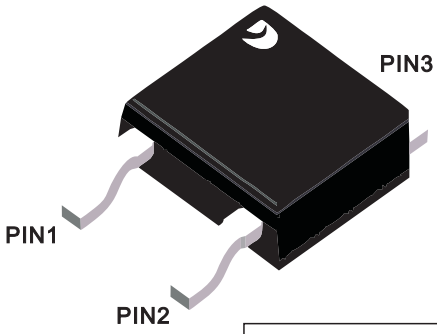
SiC Schottky Diode

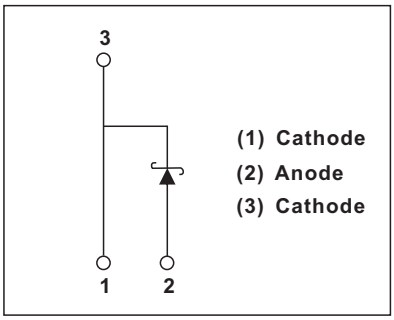
TO-252-2L



RoHS COMPLIANT

Product Summary

V_{RRM}	1200V
I_F (Tc 150℃)	15A
Q_C	62nC



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
- •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)
- • RoHS compliant
- • Case Material: “Green” molding compound, UL flammability classification 94V-0,“Halogen-free”.

Maximum Ratings

Ratings At 25℃ Ambient Temperature Unless Otherwise Specified

Parameter	Symbols	SC15120D	Test Conditions	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	1200	Tc=25℃	V
Surge Peak Reverse Voltage	V_{RSM}	1200	Tc=25℃	V
Maximum DC Blocking Voltage	V_{DC}	1200	Tc=25℃	V
Forward Current	I_F	44 20 15	Tc≤25℃ Tc≤135℃ Tc≤150℃	A
Peak Forward Surge Current,8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)(Per leg)	I_{FSM}	140	Tc=25℃, Tp=8.3ms, Half Sine Wave	A
Power Dissipation	PD	100	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=15A,T_J=25℃ I_F=15A,T_J=175℃		1.45 2.0	1.8 2.3	V
Reverse current per leg	I_R	V_R=1200V,T_J=25℃ V_R=1200V,T_J=175℃		8 40	100 500	uA
Total Capacitance	C	V_R=0V,T_J=25℃,f=1MHz		960		pF
Total Capacitive Charge	Q_C	V_R=800V,I_F=15A di/dt=200A/us,T_J=25℃		62		nC

Thermal Characteristics

Parameter	Symbols	TYP	Units
Thermal Resistance from Junction to Case	$R_{\theta JC}$	1.5	°C/W

