CRXQ20D065G1

Silicon Carbide Schottky Diode 650 V, 20 A, 61 nC

General Description

This product family offers state of the art performance. It is designed for high frequency applications where high efficiency and high reliability are required. It is qualified and manufactured on the productive 6 inch SiC line in China fully owned by CR MICRO.

Product Summary

V_{RRM}	650 V
I_F (T_C=151℃)	20 A
Q_C	61 nC

Features

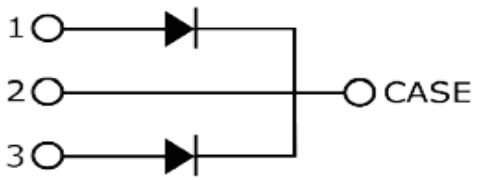
- Low conduction loss due to low V_F
- Extremely low switching loss by tiny Q_C
- Highly rugged due to better surge current
- Industrial standard quality and reliability

Applications

- Solar inverters
- Charging station
- Uninterruptible power supply
- Power factor correction

TO-247-3

Equivalent circuit



Package Marking and Ordering Information

Part #	Marking	Package
CRXQ20D065G1	CRXQ20D065G1	TO-247-3

Maximum Ratings (at Tc = 25 °C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	650	V
Surge Peak Reverse Voltage	V_{RSM}	650	V
DC Peak Reverse Voltage	V_R	650	V
Continuous Forward Current (Per leg/ Device) T_C = 25°C T_C = 135°C T_C = 151°C	I_F	 27/54 13/26 10/20	A
Repetitive Peak Forward Surge Current (Per leg) T_C = 25°C,t_p=10ms,Half Sine Pulse T_C = 110°C,t_p=10ms,Half Sine Pulse	I_{FRM}	 46 31	A
Non-Repetitive Forward Surge Current (Per leg) T_C = 25°C,t_p=10ms,Half Sine Pulse T_C = 110°C,t_p=10ms,Half Sine Pulse	I_{FSM}	 90 71	A
Non-Repetitive Forward Surge Current (Per leg) T_C = 25°C,t_p=10ms,Half Sine Pulse T_C = 110°C,t_p=10ms,Half Sine Pulse	$\int i^2dt$	 40.2 25	A^2s
Power dissipation (Per leg/ Device) T_C = 25°C T_C = 110°C	P_{tot}	 107/214 46/92	W
Operating junction Range	T_j	-55 to +175	°C
Storage temperature Range	T_{stg}	-55 to +150	°C

Thermal Resistance

Parameter	Symbol	Typ.	Unit
Thermal resistance, junction – case.	R_{thJC}	1.4* 0.7**	°C/W

* Per leg, ** Device

Electrical Characteristic (at Tc = 25 °C, unless otherwise specified)

Parameter	Symbol	Value			Unit	Test Condition
		min.	typ.	max.		
Forward Voltage (Per leg)	V_F	- -	1.5 1.9	1.8 2.4	V	I_F=10A T_j=25°C T_j=175°C
Reverse Current (Per leg)	I_R	- -	- -	60 220	μA	V_R=650V T_j=25°C T_j=175°C
Total Capacitive Charge (Per leg)	Q_C	-	30.5	-	nC	V_R=400V, T_j=25℃ $Q_C = \int_0^{V_R} C(V)dV$
Total Capacitance (Per leg)	C	- - -	574 57.1 52.6	- - -	pF	T_j=25℃, f=1MHz V_R=0V V_R=200V V_R=400V

