



## SiC Schottky Diode

### Product Summary

$V_{RRM}$	1200V
$I_F(T_C 157^\circ\text{C})$	20A
$Q_C$	80 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

### Mechanical data

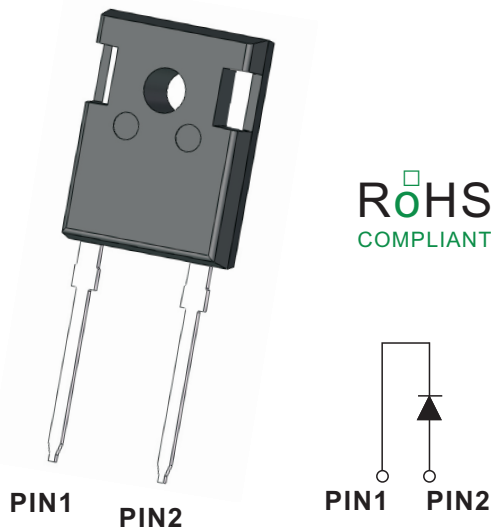
- Case: TO-247-2L
- pprox. Weight: 6.0g ( 0.21oz)
- Lead free finish, RoHS compliant
- Case Material: "Green" molding compound, UL flammability classification 94V-0, "Halogen-free".

### Maximum Ratings

Ratings At 25°C Ambient Temperature Unless Otherwise Specified

Parameter	Symbols	SC20120W	Test Conditions	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	1200	$T_C=25^\circ\text{C}$	V
Surge Peak Reverse Voltage	$V_{RSM}$	1200	$T_C=25^\circ\text{C}$	V
Maximum DC Blocking Voltage	$V_{DC}$	1200	$T_C=25^\circ\text{C}$	V
Forward Current	$I_F$	70	$T_C \leq 25^\circ\text{C}$	A
		33	$T_C \leq 135^\circ\text{C}$	
		20	$T_C \leq 157^\circ\text{C}$	
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)(Per leg)	$I_{FSM}$	180	$T_C=25^\circ\text{C}$ , $T_p=8.3\text{ms}$ , 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





### Electrical Characteristics

Ratings At 25°C Ambient Temperature Unless Otherwise Specified

Parameter	Symbols	Test Conditions	Min	Typ	Max	Units
Instantaneous forward voltage per leg	$V_F$	$I_F=20A, T_J=25^\circ C$ $I_F=20A, T_J=175^\circ C$		1.45 2.0	1.8 2.3	V
Reverse current per leg	$I_R$	$V_R=1200V, T_J=25^\circ C$ $V_R=1200V, T_J=175^\circ C$		10 50	100 500	$\mu A$
Total Capacitance	C	$V_R=0V, T_J=25^\circ C, f=1MHz$		1240		pF
Total Capacitive Charge	$Q_C$	$V_R=800V, I_F=20A$ $di/dt=200A/\mu s, T_J=25^\circ C$		80		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

