

**Silicon Carbide Schottky Diode**

Parameter	Value	Unit
$V_{RRM}$	650	V
$I_F$	30	A
$Q_C$	118	nC



TO-220F-2L

**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
Continuous Forward Current $T_C = 25^\circ\text{C}$ $T_C = 122^\circ\text{C}$	$I_F$	58 30	A
Non-Repetitive Forward Surge Current $T_C = 25^\circ\text{C}, t_p = 10\text{ms}, \text{Half Sine Pulse}$	$I_{FSM}$	225	A
Power dissipation $T_C = 25^\circ\text{C}, T_J = 175^\circ\text{C}$	$P_{tot}$	115	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.	$R_{thJC}$	31.3	$^{\circ}C/W$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
DC Blocking Voltage	$V_{DC}$		650			V
Instantaneous forward voltage per leg	$V_F$	$I_F=8A, T_J=25^{\circ}C$ $I_F=8A, T_J=175^{\circ}C$		1.26 1.49	1.51	V
Reverse current per leg	$I_R$	$V_R=650V, T_J=25^{\circ}C$ $V_R=650V, T_J=175^{\circ}C$			50 200	$\mu A$
Total Capacitance	C	$T_J=25^{\circ}C$ $V_R=1V, f=1MHz$ $V_R=650V, f=1MHz$		1500 114		pF
Total Capacitive Charge	$Q_C$	$V_R=650V, T_J=25^{\circ}C$		118		nC

### Typical Characteristics

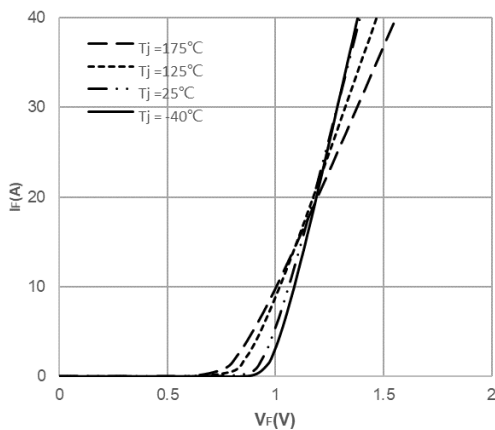


Fig1. Forward Characteristics

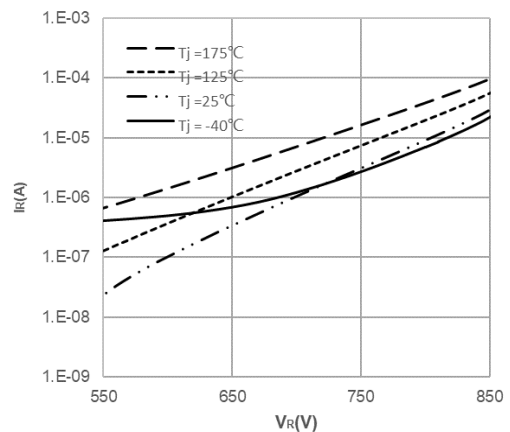


Fig2. Reverse Characteristics

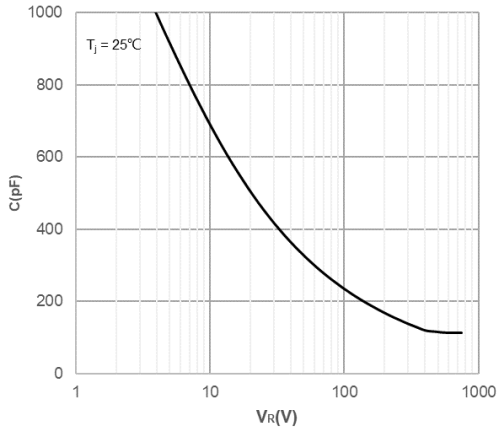


Fig3. Capacitance vs. Reverse Voltage

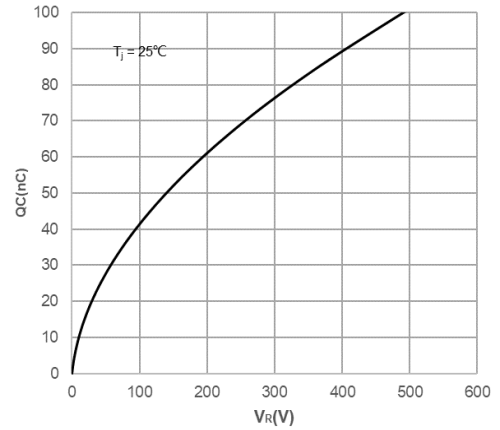
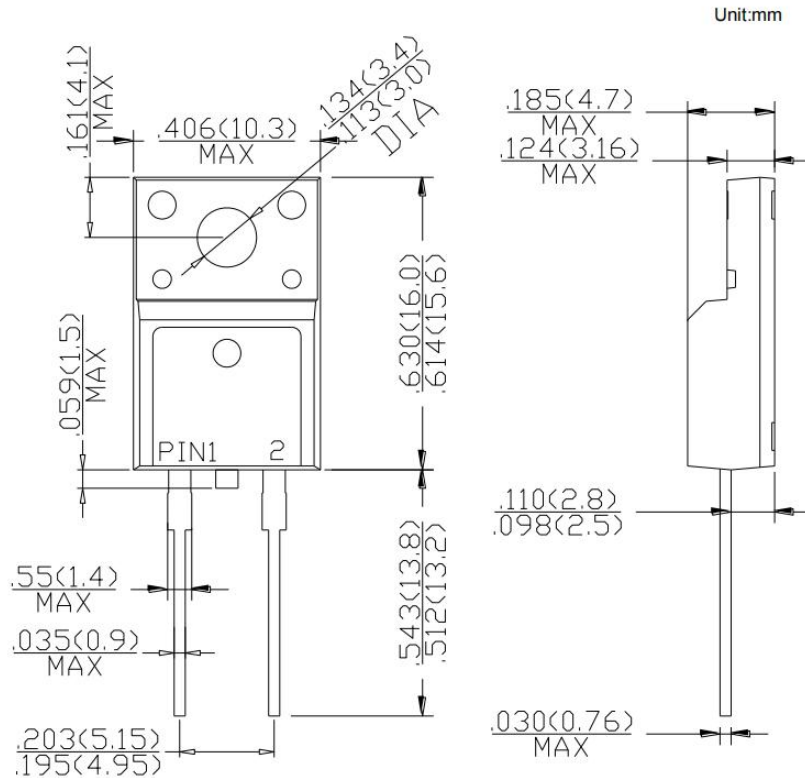


Fig4. Recovery Charge vs. Reverse Voltage

**Package Outlines(Unit:mm)**

**TO-220F-2L**



**\*Important Usage Information and Disclaimer**

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