Typical Performance

Figure 1. Total Capacitance vs. Reverse Voltage

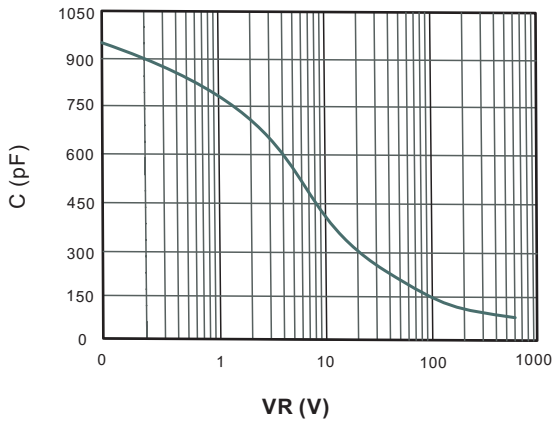


Figure 2. Total Capacitive Charge vs. Reverse Voltage

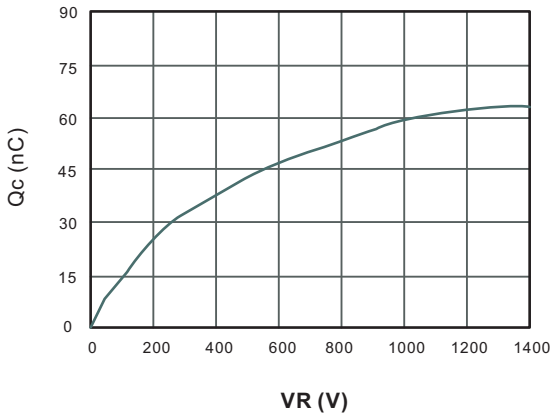


Fig.3 Typical Forward Current Derating Curve

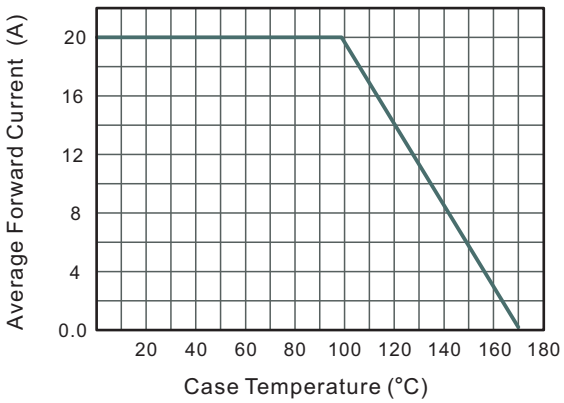


Fig.4 Power Dissipation

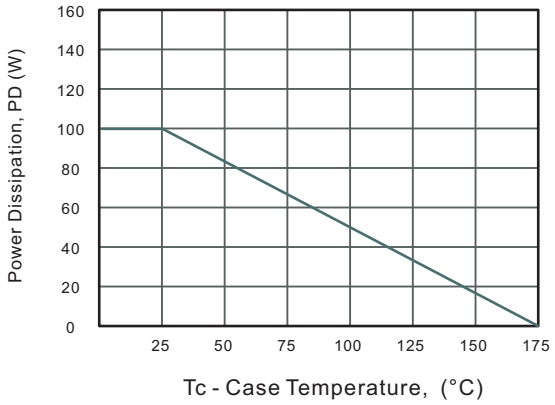


Fig.5 Typical Forward Characteristic(per leg)

