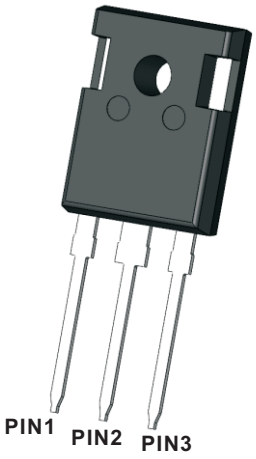
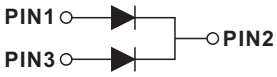
SiC Schottky Diode

TO-247-3L



RoHS COMPLIANT



Product Summary

V_{RRM}	650V
I_F (Tc 158℃)	20A
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

Maximum Ratings

Ratings At 25℃ Ambient Temperature Unless Otherwise Specified

Parameter	Symbols	SC10065C	Test Conditions	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	650	Tc=25℃	V
Surge Peak Reverse Voltage	V_{RSM}	650	Tc=25℃	V
Maximum DC Blocking Voltage	V_{DC}	650	Tc=25℃	V
Forward Current	I_F	78 39 20	Tc≤25℃ Tc≤135℃ Tc≤158℃	A
Peak Forward Surge Current,8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)(Per leg)	I_{FSM}	86	Tc=25℃, Tp=8.3ms, Half Sine Wave	A
Power Dissipation	PD	93	Tc=25℃	W
Operating Junction Temperature Range	T_j	-55 ~ +175		℃
Storage Temperature Range	T_{stg}	-55 ~ +175		℃

Electrical Characteristics

Ratings At 25℃ 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℃ I_F=10A,T_J=175℃		1.27 1.38	1.5 1.6	V
Reverse current per leg	I_R	V_R=650V,T_J=25℃ V_R=650V,T_J=175℃		6 -	50 200	uA
Total Capacitance	C	V_R=0V,T_J=25℃,f=1MHz		640		pF
Total Capacitive Charge	Q_C	V_R=400V,I_F=10A di/dt=200A/us,T_J=25℃		25		nC

Thermal Characteristics

Parameter	Symbols	TYP	Units
Thermal Resistance from Junction to Case	$R_{\theta JC}$	1.0	°C/W

