



SiC Schottky Diode

Product Summary

V_{RRM}	650V
$I_F(T_c 158^\circ\text{C})$	10A
Q_c	25 nC

Features

- Low conduction loss due to low VF
- Extremely low switching loss by tiny QC
- Essentially No Switching Losses
- Increased Power Density
- Enabling Higher Switching Frequency
- Lead Free Finish, RoHS Compliant

Applications

- Switch Mode Power Supplies
- Uninterruptible Power Supplies
- Motor Drivers
- Power factor correction

Packing Marking And Ordering Information

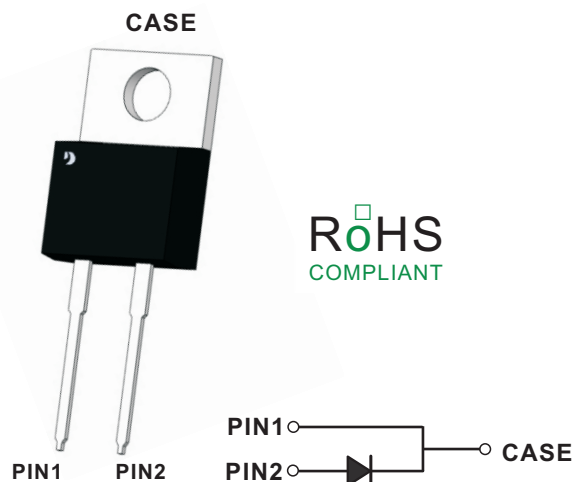
Device Package	Device	Marking	Packing Type	QTY Per Tube	Inner box	Per Carton
TO-220ACW	SC10065C	SC10065C	Tube	50 Pcs	2,500 Pcs	5,000 Pcs

Maximum Ratings

Ratings At 25°C Ambient Temperature Unless Otherwise Specified

Parameter	Symbols	SC10065C	Test Conditions	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	650	$T_c=25^\circ\text{C}$	V
Surge Peak Reverse Voltage	V_{RSM}	650	$T_c=25^\circ\text{C}$	V
Maximum DC Blocking Voltage	V_{DC}	650	$T_c=25^\circ\text{C}$	V
Forward Current	I_F	38 19 10	$T_c \leq 25^\circ\text{C}$ $T_c \leq 135^\circ\text{C}$ $T_c \leq 158^\circ\text{C}$	A
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)(Per leg)	I_{FSM}	86	$T_c=25^\circ\text{C}$, $T_p=8.3\text{ms}$, Half Sine Wave	A
Power Dissipation	PD	93	$T_c=25^\circ\text{C}$	W
Operating Junction Temperature Range	T_j	-55 ~ +175		$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 ~ +175		$^\circ\text{C}$

TO-220ACW





Electrical Characteristics

Ratings At 25°C Ambient Temperature Unless Otherwise Specified

Parameter	Symbols	Test Conditions	Min	Typ	Max	Units
Instantaneous forward voltage per leg	V_F	$I_F=10A, T_J=25^\circ C$ $I_F=10A, T_J=175^\circ C$		1.27 1.38	1.5 1.6	V
Reverse current per leg	I_R	$V_R=650V, T_J=25^\circ C$ $V_R=650V, T_J=175^\circ C$		6 -	50 200	μA
Total Capacitance	C	$V_R=0V, T_J=25^\circ C, f=1MHz$		640		pF
Total Capacitive Charge	Q_C	$V_R=400V, I_F=10A$ $di/dt=200A/\mu s, T_J=25^\circ C$		25		nC

Thermal Characteristics

Parameter	Symbols	TYP	Units
Thermal Resistance from Junction to Case	$R_{\theta JC}$	1.6	$^\circ C/W$

