



SiC Schottky Diode

Product Summary

V_{RRM}	650V
$I_F(T_C 148^\circ\text{C})$	20A
Q_C	41 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

Applications

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

Mechanical data

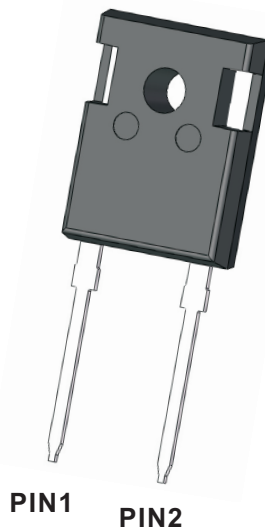
- Case: TO-247-2L
- Approx. Weight: 6.0g (0.21oz)
- RoHS compliant
- Case Material: "Green" molding compound, UL flammability classification 94V-0, "Halogen-free".

Maximum Ratings

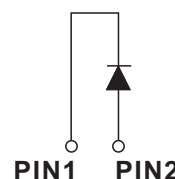
Ratings At 25°C Ambient Temperature Unless Otherwise Specified

Parameter	Symbols	SC20065W	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	56	$T_C \leq 25^\circ\text{C}$	A
		26	$T_C \leq 135^\circ\text{C}$	
		20	$T_C \leq 148^\circ\text{C}$	
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)(Per leg)	I_{FSM}	150	$T_C=25^\circ\text{C}$, $T_p=8.3\text{ms}$, Half Sine Wave	A
Power Dissipation	PD	187	$T_C=25^\circ\text{C}$	W
Operating Junction Temperature Range	T_j	-55 ~ +175		$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 ~ +175		$^\circ\text{C}$

TO-247-2L



RoHS
COMPLIANT





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	$I_F=20A, T_J=25^\circ C$ $I_F=20A, T_J=175^\circ C$		1.33 1.4	1.5 1.7	V
Reverse current per leg	I_R	$V_R=650V, T_J=25^\circ C$ $V_R=650V, T_J=175^\circ C$		3.7 40	100 400	μA
Total Capacitance	C	$V_R=0V, T_J=25^\circ C, f=1MHz$		1210		pF
Total Capacitive Charge	Q_C	$V_R=400V, I_F=20A$ $di/dt=200A/\mu s, T_J=25^\circ C$		41		nC

Thermal Characteristics

Parameter	Symbols	TYP	Units
Thermal Resistance from Junction to Case	$R_{\theta JC}$	0.8	$^\circ C/W$