Typical Performance

Figure 1. Total Capacitance vs. Reverse Voltage

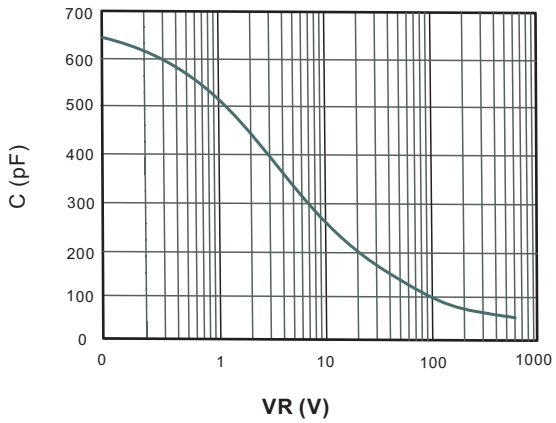


Figure 2. Total Capacitive Charge vs. Reverse Voltage

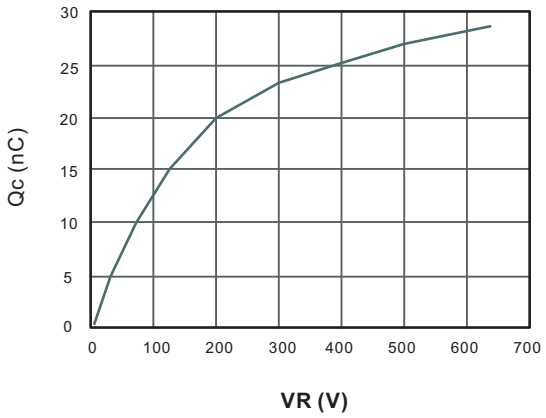


Fig.3 Typical Forward Current Derating Curve

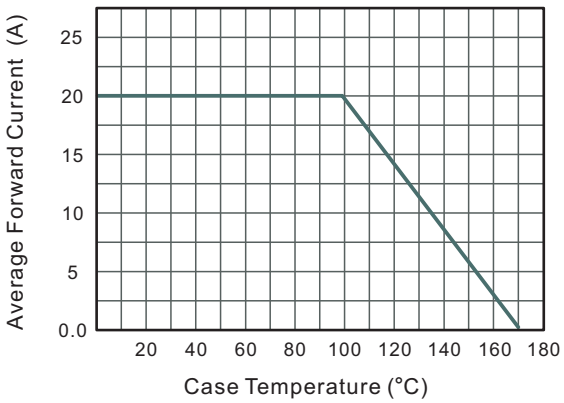


Fig.4 Power Dissipation

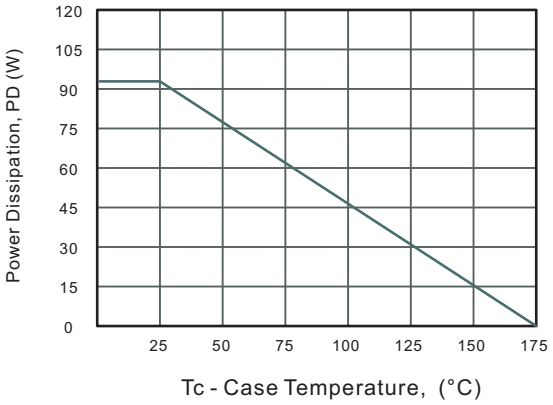


Fig.5 Typical Forward Characteristic(per leg)

