1200V Silicon Carbide Schottky Diode

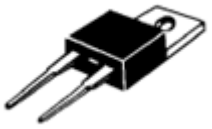
DESCRIPTION：

- Zero reverse recovery current
- Zero forward recovery voltage
- Temperature independent switching behavior
- High temperature operation
- High frequency operation
- RoHS Compliant

V_{RRM}	1200V
I_F	2A (Tc=166℃)
Q_C	12nC

TYPICAL APPLICATIONS：

- SMPS, PFC
- Solar application, UPS, EV/HEV
- Motor drives, Wind turbine, Rail traction



TO-220AC

MAXIMUM RATINGS (at T_C = 25 °C, unless otherwise specified)

Characteristic	Condition	Symbol	Value	Unit
Repetitive Peak Reverse Voltage		V_{RRM}	1200	V
Continuous Forward Current	Tc=25℃ Tc=135℃ Tc=166℃	I_F	10.1 4.9 2.0	A
Non-Repetitive Forward Surge Current	Tc=25℃ , t_P=10ms, Half sine pulse	I_{FSM}	30	A
Repetitive Peak Forward Surge Current	Tc=25℃ , t_P=10ms, Half sine pulse	I_{FRM}	10	A
i^2t value	Tc=25℃ , t_P=10ms	$\int i^2dt$	4.5	A^2S
Power dissipation	Tc=25℃ Tc=110℃	P_{tot}	60 26	W
Operation Junction temperature		Tj	-55~+175	℃
Storage temperature		T_{STG}	-55~+175	℃

THERMAL CHARACTERISTICS

Characteristic	Condition	Symbol	Typical	Unit
Thermal resistance, junction - case		$R_{th(j-C)}$	2.5	℃/W

ELECTRICAL CHARATERISTICS (at T_C = 25 °C, unless otherwise specified)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
DC Blocking Voltage	V_{DC}	1200			V
Forward Voltage IF = 2A, Tc =25℃ IF = 2A, Tc =175℃	V_F		 1.36 1.78	 1.7 2.5	V
Reverse Current VR = 1200V, Tc =25℃ VR = 1200V, Tc =175℃	I_R		 1.2 7.6	 50 100	uA
Total Capacitive Charge VR = 800V	Q_C		12		nC
Total capacitance VR = 0V, f =1MHz VR = 400V, f =1MHz VR = 800V, f =1MHz	C		 177 12 10		pF
Capacitance Stored Energy VR = 800 V	Ec		6		uJ

