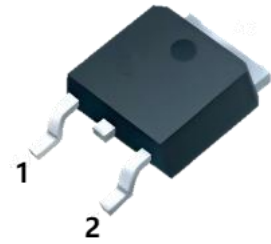
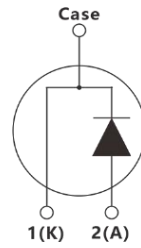


Silicon Carbide Schottky Diode

Parameter	Value	Unit
V_{RRM}	650	V
I_F	8	A
Q_C	33	nC



TO-252

Features

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

Applications

- Fast charging
- Switched-Mode Power Supply
- Power Factor Correction
- LED lighting driver

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
Continuous Forward Current $T_C=25^\circ\text{C}$ $T_C=160^\circ\text{C}$	I_F	30 8	A
Non-Repetitive Forward Surge Current $T_C=25^\circ\text{C}$, $t_p = 10\text{ms}$, Half Sine Pulse	I_{FSM}	60	A
Power dissipation $T_C=25^\circ\text{C}$, $T_J=175^\circ\text{C}$	P_{tot}	83	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}	1.8	$^{\circ}C/W$

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

Parameter	Symbol	Test conditions	Value			Unit
			Min.	Typ.	Max.	
DC blocking voltage	V_{DC}		650			V
Diode forward voltage	V_F	$I_F=8A$ $T_J=25^{\circ}C$ $I_F=8A$ $T_J=175^{\circ}C$		1.25 1.31	1.56	V
Reverse current	I_R	$V_R=650V$ $T_J=25^{\circ}C$ $V_R=650V$ $T_J=175^{\circ}C$			50 200	μA
Total capacitive charge	Q_C	$V_R=650V$ $T_J=25^{\circ}C$		33		nC
Total capacitance	C	$V_R=1V$ $f=1MHz$ $V_R=650V$ $f=1MHz$		405 33		pF

Typical Characteristics

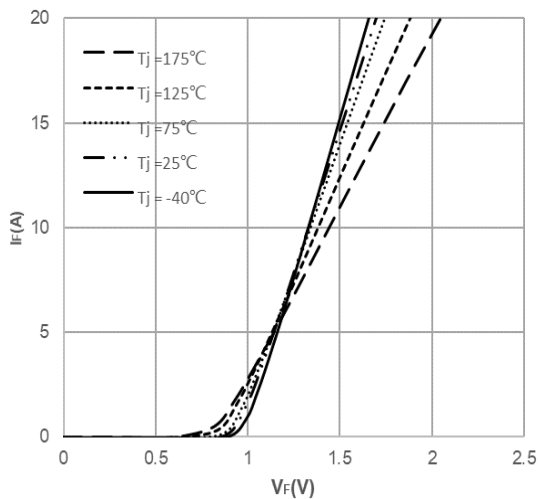


Fig1. Forward Characteristics

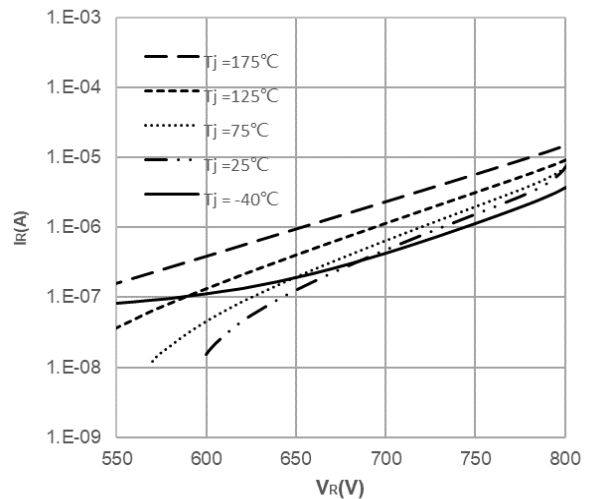


Fig2. Reverse Characteristics

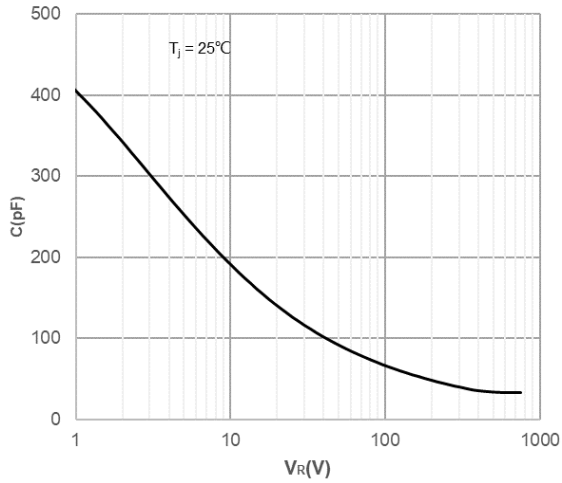


Fig3. Capacitance vs. Reverse Voltage

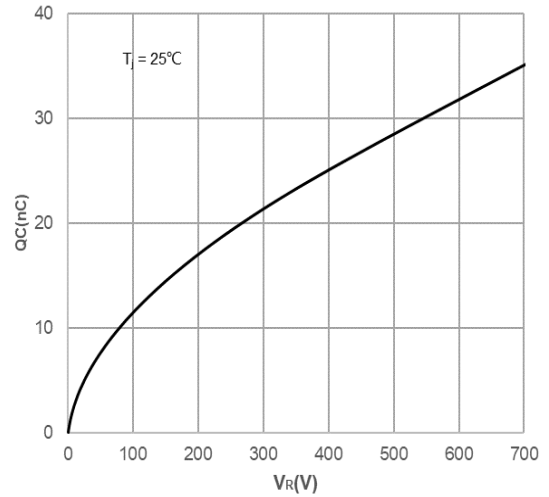
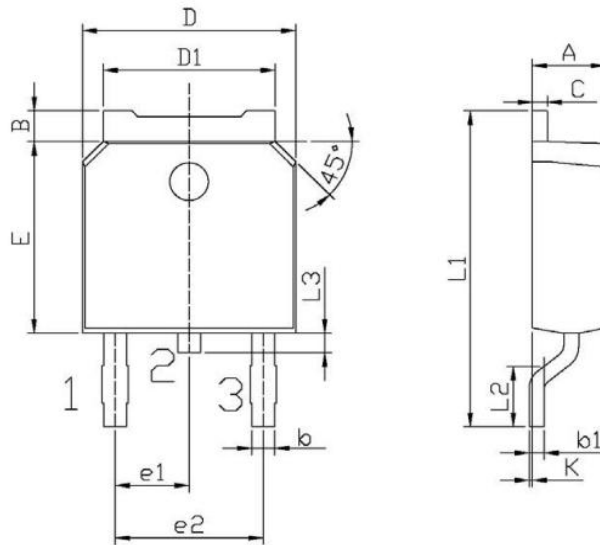


Fig4. Recovery Charge vs. Reverse Voltage

Package Outlines(Unit:mm)

TO-252

Unit: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	2.20	2.40	E	5.95	6.25
B	0.95	1.25	e1	2.24	2.34
b	0.70	0.90	e2	4.43	4.73
b1	0.45	0.55	L1	9.85	10.35
C	0.45	0.55	L2	1.25	1.75
D	6.45	6.75	L3	0.60	0.90
D1	5.20	5.40	K	0.00	0.10

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