Typical Performance

Figure 1. Total Capacitance vs. Reverse Voltage

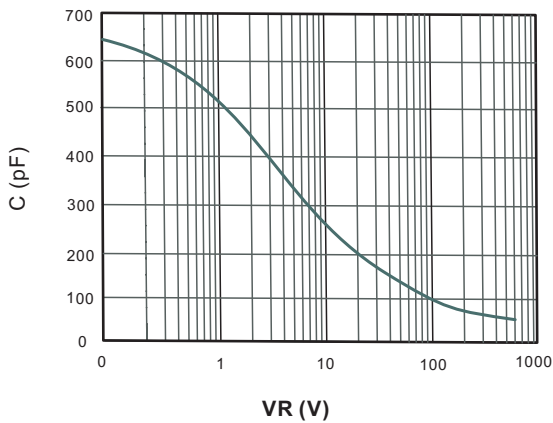


Figure 2. Total Capacitive Charge vs. Reverse Voltage

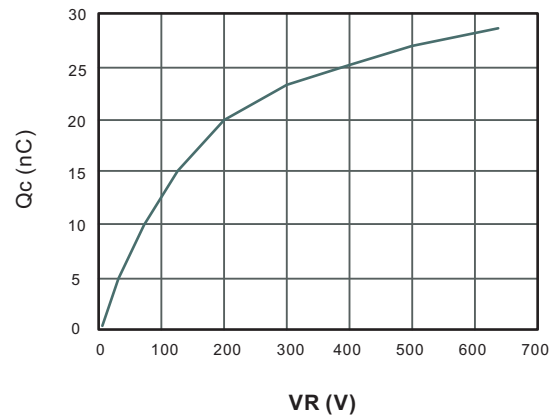




Fig.3 Typical Forward Current Derating Curve

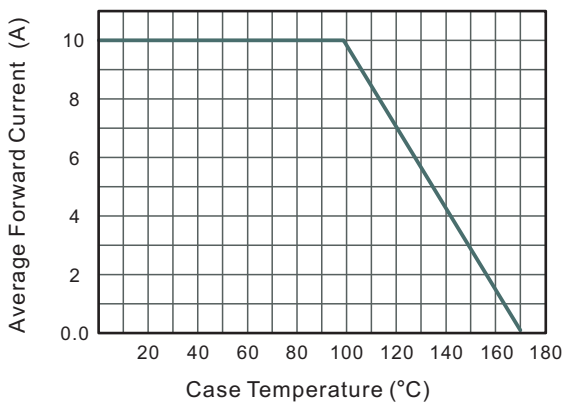


Fig.4 Power Dissipation

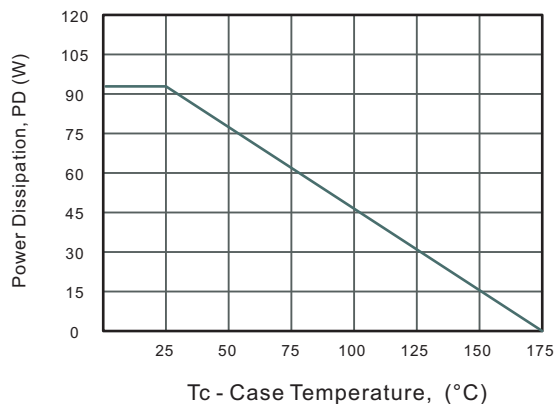


Fig.5 Typical Forward Characteristic(per leg)

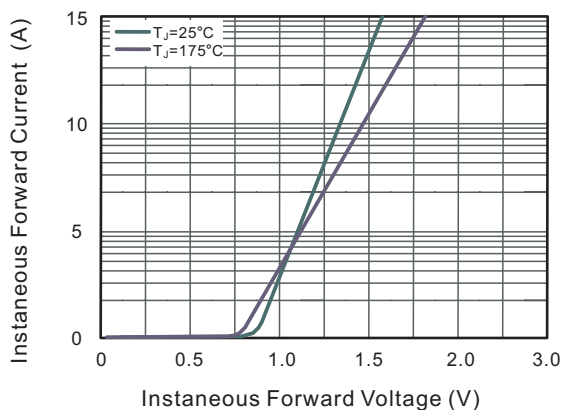


Fig.6 Typical Reverse Characteristics

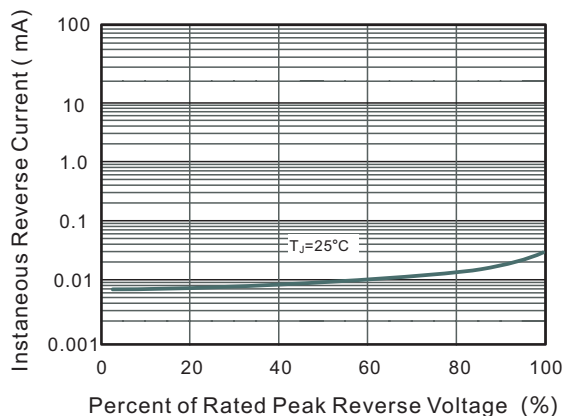


Fig.7 Max. Transient Thermal Impedance

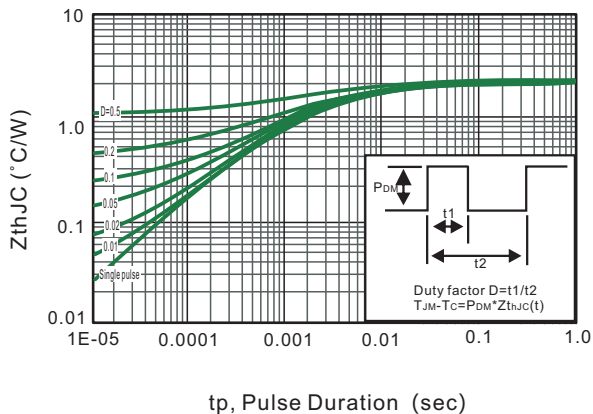
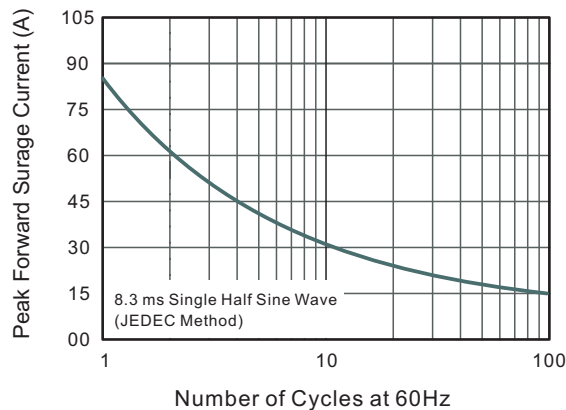


