

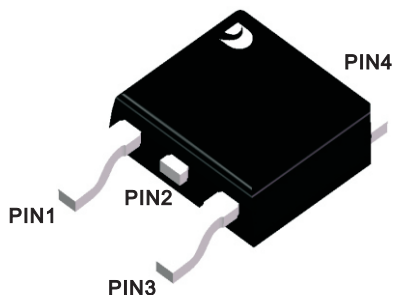


## SiC Schottky Diode

### Product Summary

$V_{RRM}$	650V
$I_F(T_c 163^\circ\text{C})$	6A
$Q_c$	17 nC

### TO-252W(Prefix :D)



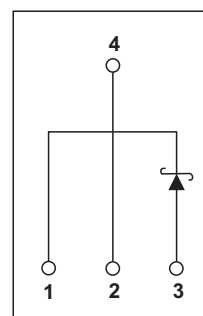
ROHS  
COMPLIANT

### 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



### Maximum Ratings

Ratings At 25°C Ambient Temperature Unless Otherwise Specified

Parameter	Symbols	SC06065D1	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	$I_F$	22	$T_c \leq 25^\circ\text{C}$	A
		9	$T_c \leq 135^\circ\text{C}$	
		6	$T_c \leq 163^\circ\text{C}$	
Non-Repitive Forward Surge Current	$I_{FSM}$	52	$T_c=25^\circ\text{C}$ , $T_p=10\text{ms}$ , 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		$^\circ\text{C}$



### Electrical Characteristics

Ratings At 25°C Ambient Temperature Unless Otherwise Specified

Parameter	Symbols	Test Conditions	Min	Typ	Max	Units
Instantaneous forward voltage per leg	$V_F$	$I_F=6A, T_J=25^\circ C$ $I_F=6A, T_J=175^\circ C$		1.29 1.38	1.5 1.6	V
Reverse current per leg	$I_R$	$V_R=650V, T_J=25^\circ C$ $V_R=650V, T_J=175^\circ C$		0.9 20	50 200	$\mu A$
Total Capacitance	C	$V_R=0V, T_J=25^\circ C, f=1MHz$		230		pF
Total Capacitive Charge	$Q_C$	$V_R=650V, I_F=6A$ $di/dt=200A/\mu s, T_J=25^\circ C$		17		nC

### Thermal Characteristics

Parameter	Symbols	TYP	Units
Thermal Resistance from Junction to Case	$R_{\theta JC}$	1.45	$^\circ C/W$

