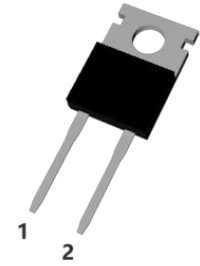
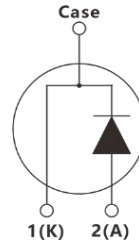


**Silicon Carbide Schottky Diode**

Parameter	Value	Unit
$V_{RRM}$	650	V
$I_F$	8	A
$Q_C$	32	nC



TO-220AC

**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 Converter

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

Parameter	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	$V_{RRM}$	650	V
Surge Peak Reverse Voltage	$V_{RSM}$	650	V
Maximum DC Blocking Voltage	$V_{DC}$	650	V
Continuous Forward Current $T_C = 25^\circ\text{C}$ $T_C = 135^\circ\text{C}$ $T_C = 153.5^\circ\text{C}$	$I_F$	30 12.5 8	A
Non-Repetitive Forward Surge Current $T_C = 25^\circ\text{C}, t_p = 8.3\text{ms}, \text{Half Sine Pulse}$	$I_{FSM}$	100	A
Power dissipation $T_C = 25^\circ\text{C}$ $T_C = 110^\circ\text{C}$	$P_{tot}$	115 50	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.	$R_{thJC}$	1.3	$^{\circ}C/W$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Instantaneous forward voltage per leg	$V_F$	$I_F=8A, T_J=25^{\circ}C$ $I_F=8A, T_J=175^{\circ}C$		1.30 1.60	1.7 2.0	V
Reverse current per leg	$I_R$	$V_R=650V, T_J=25^{\circ}C$ $V_R=650V, T_J=175^{\circ}C$		0.35 2.4	50 100	$\mu A$
Total Capacitance	C	$V_R=0V, T_J=25^{\circ}C$ $f=1MHz$		617		pF
Total Capacitive Charge	$Q_C$	$V_R=400V, I_F=8A$ $di/dt=200A/\mu s$ $T_J=25^{\circ}C$		32		nC