Characteristics Curve（Per leg）：

Fig 1: Forward Characteristics

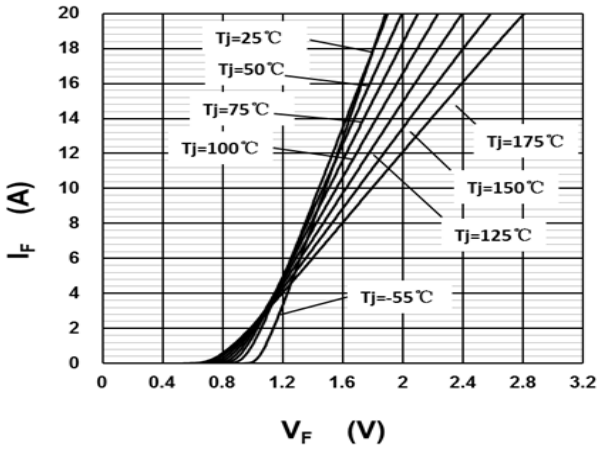


Fig 2: Reverse Characteristics

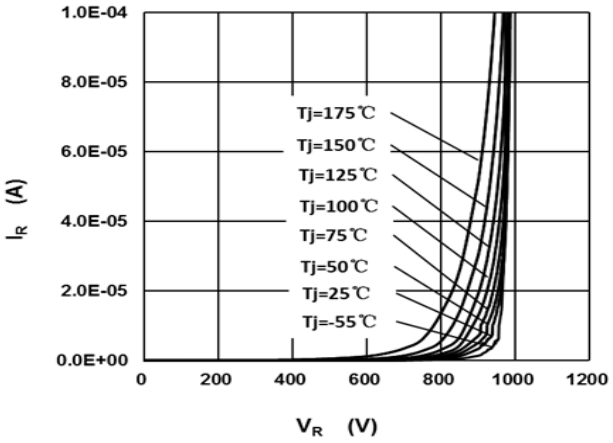


Fig 3: Current Derating

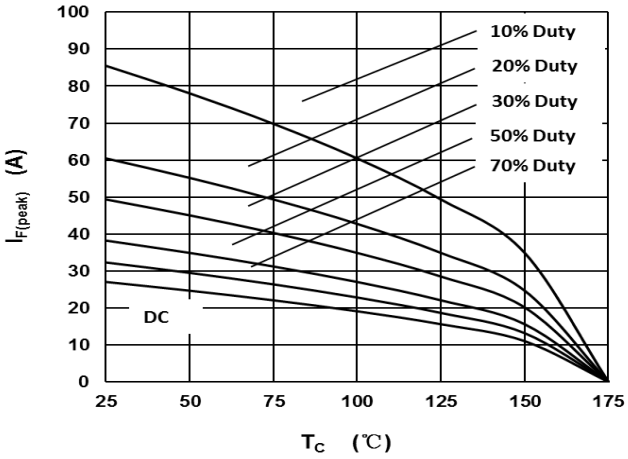


Fig 4: Power Derating

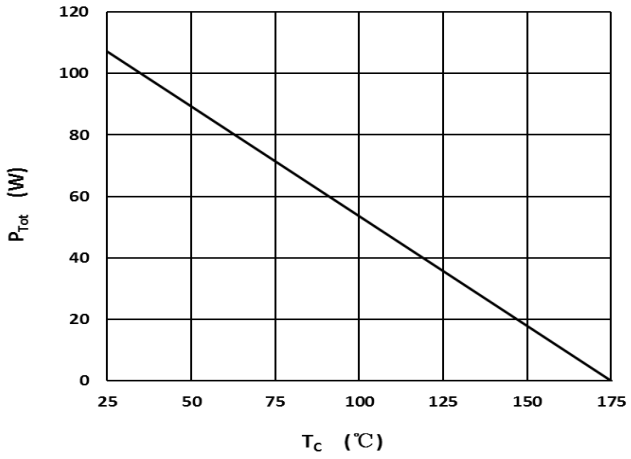


Fig 5: Capacitance vs. Reverse Voltage

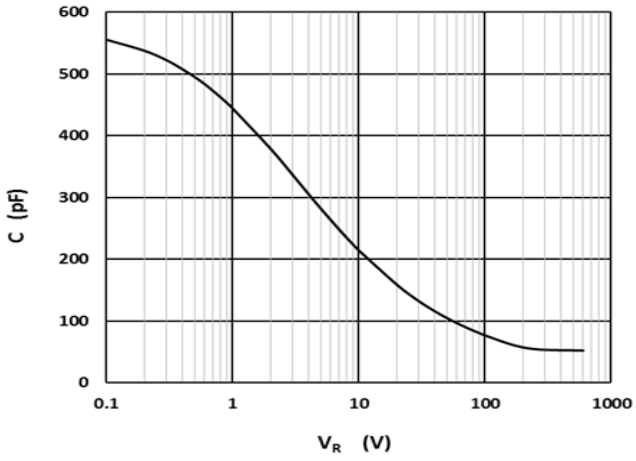


Fig 6: Reverse Charge vs. Reverse Voltage

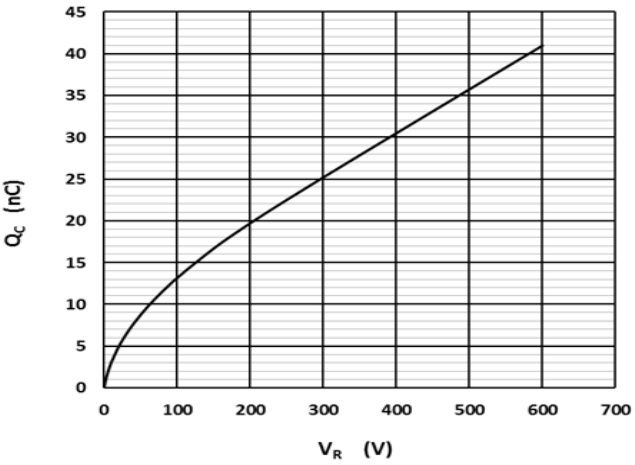


Fig 7: Typical Capacitance Stored Energy

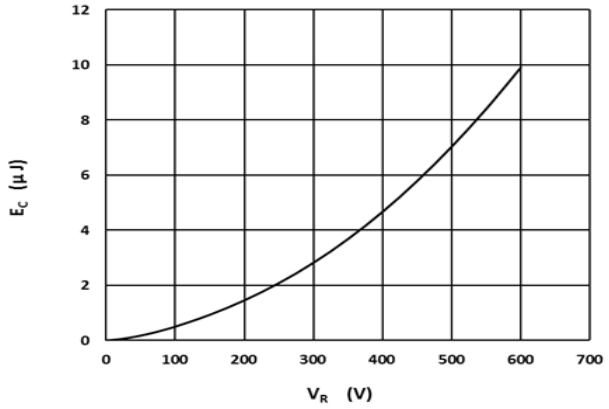
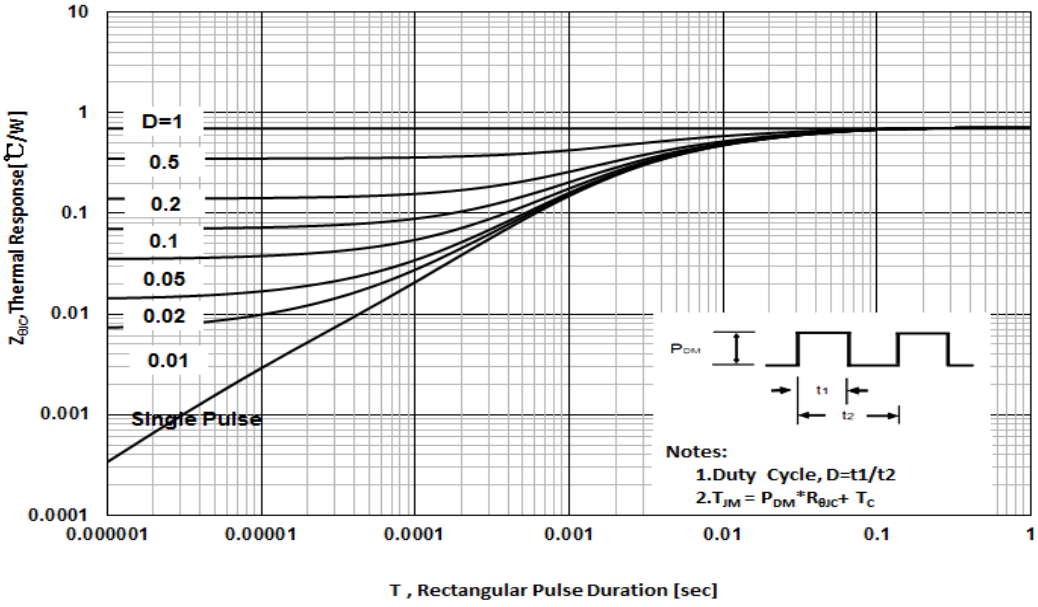
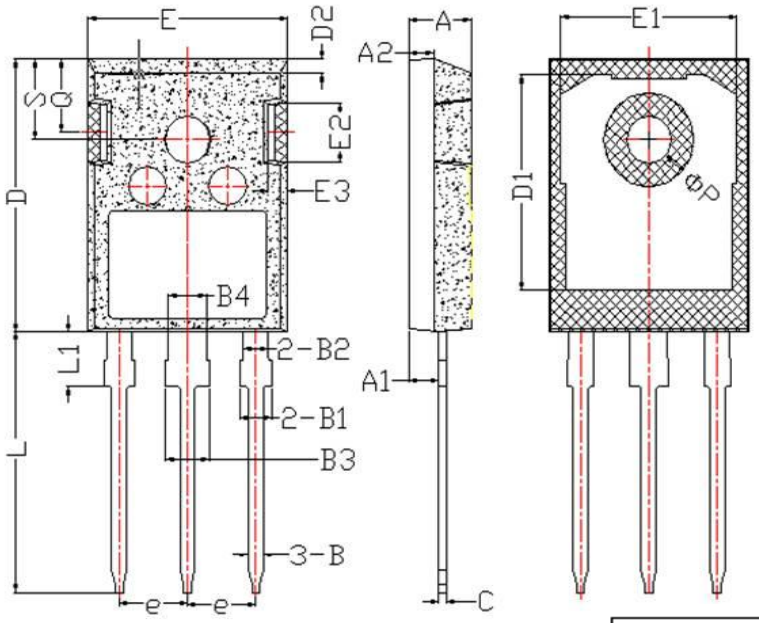


