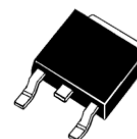


## 1200V Silicon Carbide Schottky Diode

### DESCRIPTION :

- High surge current capability
- No reverse recover
- Positive temperature Coefficient
- Specified dv/dt ruggedness
- RoHS Compliant

$V_{RRM}$	1200V
$I_F$	2A (TC=165°C)
$Q_C$	12nC



TO-252 (D-PAK)

### TYPICAL APPLICATIONS :

- Switch mode power supplies
- Solar inverters
- Data Center
- Power factor correction
- AC/DC converters

### MAXIMUM RATINGS (at $T_C = 25^\circ\text{C}$ , unless otherwise specified)

Characteristic	Condition	Symbol	Value	Unit
Repetitive Peak Reverse Voltage		$V_{RRM}$	1200	V
Continuous Forward Current	$T_C=25^\circ\text{C}$ $T_C=135^\circ\text{C}$ $T_C=165^\circ\text{C}$	$I_F$	11 5 2	A
Non-Repetitive Forward Surge Current	$T_C=25^\circ\text{C}$ , $t_P=10\text{ms}$ , Half sine pulse $T_C=110^\circ\text{C}$ , $t_P=10\text{ms}$ , Half sine pulse	$I_{FSM}$	19 14	A
Repetitive Peak Forward Surge Current	$T_C=25^\circ\text{C}$ , $t_P=10\text{ms}$ , Half sine pulse	$I_{FRM}$	18	A
$i^2t$ value	$T_C=25^\circ\text{C}$ , $t_P=10\text{ms}$ $T_C=110^\circ\text{C}$ , $t_P=10\text{ms}$	$\int i^2 dt$	1.80 0.98	$\text{A}^2\text{S}$
Power dissipation	$T_C=25^\circ\text{C}$ $T_C=110^\circ\text{C}$ $T_C=150^\circ\text{C}$	$P_{tot}$	108 47 18	W
Operation Junction temperature		$T_J$	-55~+175	$^\circ\text{C}$
Storage temperature		$T_{STG}$	-55~+175	$^\circ\text{C}$

## THERMAL CHARACTERISTICS

Characteristic	Condition	Symbol	Typical	Unit
Thermal resistance, junction - case		$R_{th(j-c)}$	1.388	$^{\circ}\text{C}/\text{W}$

ELECTRICAL CHARACTERISTICS (at  $T_c = 25^{\circ}\text{C}$ , unless otherwise specified)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
DC Blocking Voltage	$V_{DC}$	1200			V
Forward Voltage IF = 1A IF = 2A, $T_c = 25^{\circ}\text{C}$ IF = 2A, $T_c = 175^{\circ}\text{C}$	$V_F$		1.17 1.38 2.0	1.60	V
Reverse Current VR = 1200V, $T_c = 25^{\circ}\text{C}$ VR = 1200V, $T_c = 175^{\circ}\text{C}$	$I_R$		1 4	50	$\mu\text{A}$
Total Capacitive Charge VR = 800V	$Q_C$		12		nC
Total capacitance VR = 1V, f = 1MHz VR = 400V, f = 1MHz VR = 800V, f = 1MHz	C		125 12 9		pF
Capacitance Stored Energy VR = 800 V	$E_C$		3.7		$\mu\text{J}$