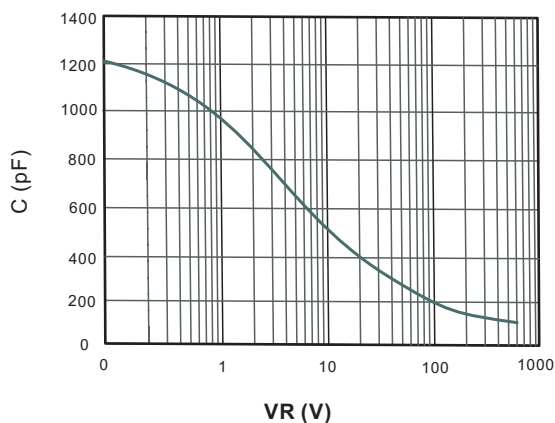


Figure 2. Total Capacitive Charge vs. Reverse Voltage

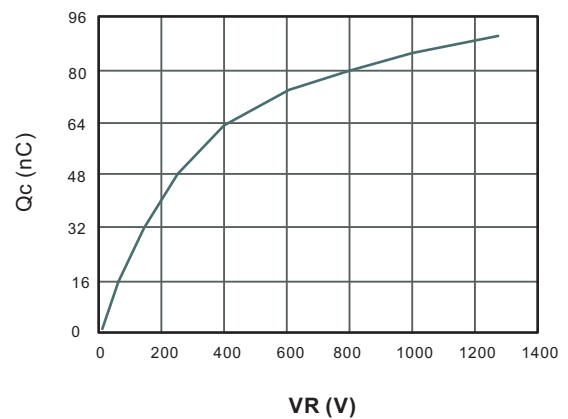




Fig.3 Typical Forward Current Derating Curve

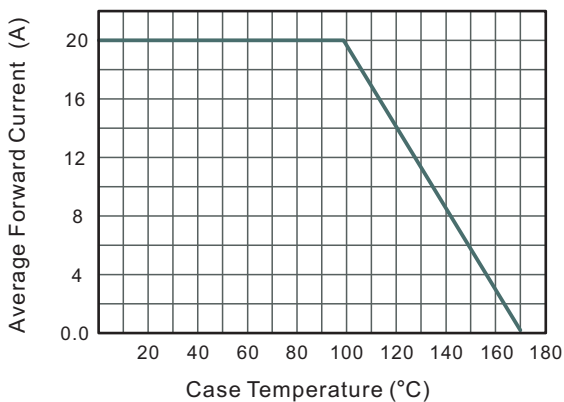


Fig.4 Power Dissipation

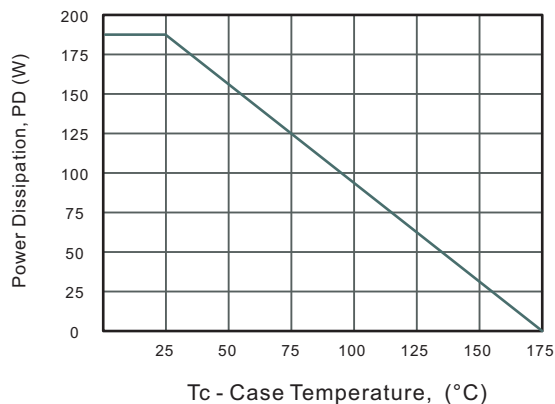


Fig.5 Typical Forward Characteristic(per leg)

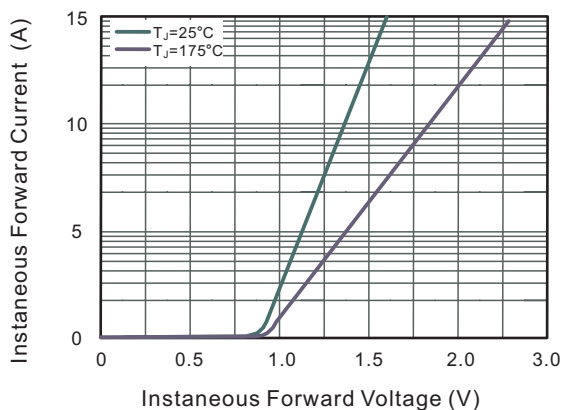


Fig.6 Typical Reverse Characteristics

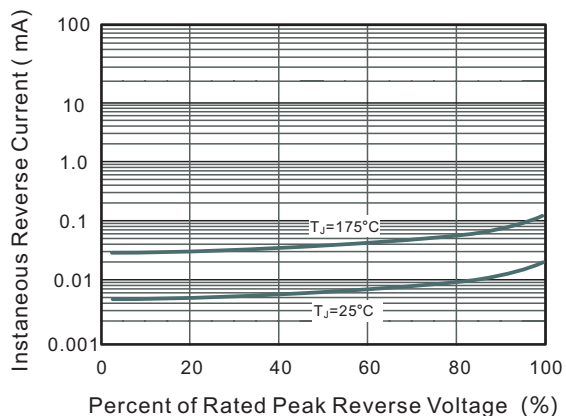


Fig.7 Max. Transient Thermal Impedance

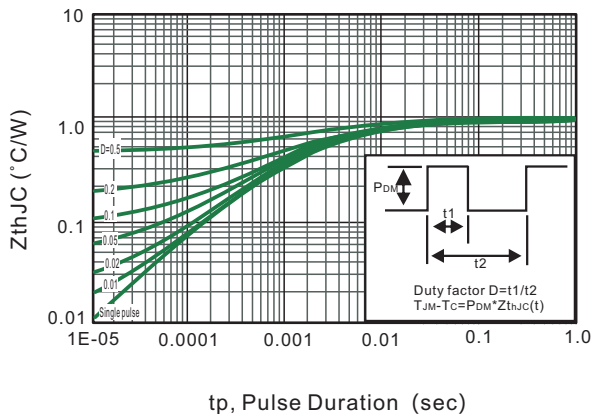
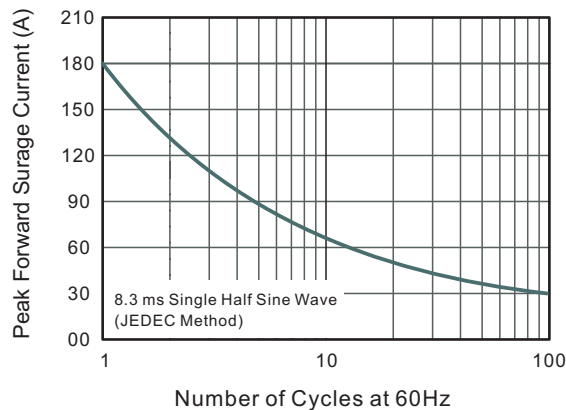