### Typical Performance

Figure 1. Total Capacitance vs. Reverse Voltage

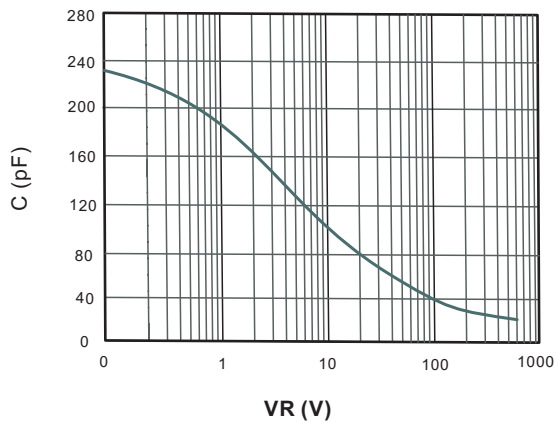


Figure 2. Total Capacitive Charge vs. Reverse Voltage

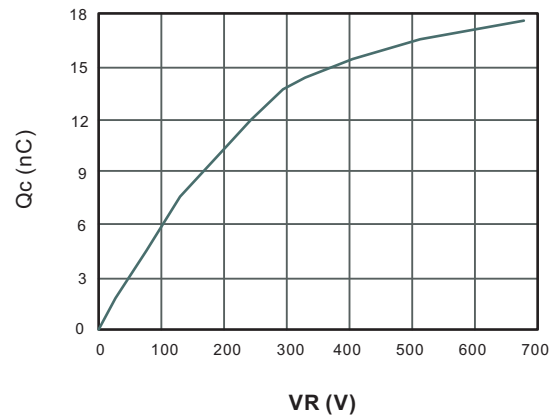




Fig.3 Typical Forward Current Derating Curve

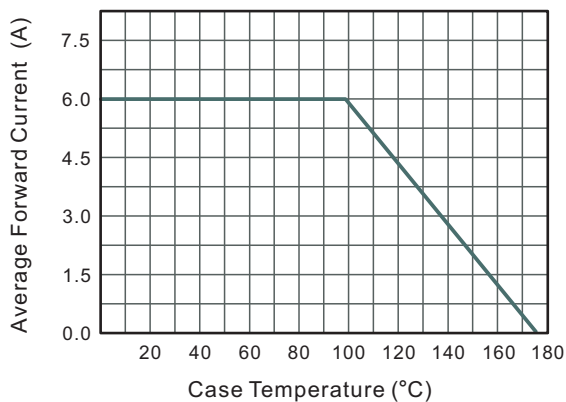


Fig.4 Power Dissipation

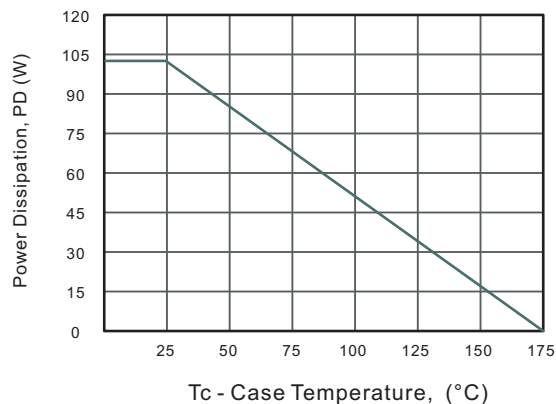


Fig.5 Typical Forward Characteristic(per leg)