### Typical Characteristics

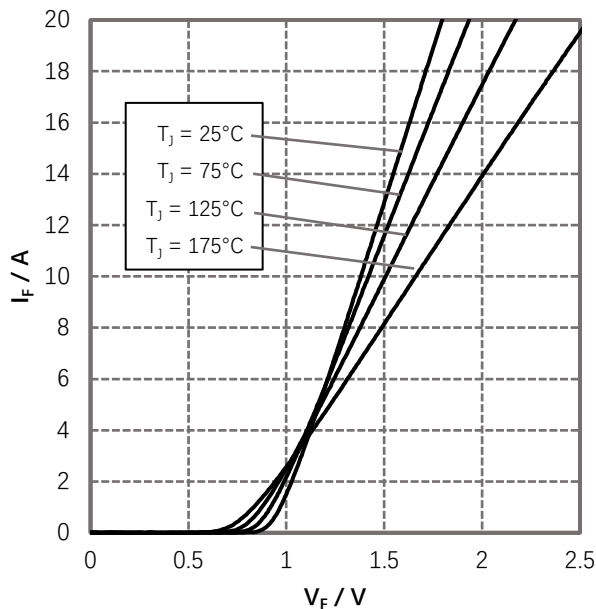


Fig 1. Typical forward characteristics

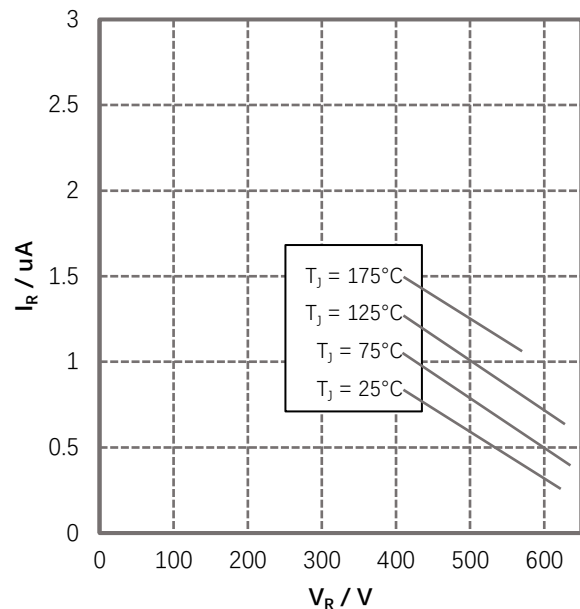


Fig 2. Typical reverse current as function of reverse voltage

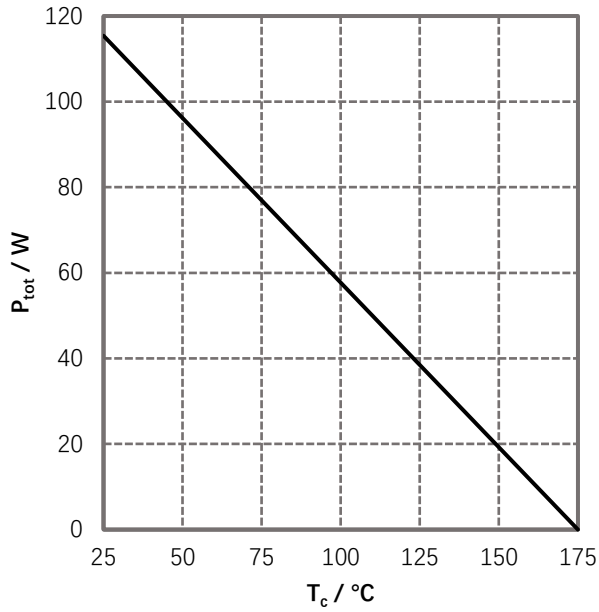


Fig 3. Power Derating

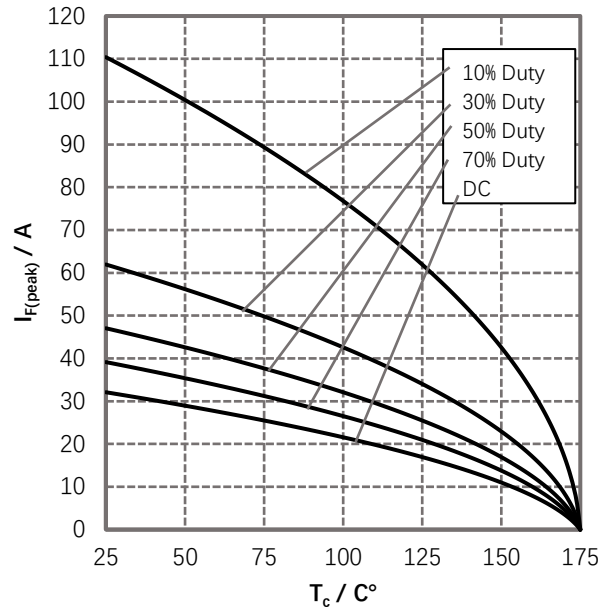


Fig 4. Current Derating

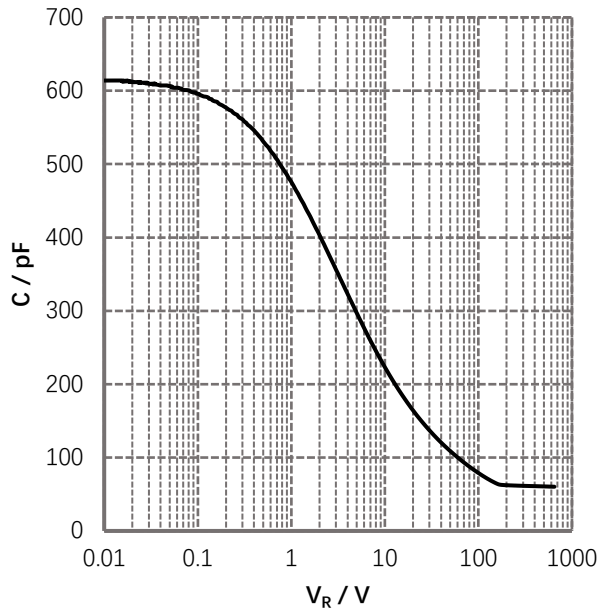


Fig 5. Typical capacitance as function of reverse voltage,  $C=f(V_R)$ ;  $T_j=25^\circ\text{C}$ ;  $f=1\text{ MHz}$

