

产品规格书

Specifcation of Products

产品名称：碳化硅二极管

产品型号：MJK200U3K2

浙江世菱半导体有限公司

ZHEJIANG SHILING SEMICONDUCTOR CO.,LTD.

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拟制	审核	核准
蓝少波	曹剑龙	宗瑞

Silicon Carbide Schottky Diode

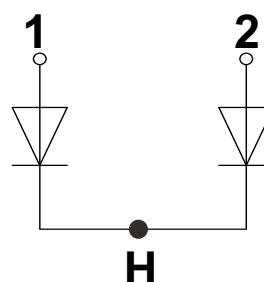
Features

- Positive temperature coefficient
- Temperature-independent switching
- Maximum working temperature at 175 °C
- Unipolar devices and zero reverse recovery current
- Zero reverse recovery current
- Essentially no switching losses
- Reduction of heat sink requirements
- High-frequency operation
- Reduction of EMI

Typical Applications

Typical applications are in power factor correction(PFC), solar inverter, uninterruptible power supply, motor drives, photovoltaic inverter, electric car and charger.

V_{RRM}	300 V
I_F (135°C)	200 A
Q_C	135.3nC



■Maximum Ratings (T_c=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Device marking code			MJK200U3K2
Reverse voltage (repetitive peak) @ T _j =25°C	V_{RRM}	V	300
Reverse voltage (Surge Peak) @ T _j =25°C	V_{RSM}	V	300
Reverse voltage (DC) @ T _j =25°C	V_{DC}	V	300
Continuous forward current @ T _c =25°C	I_F	A	200
Continuous forward current @ T _c =135°C			200
Non-repetitive peak forward surge current @ T _c =25°C, t _p =10ms, Half Sine Wave	I_{FSM}	A	380
Power Dissipation@ T _c =25°C	P_{TOT}	W	975
Power Dissipation@ T _c =110°C			162.5
i ² t Value@ T _c =25°C ,t _p =10ms	$\int i^2 dt$	A ² S	1722
Operating junction and Storage temperature range	T _j , T _{stg}	°C	-55 to +175

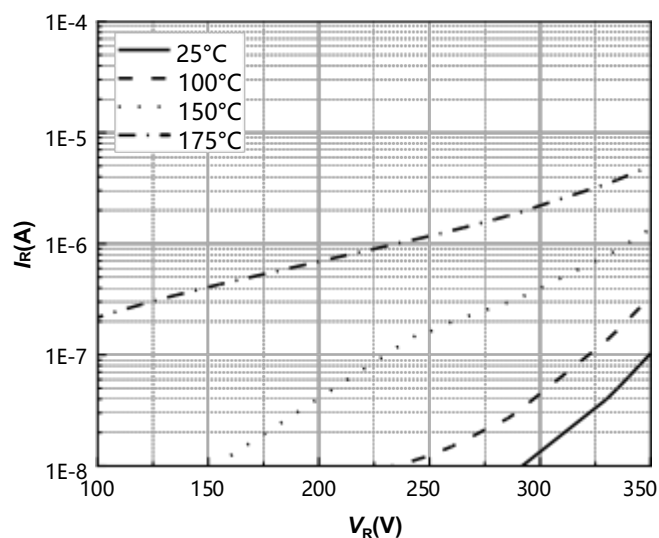
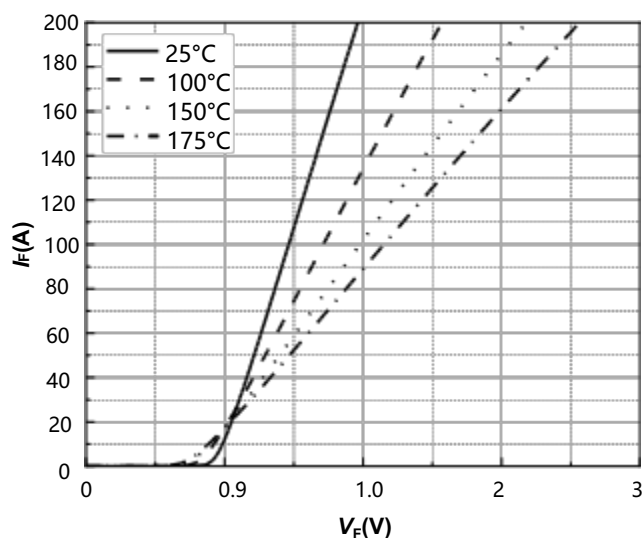
■Electrical Characteristics

PARAMTETER	SYMBOL	UNIT	TEST CONDITIONS	Typ.	Max.
Forward voltage drop	V_F	V	$I_F=100A, T_J=25^{\circ}C$	1.15	1.3
			$I_F=100A, T_J=175^{\circ}C$	1.35	-
Reverse leakage current	I_R	μA	$V_R=300V, T_J=25^{\circ}C$	3	25
			$V_R=300V, T_J=175^{\circ}C$	20	-
Total capacitive charge	Q_C	nC	$V_R=300V, T_J=25^{\circ}C, QC=\int_0^{V_R} I_C(V)dV$	135.3	-
Total capacitance	C	pF	$V_R=0V, f=1MHZ$	2453	-
			$V_R=200V, f=1MHZ$	247	-
			$V_R=300V, f=1MHZ$	243	-
Capacitance Stored Energ	VE	cμ	$R=300V$	16.5	-