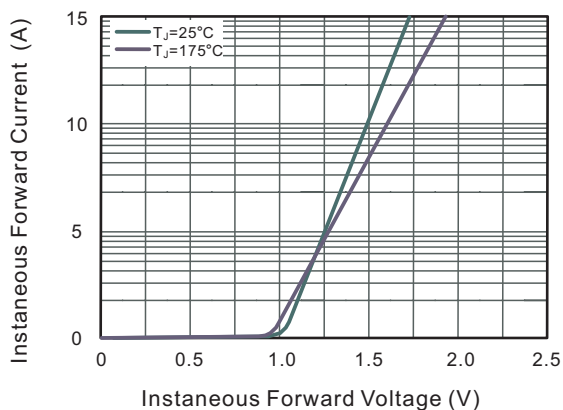


Fig.6 Typical Reverse Characteristics

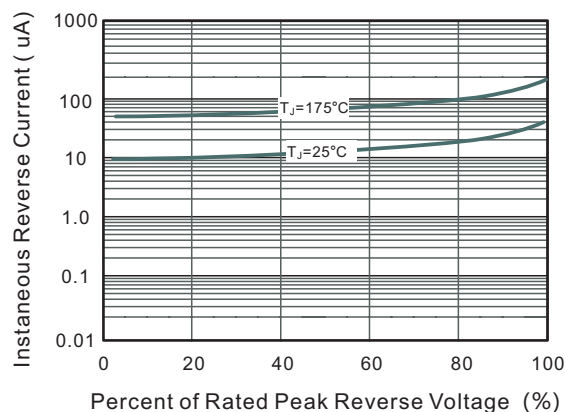


Fig.7 Max. Transient Thermal Impedance

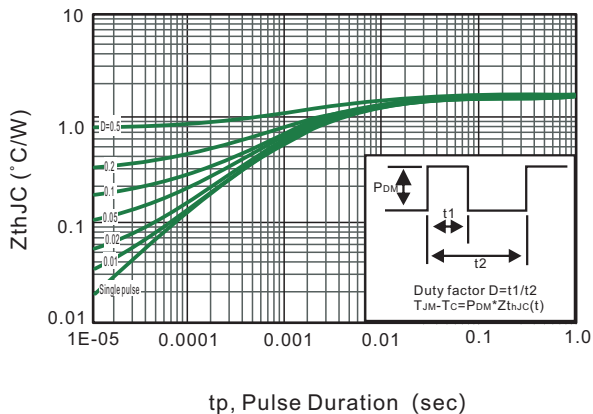
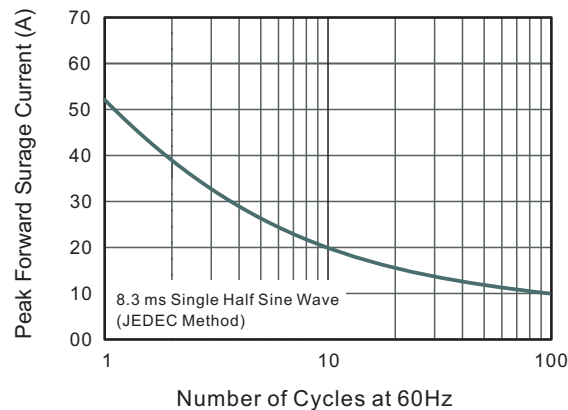
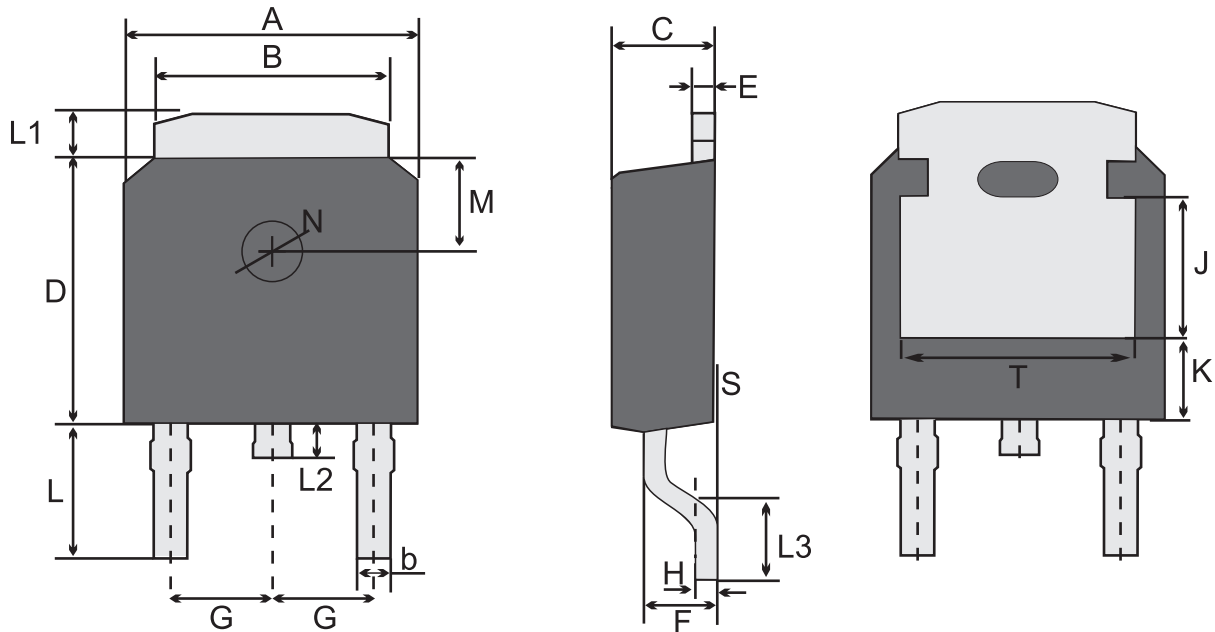


Fig.8 Maximum Non-Repetitive Peak Forward Surge Current





TO-252W(D-PAK) Package Outline Dimensions

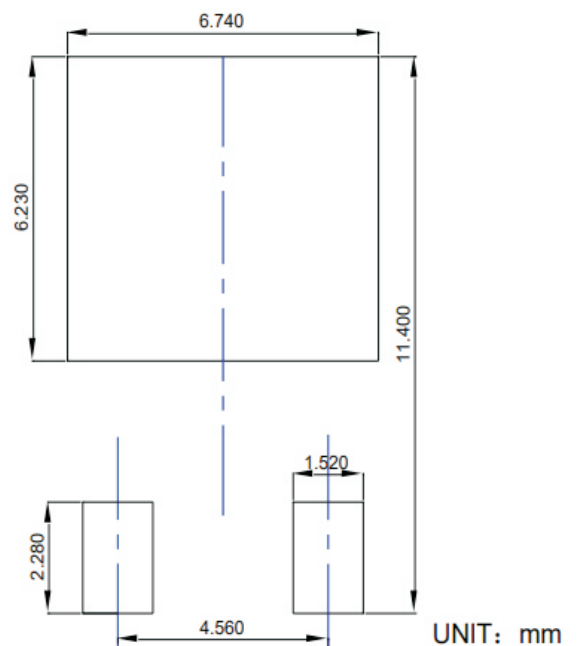


TO-252W(D-PAK) Mechanical data

UNIT		A	B	b	C	D	E	F	G	H	L	L1	L2	L3	S	M	N	J	T	K
mm	max	6.7	5.53	0.86	2.5	6.3	0.61	1.87	2.3 typ.	0.55	3.1	1.2	1.0	1.90	0.1	1.8 typ.	1.3 typ.	3.2 ref.	5.23 ref.	1.8 ref.
	typ	6.6	5.33	0.76	2.3	6.1	0.51	1.57		0.50	2.95	1.0	0.8	1.45	0.05					
	min	6.3	5.13	0.66	2.1	5.9	0.41	1.27		0.45	2.7	0.8	0.6	1.00	/					
mil	max	264	218	34	98	248	24	74	91 typ.	22	121	47	39	75	3.9	71 typ.	51 typ.	126 ref.	206 ref.	71 ref.
	typ	260	210	30	91	240	20	62		20	116	39	31	57	2					
	min	248	202	26	83	232	16	50		18	106	31	24	39	/					

Marking

Type number	Marking code
SC06065D1	SC06065D1



SUGGESTED SOLDER PAD LAYOUT



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