Typical Performance

Figure 1. Total Capacitance vs. Reverse Voltage

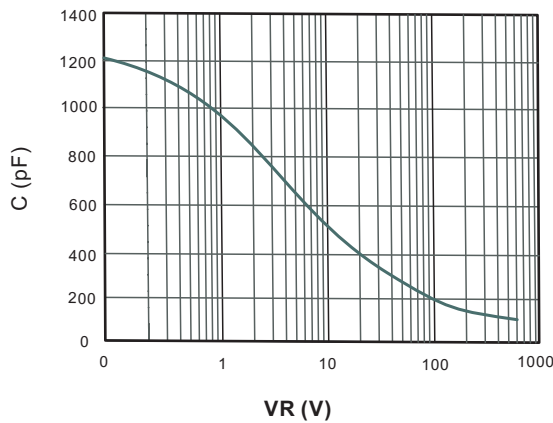


Figure 2. Total Capacitive Charge vs. Reverse Voltage

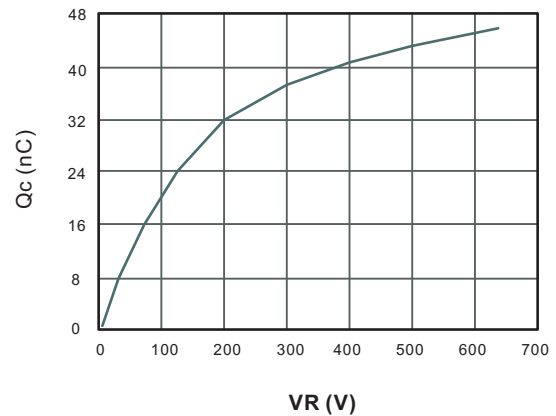




Fig.3 Typical Forward Current Derating Curve

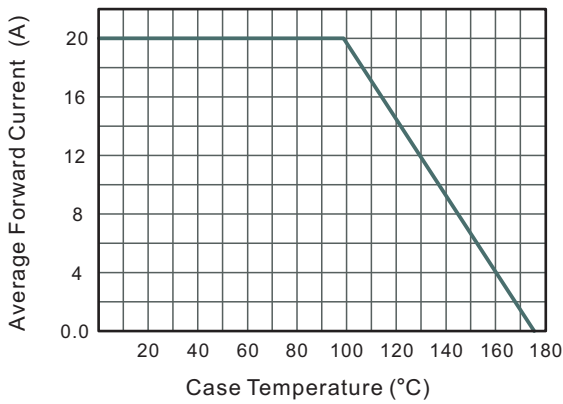


Fig.4 Power Dissipation

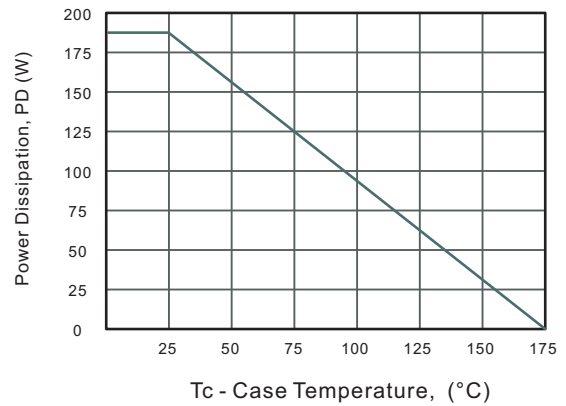


Fig.5 Typical Forward Characteristic(per leg)

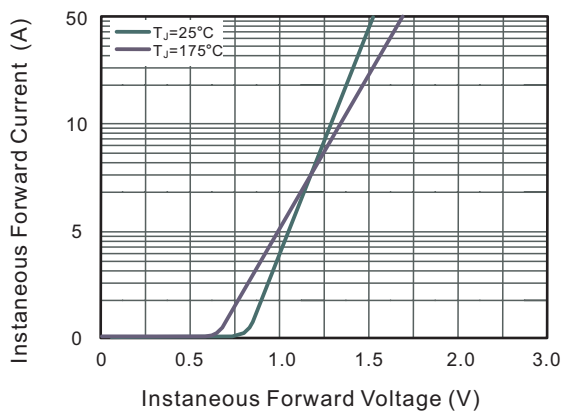


Fig.6 Typical Reverse Characteristics

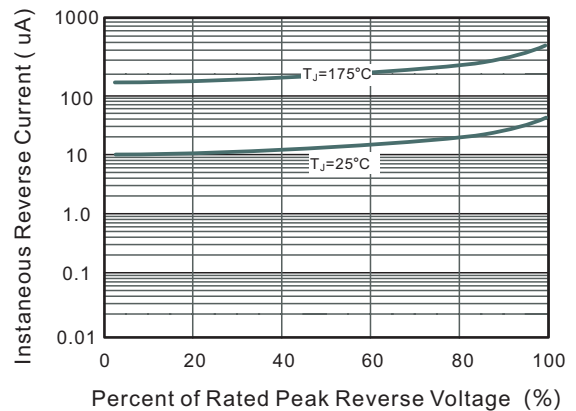


Fig.7 Max. Transient Thermal Impedance

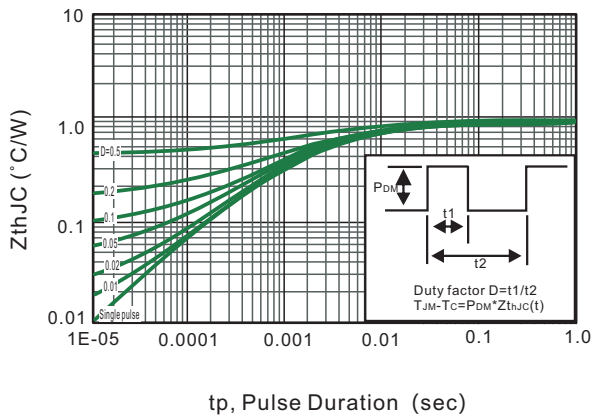
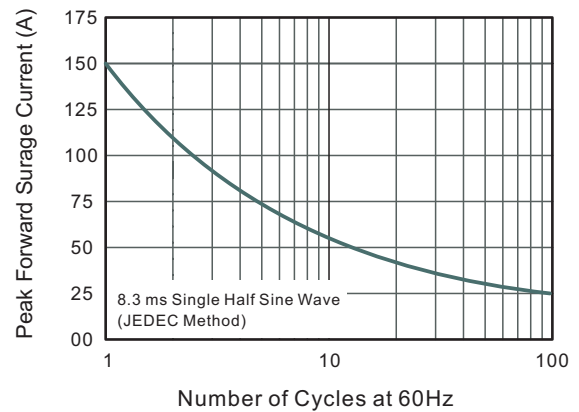