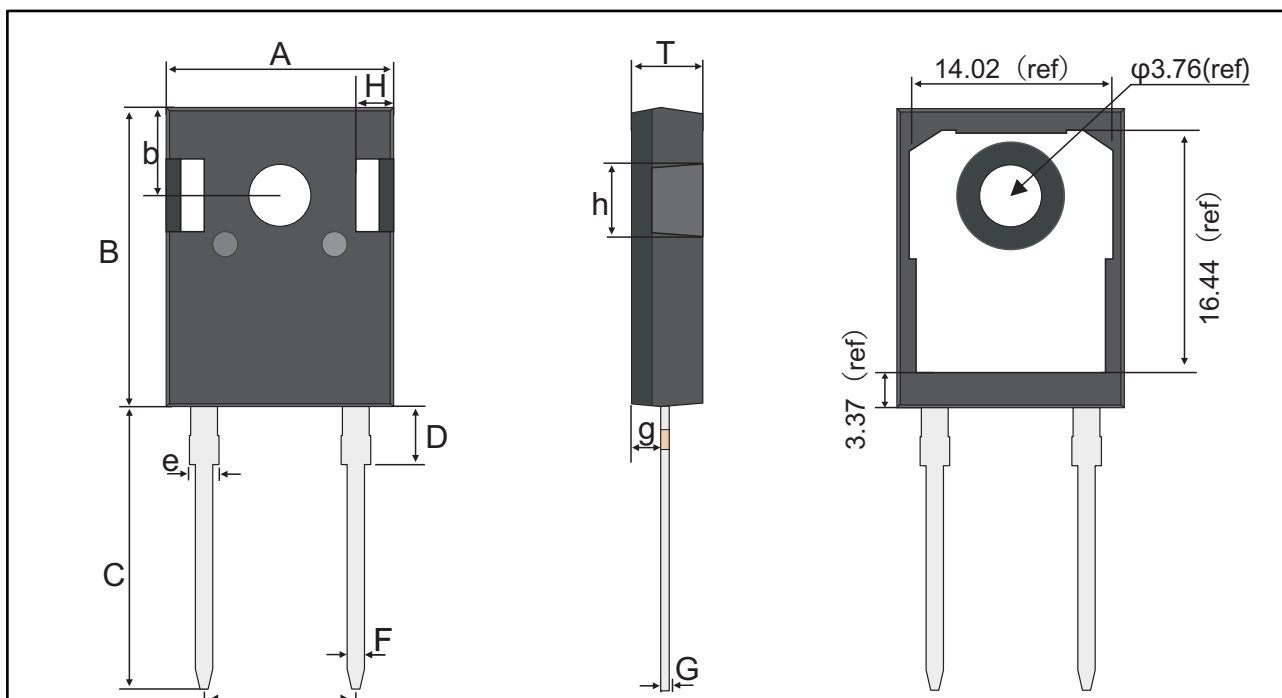
Fig.8 Maximum Non-Repetitive Peak Forward Surge Current





Package Outline  
Through hole Package ; 2 leads

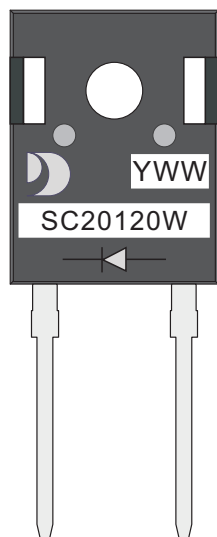
TO-247-2L



TO-247-2L mechanical data

UNIT		A	B	b	C	D	e	F	g	G	T	a	H	h
mm	max	16.01	21.18	6.26	20.2	4.25	2.2	1.3	2.49	0.7	5.2	10.98	2.71	5.37
	typ	15.81	20.98	6.16	20.0	4.15	2.05	1.2	2.39	0.6	5.0	10.88	2.51	5.17
	min	15.61	20.78	6.06	19.8	4.05	1.9	1.1	2.29	0.5	4.8	10.78	2.31	4.97
mil	max	630	834	246	795	167	87	51	98	28	205	432	107	211
	typ	622	826	243	787	163	81	47	94	24	197	428	99	204
	min	615	818	239	780	159	75	43	90	20	189	424	91	196

**Marking Diagram**



YWW: Date Code  
Y:Years(0~9)  
WW:Week  
SC20120W: Product name  
(NOTE:The weekly code is based on the actual number of weeks in the calendar year.)



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