction – case.	$R_{thJC}$	0.43	°C/W

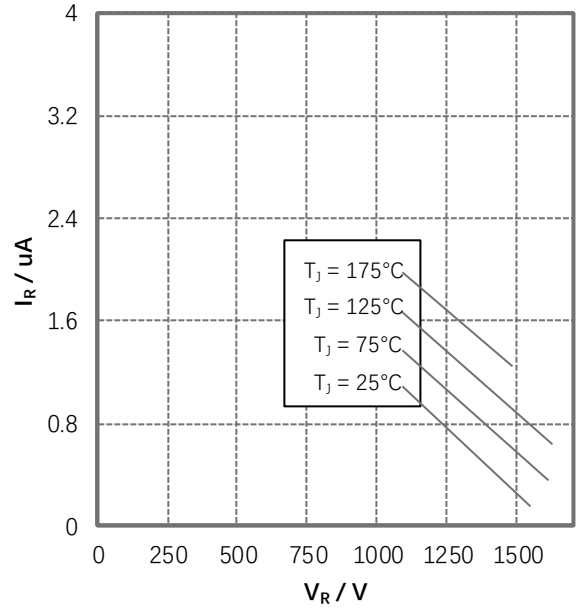
**Electrical Characteristics**(at  $T_J=25^{\circ}\text{C}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
DC Blocking Voltage	$V_{DC}$		1700			V
Instantaneous forward voltage per leg	$V_F$	$I_F=10\text{A}$ $T_J=25^{\circ}\text{C}$ $T_J=175^{\circ}\text{C}$		1.36 1.89	1.7 2.5	V
Reverse current per leg	$I_R$	$V_R=1700\text{V}$ $T_J=25^{\circ}\text{C}$ $T_J=175^{\circ}\text{C}$		0.35 2.76	50 100	uA
Total Capacitance	$C$	$f=1\text{MHZ}$ $V_R=0\text{V}$ $V_R=400\text{V}$ $V_R=800\text{V}$		1400 94 68		pF
Total Capacitive Charge	$Q_C$	$V_R=1200\text{V}$ $T_J=25^{\circ}\text{C}$		120		nC
Capacitance Stored Energy	$E_C$	$V_R=1200\text{V}$		91		uJ