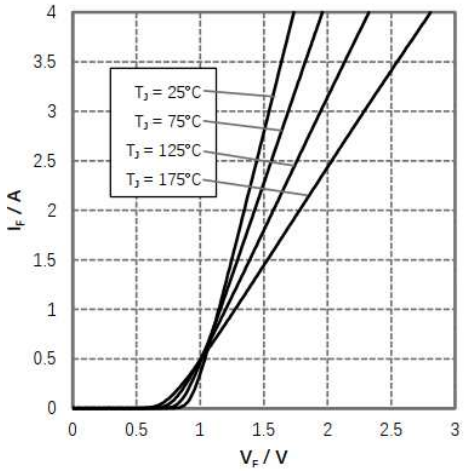


Figure 1. Forward characteristics

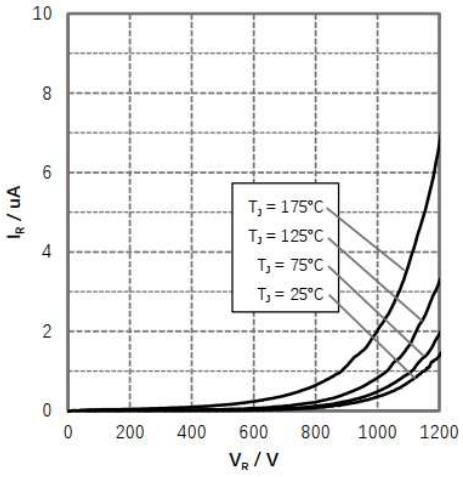


Figure 2. Reverse characteristics

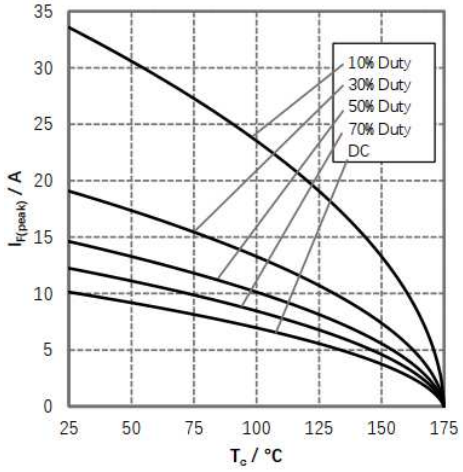


Figure 3. Peak Forward Current Derating

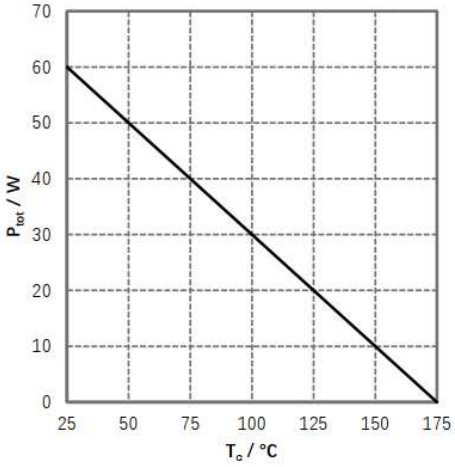


Figure 4. Power Dissipation

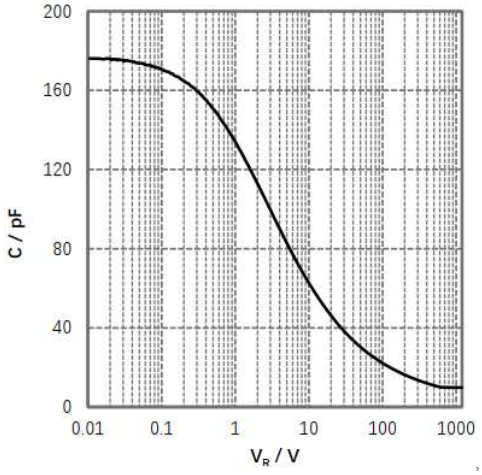


Figure 5. Capacitance vs. Reverse Voltage

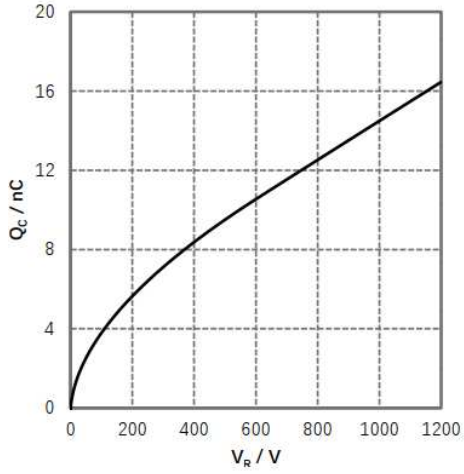


Figure 6. Capacitance Charge vs. Reverse Voltage

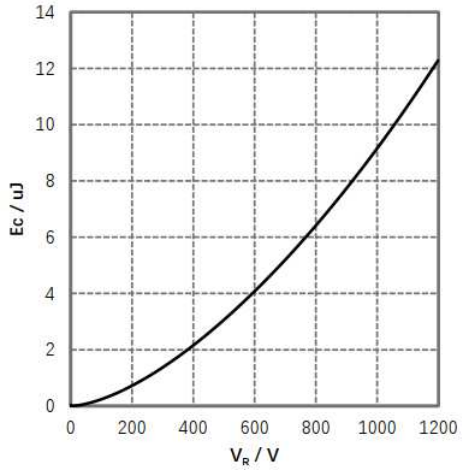


Figure 7. Capacitance Stored Energy

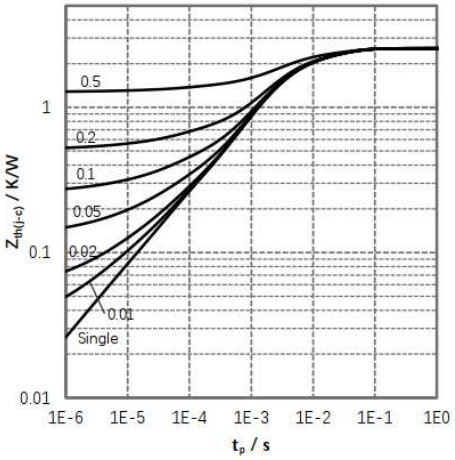
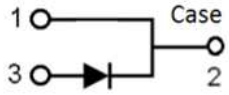
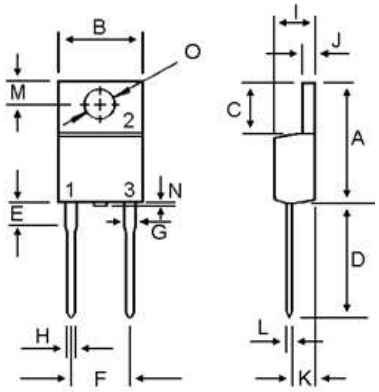


Figure 8. Transient Thermal Impedance

• Circuit diagram



• TO-220AC Package outlines : Dimensions in (mm)



DIM	MILLIMETERS	
	MIN	MAX
A	14.68	16.00
B	9.78	10.42
C	5.02	6.60
D	13.00	14.62
E	3.10	4.19
F	4.82	5.34
G	1.10	1.67
H	0.69	1.01
I	4.22	4.98
J	1.14	1.40
K	2.20	3.30
L	0.28	0.61
M	2.48	3.00
N	---	2.00
O	3.50	4.00

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