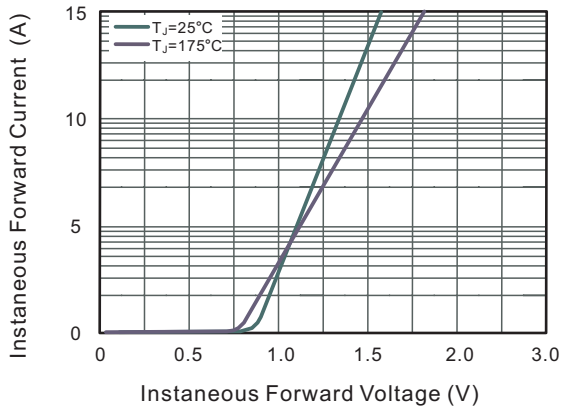


Fig.6 Typical Reverse Characteristics

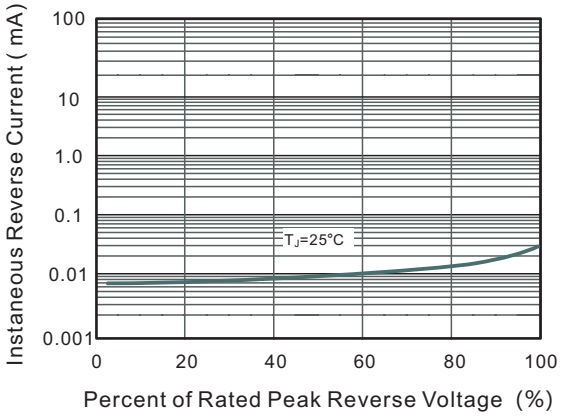


Fig.7 Max. Transient Thermal Impedance

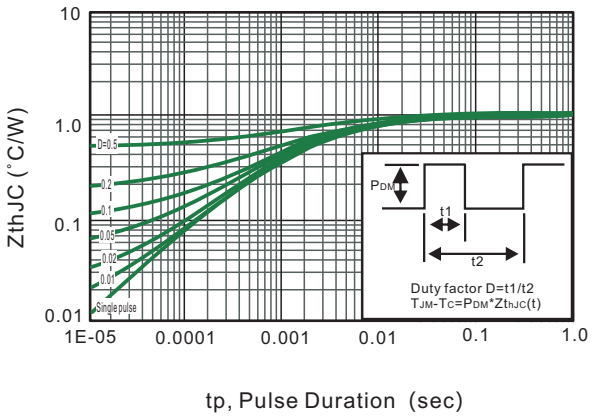
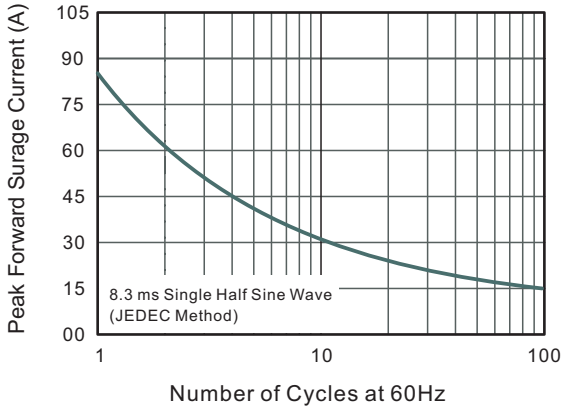
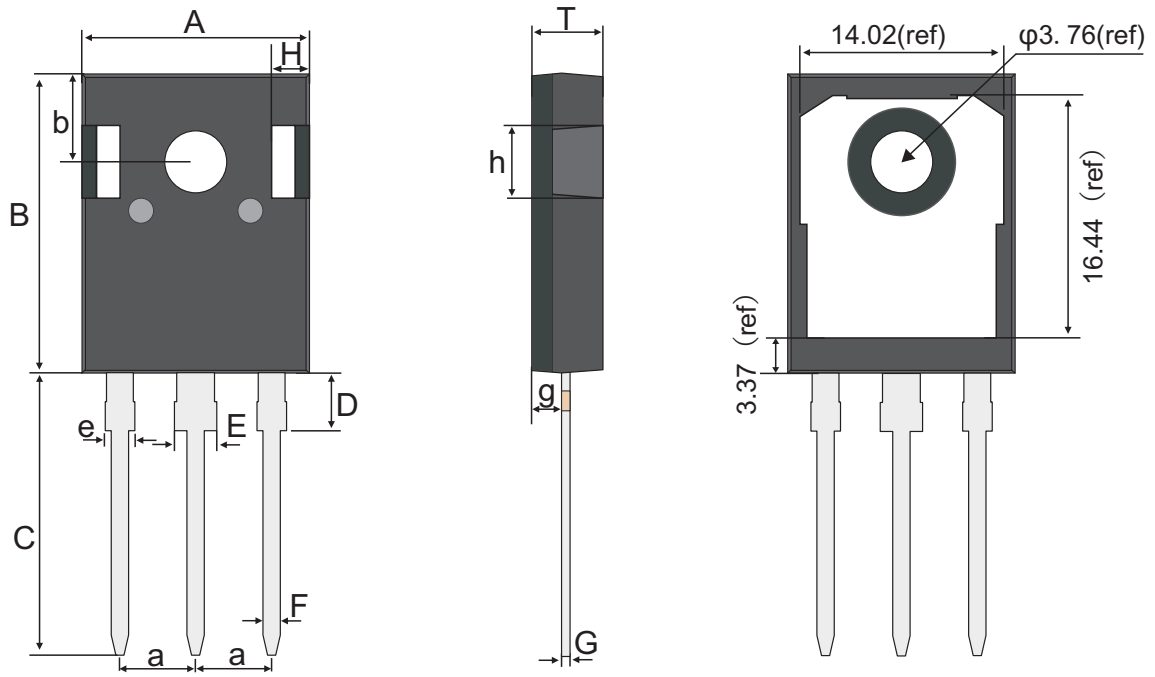


Fig.8 Maximum Non-Repetitive Peak Forward Surage Current



Package Outline
Through Hole Package ; 3 leads

TO-247-3L



TO-247-3L mechanical data

UNIT		A	a	B	b	C	D	E	e	F	G	g	H	h	T
mm	max	16.01	5.54	21.18	6.26	20.2	4.25	3.25	2.2	1.3	0.7	2.49	2.71	5.37	5.2
	typ	15.81	5.44	20.98	6.16	20.0	4.15	3.10	2.05	1.2	0.6	2.39	2.51	5.17	5.0
	min	15.61	5.34	20.78	6.06	19.8	4.05	2.95	1.9	1.1	0.5	2.29	2.31	4.97	4.8
mil	max	630	218	834	246	795	167	128	87	51	28	98	107	211	205
	typ	622	214	826	243	787	163	122	81	47	24	94	99	204	197
	min	615	210	818	239	780	159	116	75	43	20	90	91	196	189

Marking

Type number	Marking code
SC20065WD	SC20065WD

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