Fig 8: Transient Thermal Impedance



Package Outline: TO-247-3



项 目	Min	Max
A	4.85	5.15
A1	2.25	2.55
A2	1.85	2.15
B	1.04	1.33
B1	1.9	2.35
B2	1.9	2.15
B3	2.9	3.35
B4	2.9	3.15
C	0.55	0.68
D	20.8	21.1
D1	16.25	17.65
D2	0.95	1.35
E	15.7	16.1
E1	13.5	14.2
E2	3.8	5
E3	1	2.6
e	5.44	
L	19.8	20.3
L1	4	4.5
ΦP	3.5	3.7
Q	5.4	6
S	6	6.4

Revision History

Revison	Date	Major changes
1.0		Release of formal version.

Warnings

Exceeding the maximum ratings of the device in performance may cause damage to the device, even the permanent failure, which may affect the dependability of the machine. It is suggested to be used under 80 percent of the maximun ratings of the device.
1. When installing the heatsink, please pay attention to the torsional moment and the smoothness of the heatsink.
2. This product has not been designed or tested for use in, and is not intended for use in, applications implanted into the human body nor in applications in which failure of the product could lead to death, personal injury or property damage, including but not limited to equipment used in the operation of nuclear facilities, life-support machines, cardiac defibrillators or similar emergency medical equipment, aircraft navigation or communication or control systems, or air traffic control systems.

单击下面可查看定价，库存，交付和生命周期等信息

>>CRMICRO(华润微)