■Thermal Characteristics ($T_a=25^{\circ}C$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Value
Thermal resistance	$R_{\theta J-C}$	$^{\circ}C/W$	0.4

■Typical Characteristics



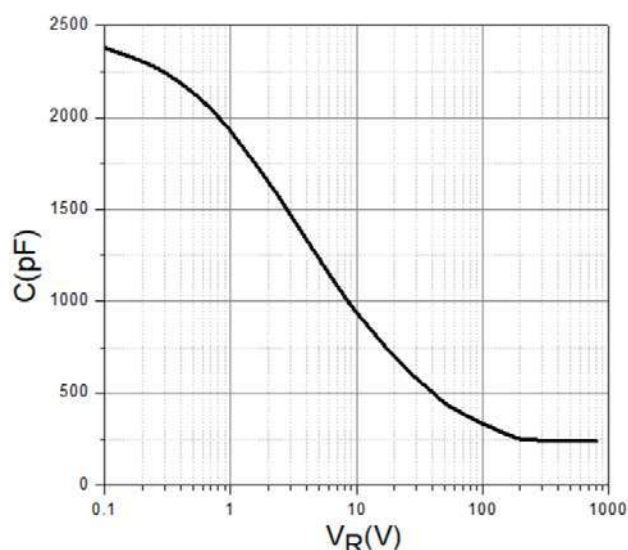


Figure 3. Capacitance vs. Reverse Voltage

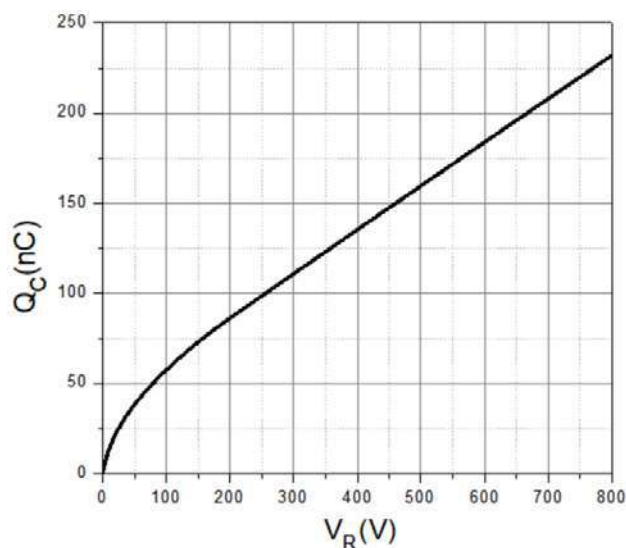


Figure 4. Total Capacitance Charge vs. Reverse Voltage