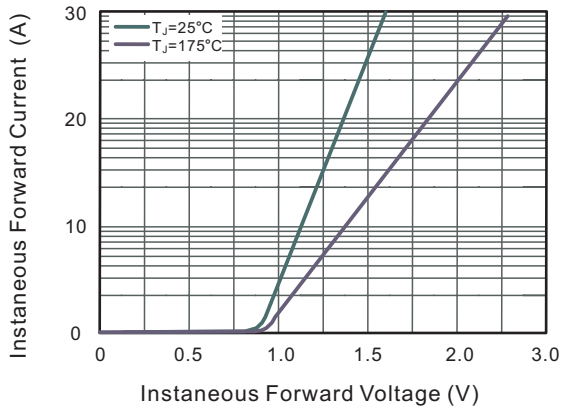


Fig.6 Typical Reverse Characteristics

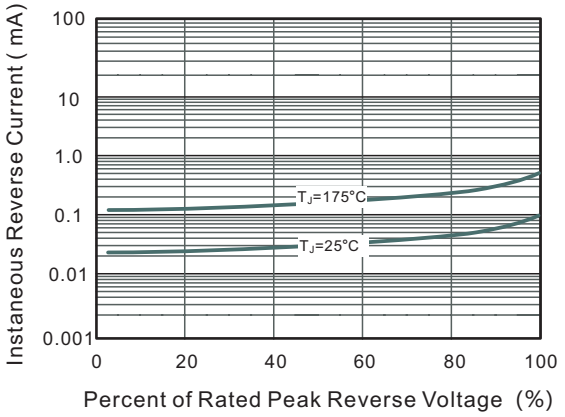


Fig.7 Max. Transient Thermal Impedance

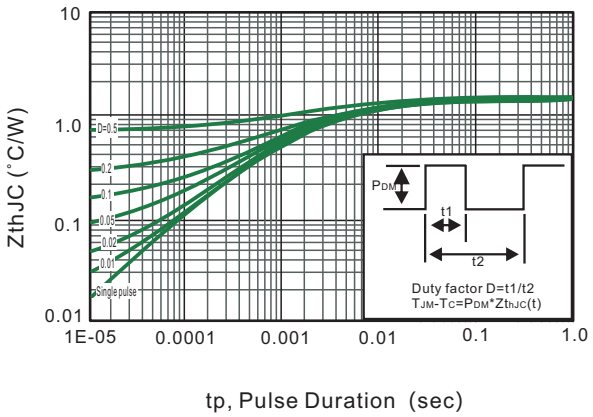
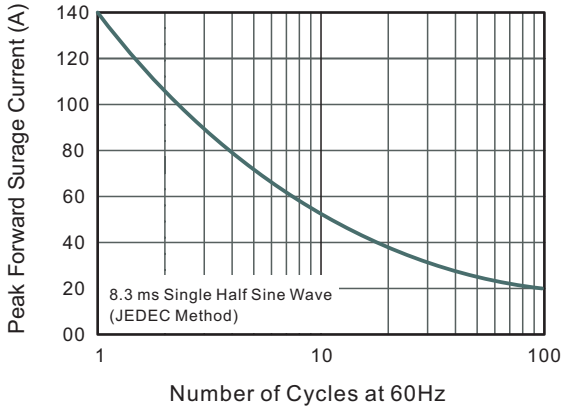
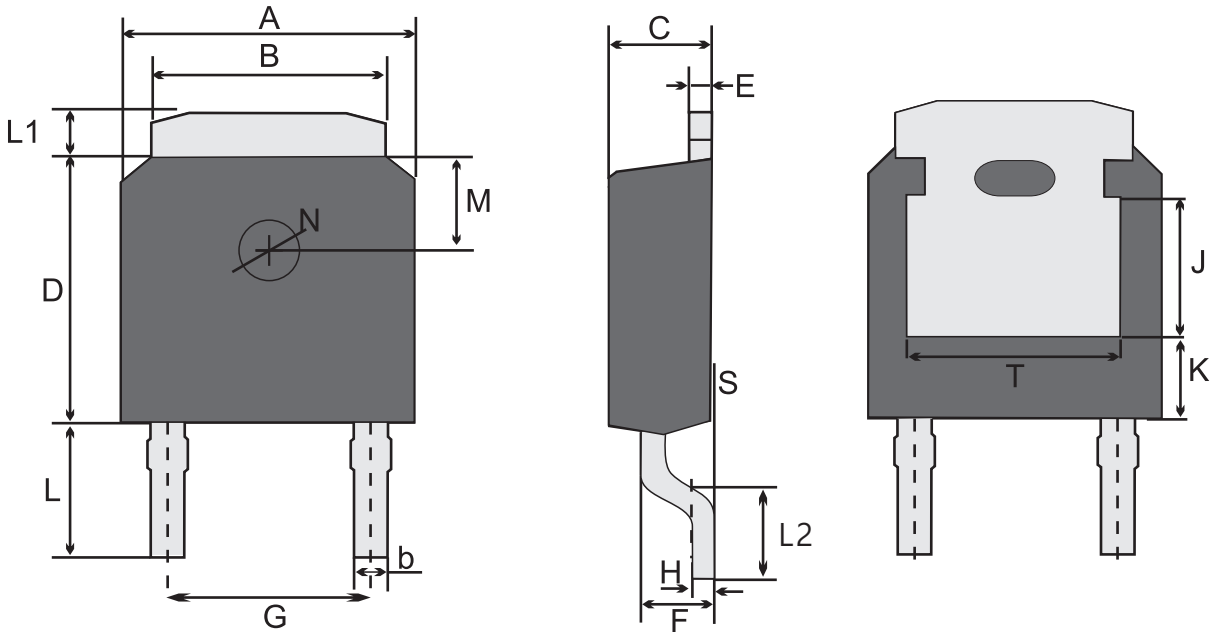


Fig.8 Maximum Non-Repetitive Peak Forward Surage Current



TO-252-2L Package Outline Dimensions

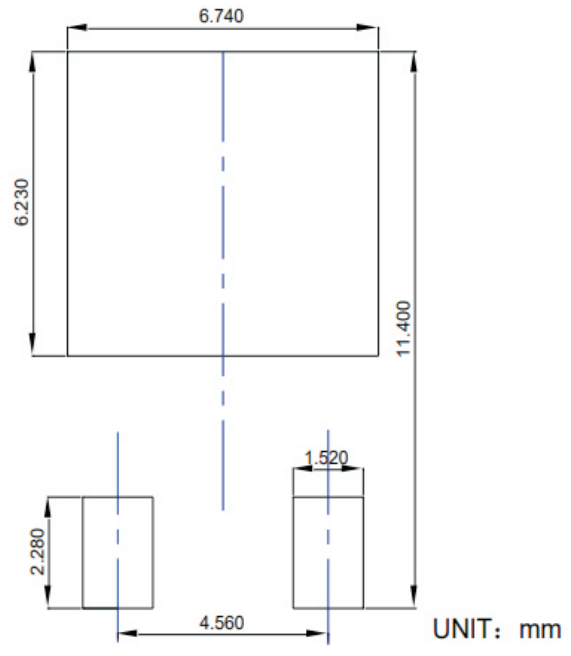


TO-252-2L Mechanical data

UNIT		A	B	b	C	D	E	F	G	H	L	L1	L2	S	M	N	J	T	K
mm	max	6.7	5.53	0.86	2.5	6.3	0.61	1.87	4.6 typ.	0.55	3.11	1.2	1.75	0.10	1.8 typ.	1.3 typ.	3.2 ref.	4.83 ref.	1.8 ref.
	typ	6.6	5.33	0.76	2.3	6.1	0.51	1.57		0.50	2.91	1.0	1.30	0.05					
	min	6.3	5.13	0.66	2.1	5.9	0.41	1.27		0.45	2.71	0.8	1.00	/					
mil	max	264	218	34	98	248	24	74	181 typ.	22	122	47	69	4	71 typ.	51 typ.	126 ref.	190 ref.	71 ref.
	typ	260	210	30	91	240	20	62		20	115	39	51	2					
	min	248	202	26	83	232	16	50		18	107	31	39	/					

Marking

Type number	Marking code
SC15120D	SC15120D



SUGGESTED SOLDER PAD LAYOUT

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