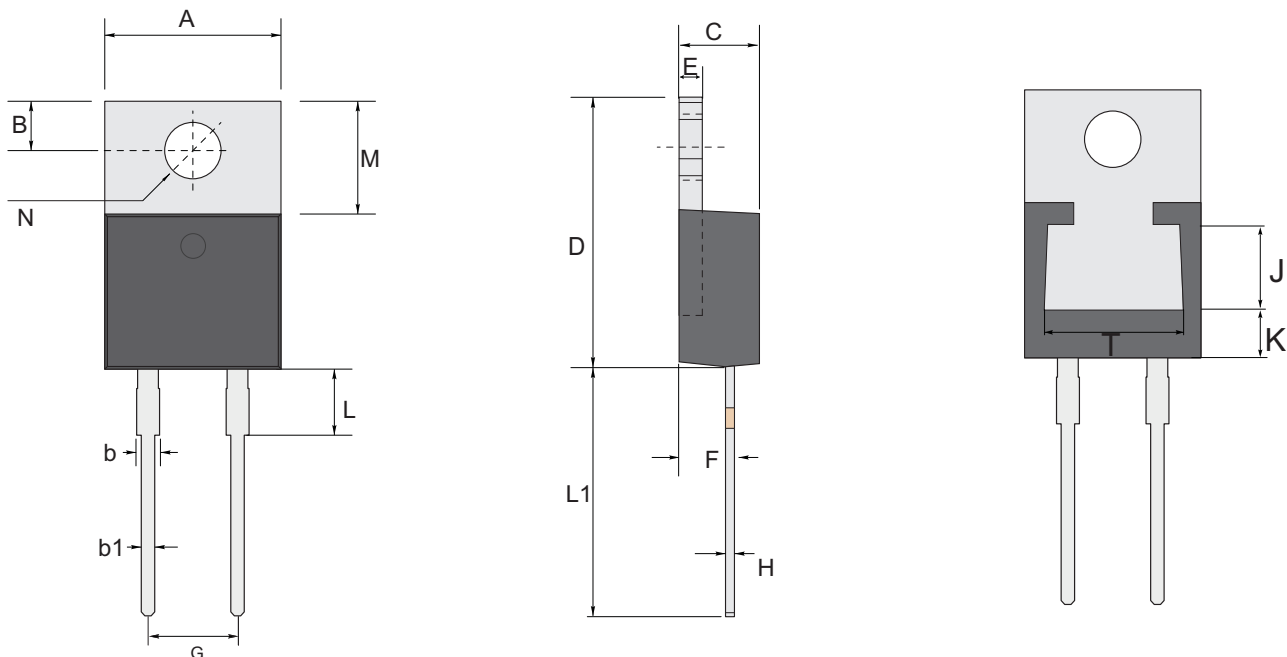
Fig.8 Maximum Non-Repetitive Peak Forward Surge Current





Package Outline
Through Hole Package ; 2 leads

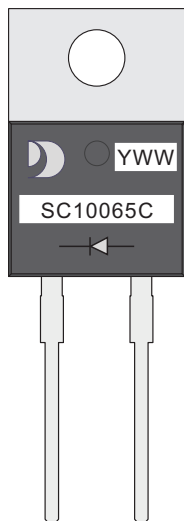
TO-220ACW



TO-220ACW mechanical data

UNIT		A	B	b	b1	C	D	E	F	G	H	L	L1	M	N	J	T	K
mm	max	10.45	2.94	1.77	0.94	4.76	16.0	1.40	3.37	5.1 typ.	0.64	4.20	14.79	6.39 typ.	3.84 typ.	4.65 ref.	7.7 ref.	3.22 ref.
	typ	9.94	2.74	1.27	0.81	4.57	15.09	1.27	3.07		0.38	3.89	13.18					
	min	9.85	2.54	1.14	0.62	4.42	14.6	1.14	2.77		0.35	2.80	13.08					
mil	max	411	116	70	37	187	630	55	133	201 typ.	25	165	582	252 typ.	151 typ.	183 ref.	303 ref.	127 ref.
	typ	391	108	50	32	180	594	50	121		15	153	519					
	min	388	100	45	24	174	575	45	109		14	110	515					

MARKING DIAGRAM



YWW: Date Code
Y: Years(0~9)
WW: Week
SC10065C: Product name
(NOTE: The weekly code is based on the actual number of weeks in the calendar year.)



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