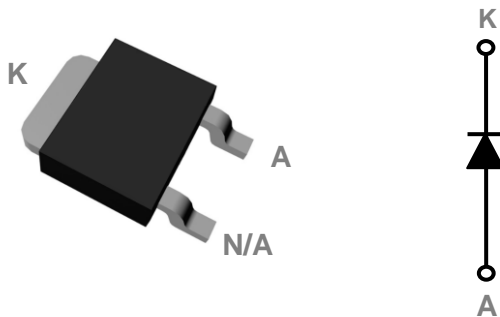


General Description

These 650V high performance series of SiC schottky diodes are using the most advanced technology to suit for high frequency and high efficiency power systems with extreme low reverse recovery charge and can be stand up to 175°C maximum junction temperature.

V_{BR}	$I_F (T_C = 150^\circ\text{C})$	Q_C
650V	8A	16nC

TO252-2L Pin Configuration



Features

- 650V , 8A , 175°C junction temperature
- Extremely fast switching
- Ultra Low Reverse Recovery Current
- Positive temperature coefficient
- Green device available

Applications

- Switching mode power supplies
- Motor drives
- Power Converters
- PFC, Power factor correction

Absolute Maximum Ratings ($T_C=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Rating	Units
V_R	DC Peak Reverse Voltage, $T_J=25^\circ\text{C}$	650	V
V_{RRM}	Repetitive Peak Reverse Voltage, $T_J=25^\circ\text{C}$	650	V
V_{RSM}	Surge Peak Reverse Voltage, $T_J=25^\circ\text{C}$	650	V
I_F	Continuous Forward Current, $T_C=25^\circ\text{C}$	21	A
	Continuous Forward Current, $T_C=150^\circ\text{C}$	8	A
I_{FSM}	Non-Repetitive Forward Surge current $T_C = 25^\circ\text{C}$, $T_P=10\text{ms}$ Half Sine Pulse	47	A
T_J	Maximum operating Junction Temperature Range	175	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to 175	$^\circ\text{C}$

Thermal Characteristics

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JC}$	Thermal Resistance Junction to Case	---	3.1	$^\circ\text{C} / \text{W}$

Electrical Characteristics ($T_J=25^\circ\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
VDC	DC Blocking Voltage	$I_R=100\mu\text{A}$, $T_J=25^\circ\text{C}$	650	---	---	V
V_F	Forward Voltage	$I_F=8\text{A}$, $T_J=25^\circ\text{C}$	---	1.45	1.8	V
		$I_F=8\text{A}$, $T_J=175^\circ\text{C}$	---	1.8	2.2	V
I_R	Reverse Current	$V_R=650\text{V}$, $T_J=25^\circ\text{C}$	---	---	40	μA
		$V_R=650\text{V}$, $T_J=175^\circ\text{C}$	---	---	160	μA
Q_C	Total Capacitive Charge	$V_R=400\text{V}$, $I_F=8\text{A}$ $di/dt=300\text{A}/\mu\text{s}$, $T_J=25^\circ\text{C}$	---	16	---	nC
C	Total Capacitance	$V_R=1\text{V}$, $f=1\text{MHz}$	---	300	---	pF
		$V_R=200\text{V}$, $f=1\text{MHz}$	---	48	---	
		$V_R=400\text{V}$, $f=1\text{MHz}$	---	48	---	