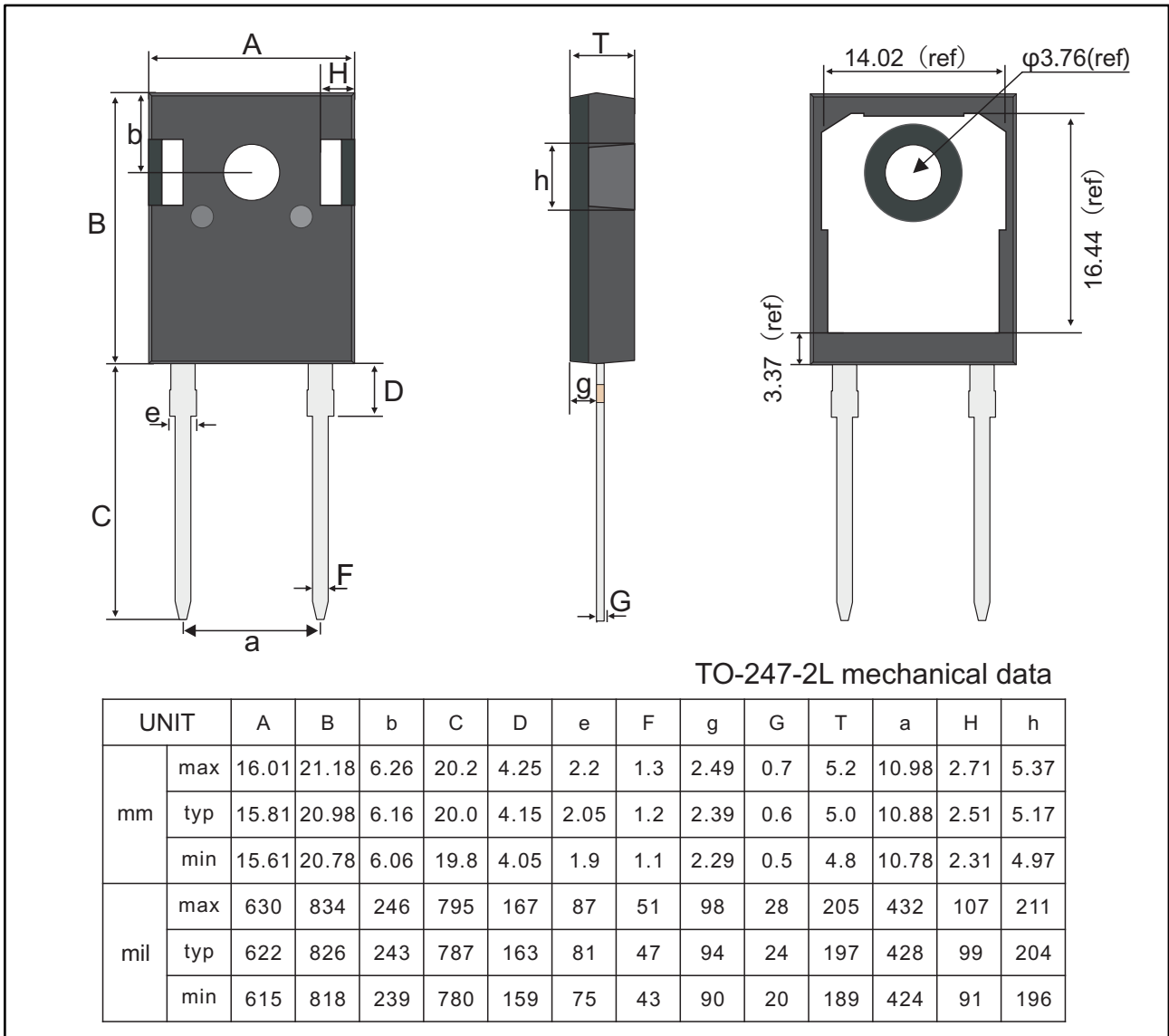
Fig.8 Maximum Non-Repetitive Peak Forward Surge Current





Package Outline
Through hole Package ; 2 leads

TO-247-2L



Marking

Type number	Marking code
SC20065W	SC20065W



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