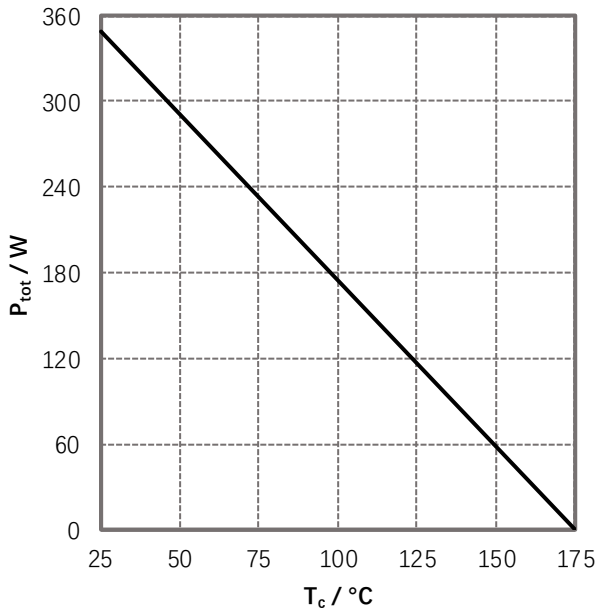
**Typical Characteristics**



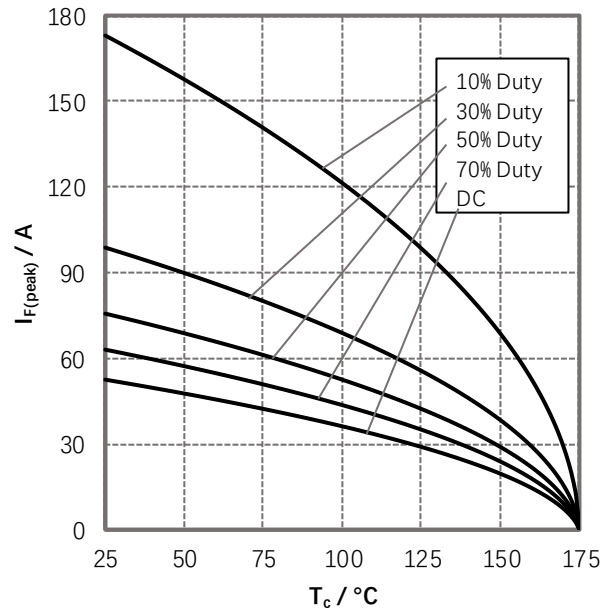
**Figure 1. Forward Characteristics**



**Figure 2. Reverse Characteristics**



**Figure 3. Power Derating**



**Figure 4. Current Derating**  
Valid for switching of above 20kHz,  
excluding D.C. curve

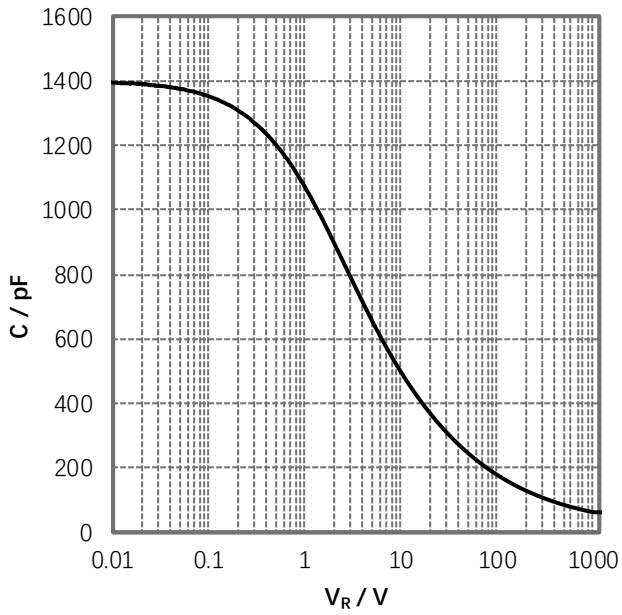


Figure 5. Capacitance vs. Reverse Voltage