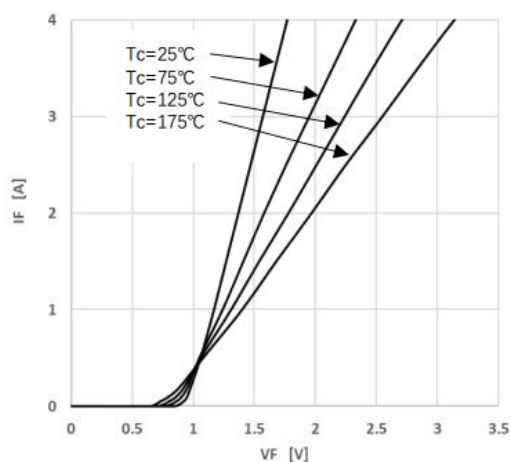


Figure 1. Forward characteristics

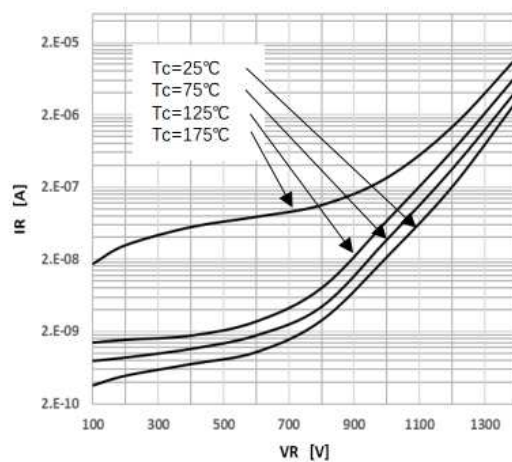


Figure 2. Reverse characteristics

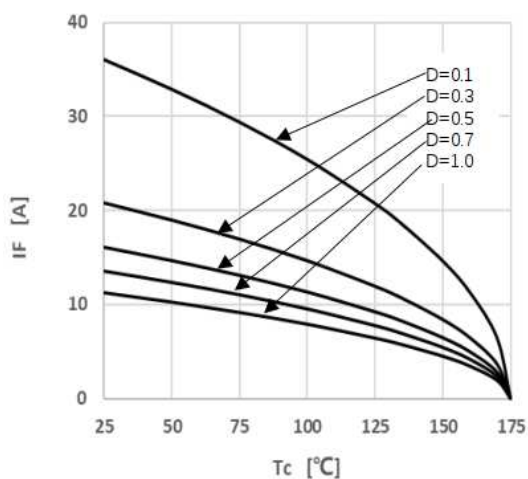


Figure 3. Peak Forward Current Derating

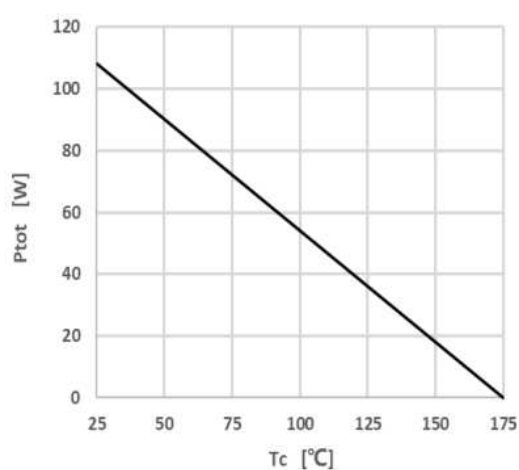


Figure 4. Power Dissipation

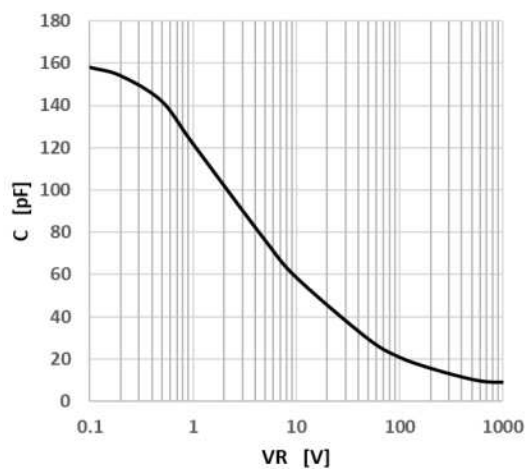


Figure 5. Capacitance vs. Reverse Voltage

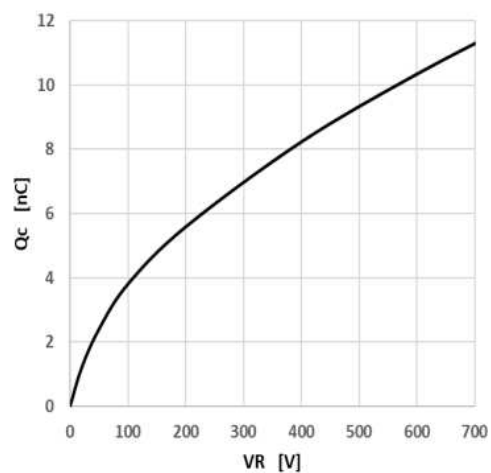


Figure 6. Capacitance Charge vs. Reverse Voltage

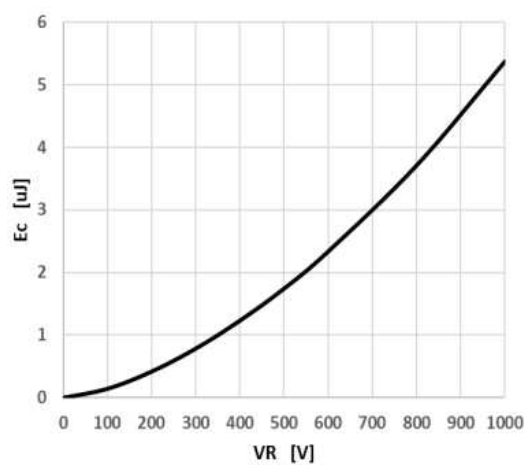


Figure 7. Capacitance Stored Energy

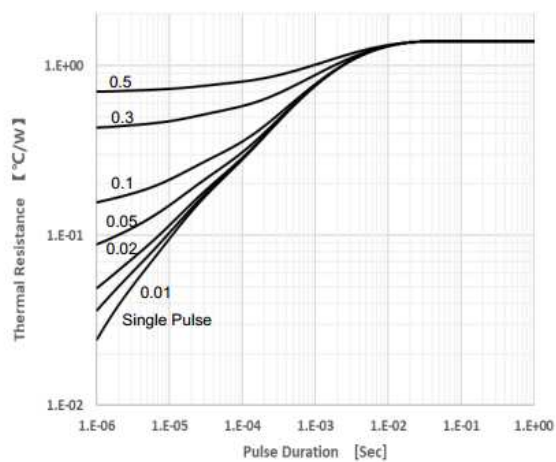
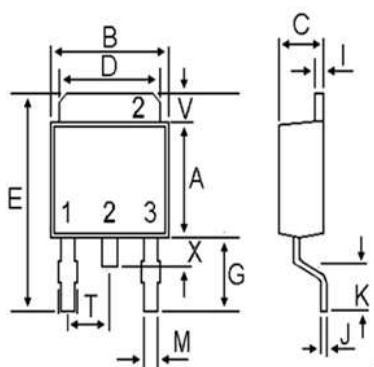


Figure 8. Transient Thermal Impedance

- Circuit diagram



- TO-252-2NC Package outlines : Dimensions in (mm)



DIM	MILLIMETERS	
	MIN	MAX
A	5.97	6.22
B	6.30	6.75
C	2.18	2.40
D	4.95	5.46
E	9.40	10.41
G	2.75	3.20
I	0.46	0.89
J	0.46	0.61
K	1.40	1.78
M	0.64	0.89
T	2.28	2.30
V	0.89	1.27
X	---	1.05

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