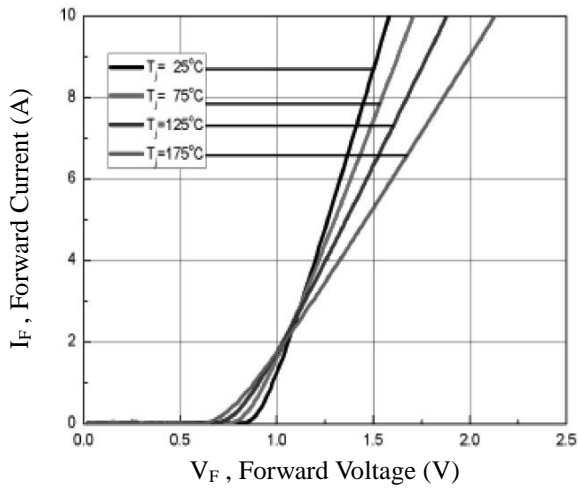


Fig.1 Forward Characteristics

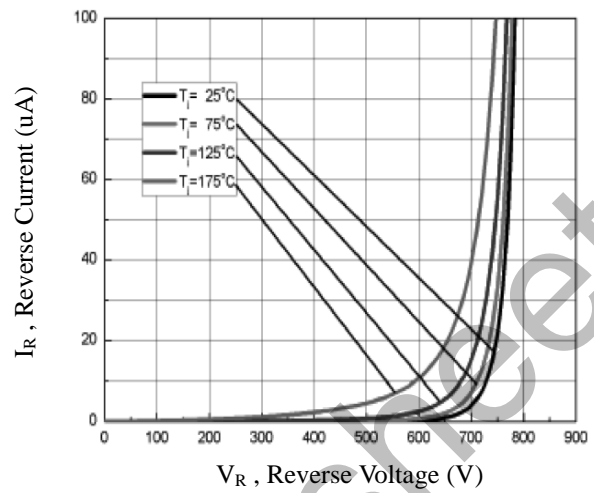


Fig.2 Reverse Characteristics

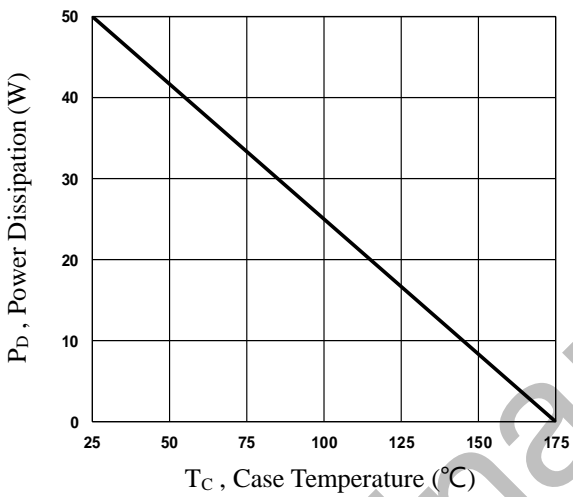


Fig.3 Power Dissipation

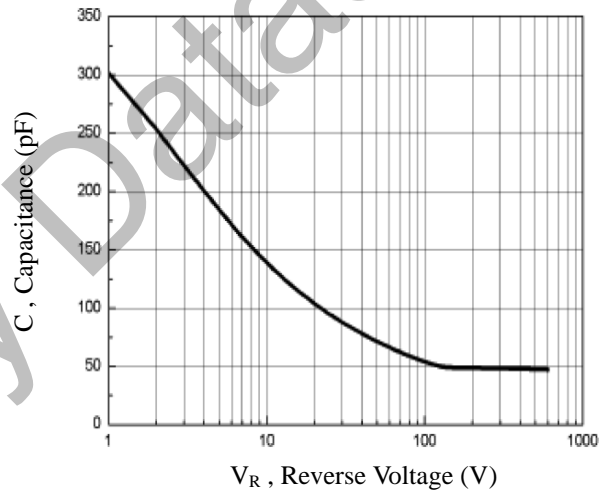
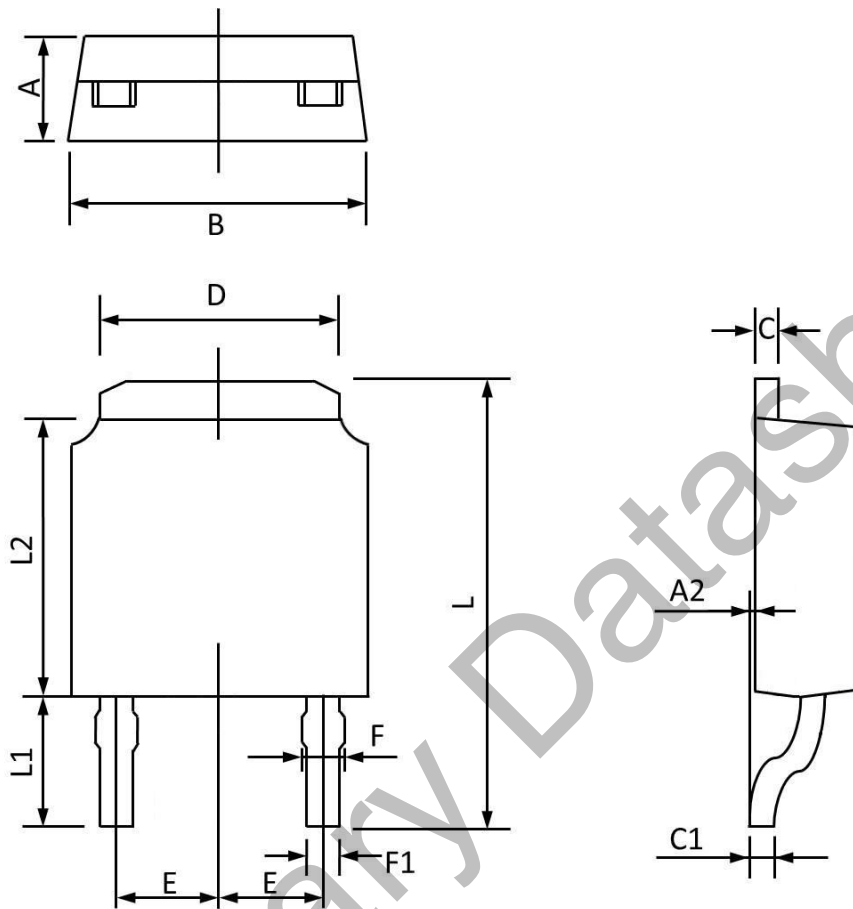


Fig.4 Capacitance Characteristics

TO252-2L PACKAGE INFORMATION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MAX	MIN	MAX	MIN
A	2.400	2.200	0.094	0.087
A2	0.130	0.000	0.005	0.000
B	6.735	6.400	0.265	0.252
C	0.580	0.460	0.023	0.018
C1	0.508BSC		0.020BSC	
D	5.460	5.210	0.215	0.205
E	2.286BSC		0.090BSC	
F	1.140	0.770	0.045	0.030
F1	0.880	0.640	0.035	0.025
L	10.40	9.400	0.409	0.370
L1	2.743REF		0.108REF	
L2	6.230	6.000	0.245	0.236