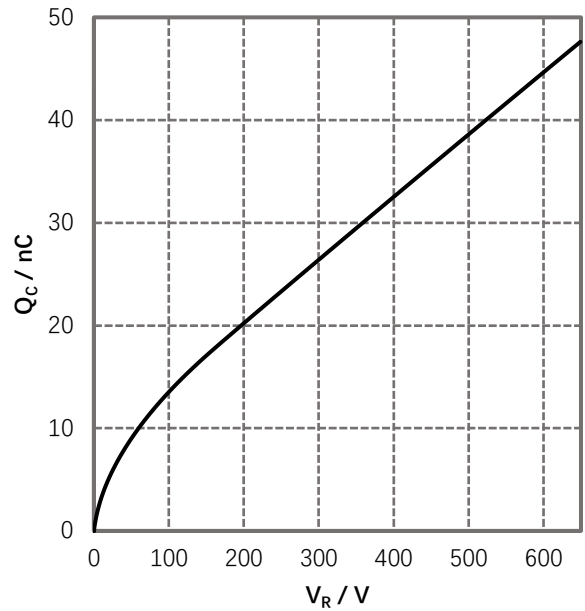


Fig 6. Typical reverse charge as function of reverse voltage

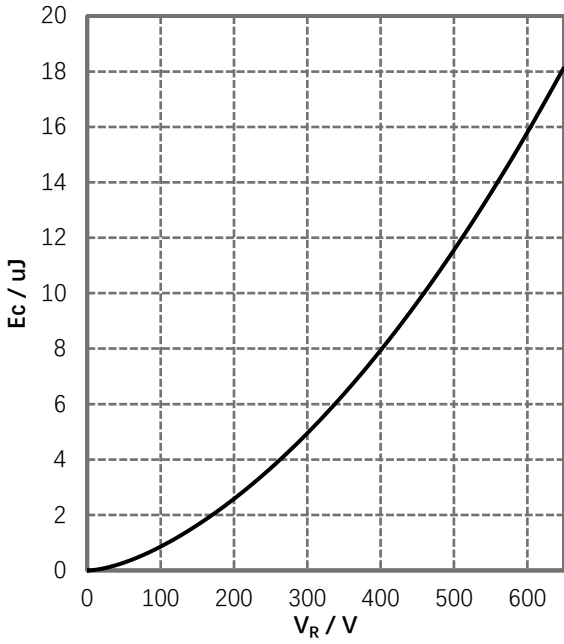


Fig 7. Capacitance Stored Energy

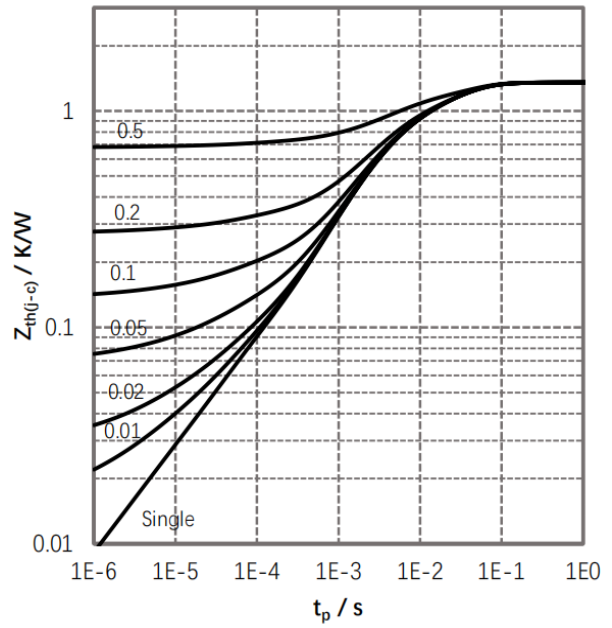
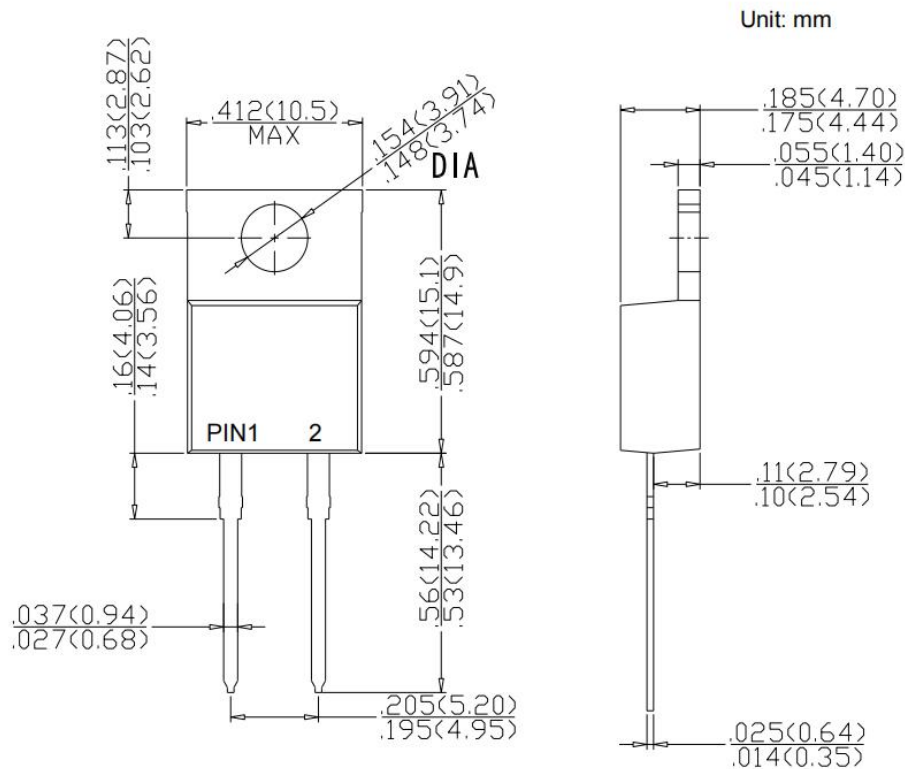


Fig 8. Transient Thermal Impedance

**Package Outlines(Unit:mm)**

**TO-220AC**



**\*Important Usage Information and Disclaimer**

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