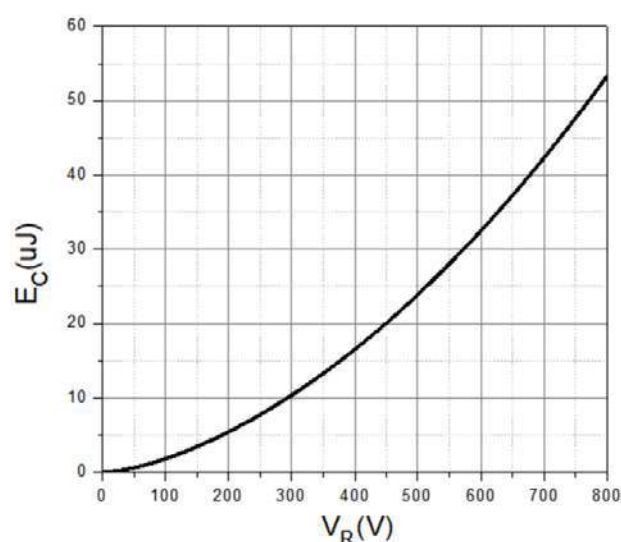


Figure 5. Capacitance Stored Energy

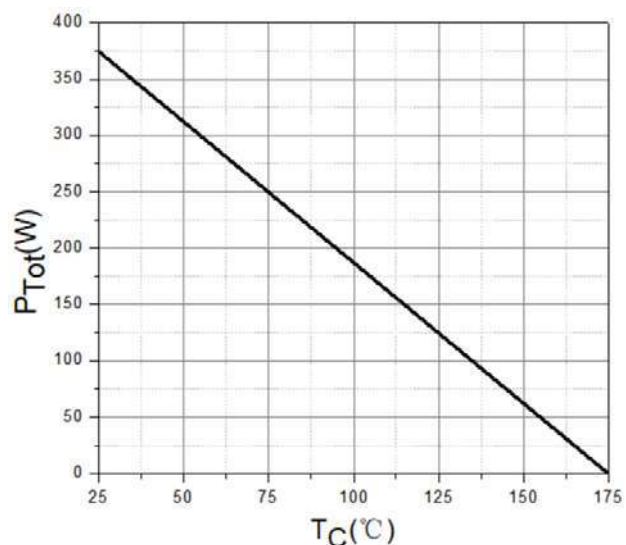


Figure 6. Power Derating

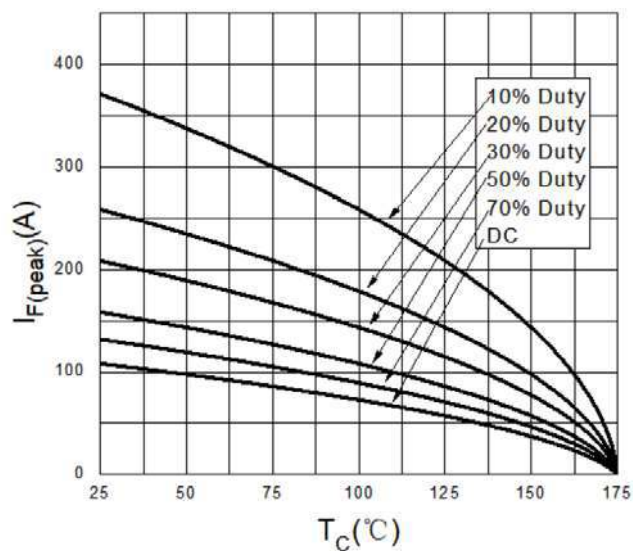


Figure 7. Current Derating

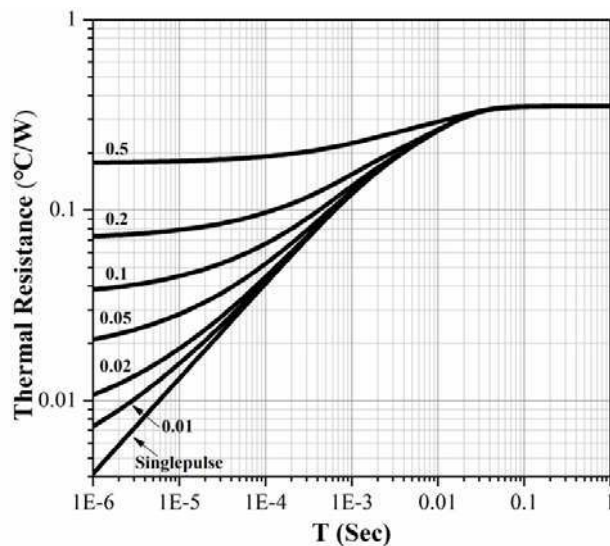
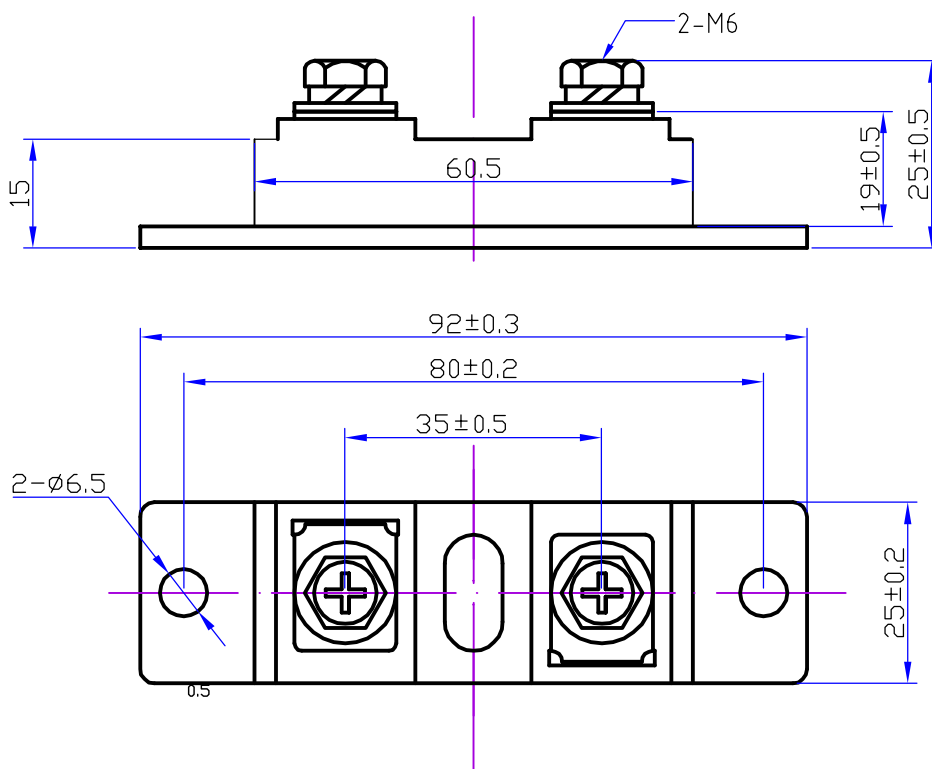


Figure 8. Transient Thermal Impedance

■Outline Dimensions



Unit:mm