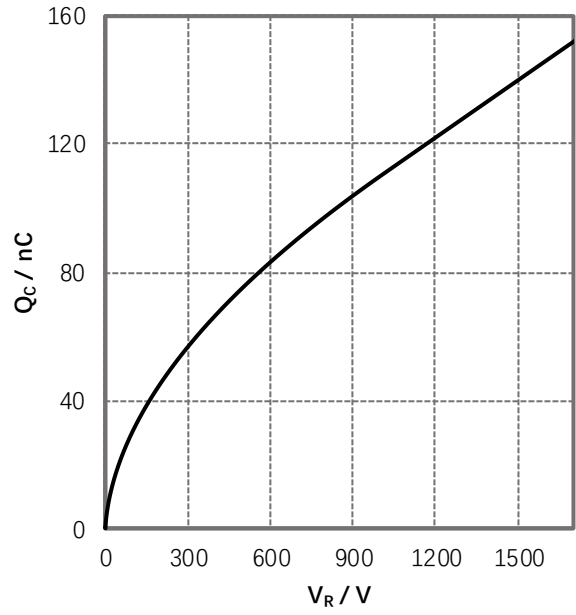


Figure 6. Reverse Charge vs. Reverse Voltage

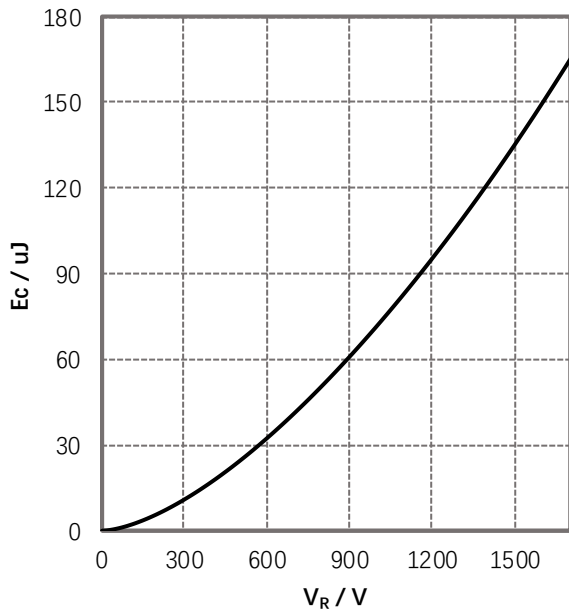


Figure 7. Capacitance Stored Energy

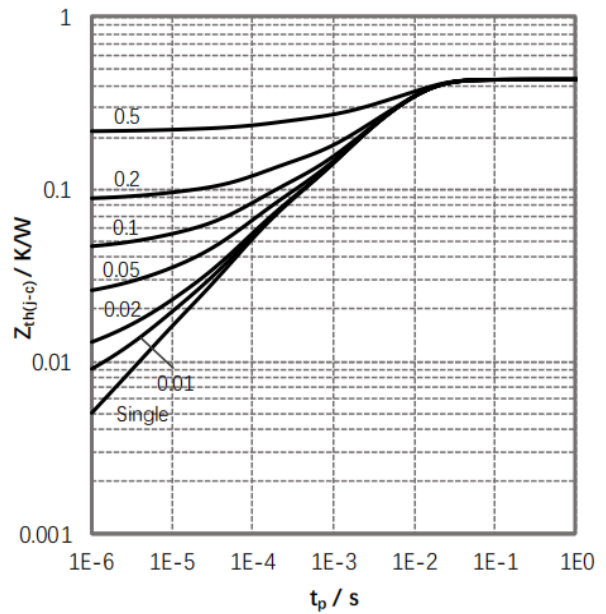
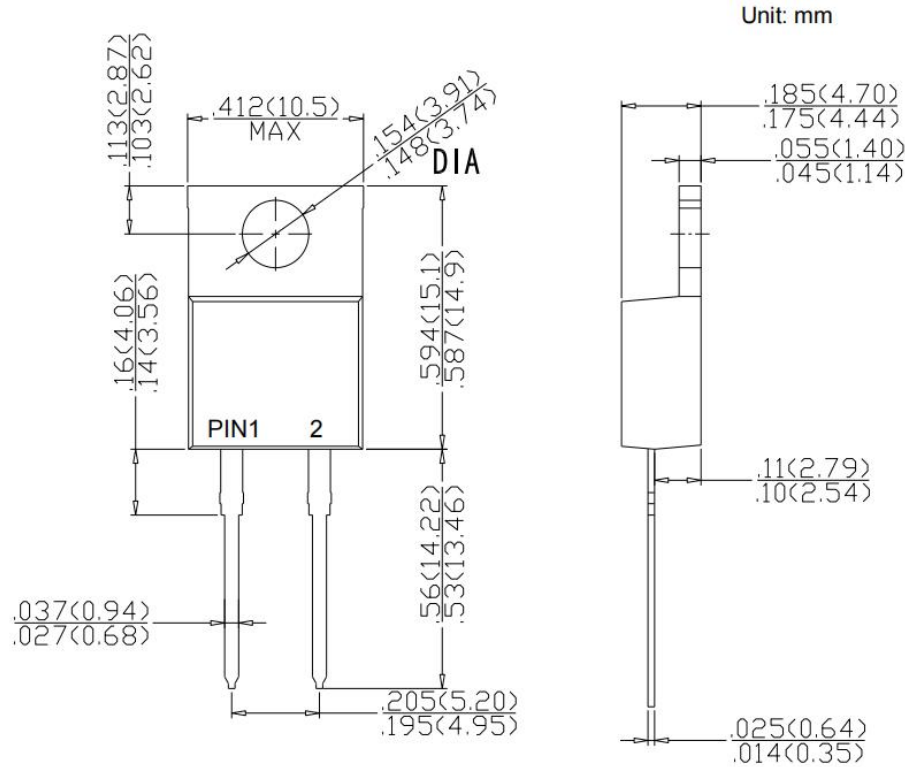


Figure 8. Transient Thermal Impedance

**Package Outlines(Unit:mm)**

**TO-220AC**



**\*Important Usage Information and Disclaimer**

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