

## 产品规格书

### Specifcation of products

产品名称:肖特基二极管

产品型号: MBR1000U1K2

浙江世菱半导体有限公司  
ZHEJIANG SHILING SEMICONDUCTOR CO., LTD.

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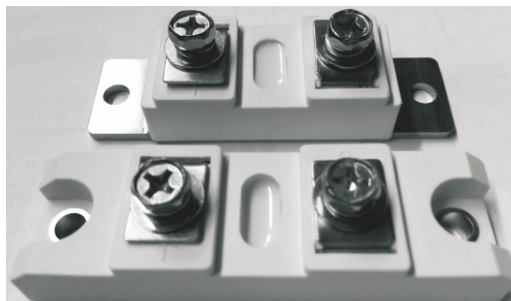
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林益龙	曹剑龙	宗瑞

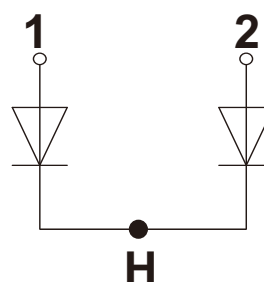
### PRODUCT FEATURES

- Ultrafast Reverse Recovery Time
- Soft Reverse Recovery Characteristics
- Low Reverse Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Inductance Package



### APPLICATIONS

- Inversion Welder
- Uninterruptible Power Supply
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Converter & Chopper
- Power Factor Correction (PFC) Circuit



### ABSOLUTE MAXIMUM RATINGS

$T_c=25^{\circ}\text{C}$  unless otherwise specified

Symbol	Parameter	Test Conditions	Values	Unit
$V_R$	Maximum D.C. Reverse Voltage		100	V
$V_{RRM}$	Maximum Repetitive Reverse Voltage		100	V
$I_{F(AV)}$	Average Forward Current	$T_c=110^{\circ}\text{C}$ , Per Diode	500	A
		$T_c=110^{\circ}\text{C}$ , Per Mouldle	1000	A
$I_{F(RMS)}$	RMS Forward Current	$T_c=110^{\circ}\text{C}$ , Per Diode	400	A
$I_{FSM}$	Non-Repetitive Surge Forward Current	$T_J=45^{\circ}\text{C}$ , $t=10\text{ms}$ , 50Hz, Sine	1500	A
		$T_J=45^{\circ}\text{C}$ , $t=8.3\text{ms}$ , 60Hz, Sine	1650	A
$I^2t$	$I^2t$ (For Fusing)	$T_J=45^{\circ}\text{C}$ , $t=10\text{ms}$ , 50Hz, Sine	19000	$\text{A}^2\text{s}$
		$T_J=45^{\circ}\text{C}$ , $t=8.3\text{ms}$ , 60Hz, Sine	17290	$\text{A}^2\text{s}$
$P_D$	Power Dissipation		694	W
$T_J$	Junction Temperature		-40 to +150	$^{\circ}\text{C}$
$T_{STG}$	Storage Temperature Range		-40 to +125	$^{\circ}\text{C}$
Torque	Module-to-Sink	Recommended (M6)	3~4.7	N.m
Torque	Module Electrodes	Recommended (M6)	3~4.7	N.m
$R_{\theta c}$	Thermal Resistance	Junction-to-Case, Per Diode	0.18	$^{\circ}\text{C} / \text{W}$
Weight			92	g

### ELECTRICAL CHARACTERISTICS

T<sub>C</sub>=25°C unless otherwise specified

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>RM</sub>	Reverse Leakage Current	V <sub>R</sub> =100V	--	--	0.5	mA
		V <sub>R</sub> =100V, T <sub>J</sub> =125°C	--	--	10	mA
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> =500A	--	0.75	0.78	V
		I <sub>F</sub> =200A, T <sub>J</sub> =125°C	--	0.65	--	V
t <sub>rr</sub>	Reverse Recovery Time	I <sub>F</sub> =1A, V <sub>R</sub> =30V, di <sub>F</sub> /dt=-200A/μs	--	300	--	ns
t <sub>rr</sub>	Reverse Recovery Time	V <sub>R</sub> =50V, I <sub>F</sub> =200A	--	310	--	ns
I <sub>RRM</sub>	Max. Reverse Recovery Current	di <sub>F</sub> /dt=-200A/μs, T <sub>J</sub> =25°C	--	6	--	A
t <sub>rr</sub>	Reverse Recovery Time	V <sub>R</sub> =50V, I <sub>F</sub> =200A	--	324	--	ns
I <sub>RRM</sub>	Max. Reverse Recovery Current	di <sub>F</sub> /dt=-200A/μs, T <sub>J</sub> =125°C	--	7	--	A

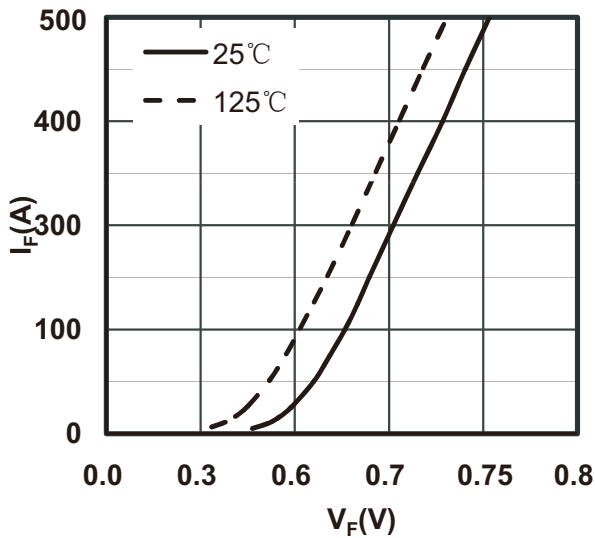


Figure 1. Forward Voltage Drop vs Forward Current

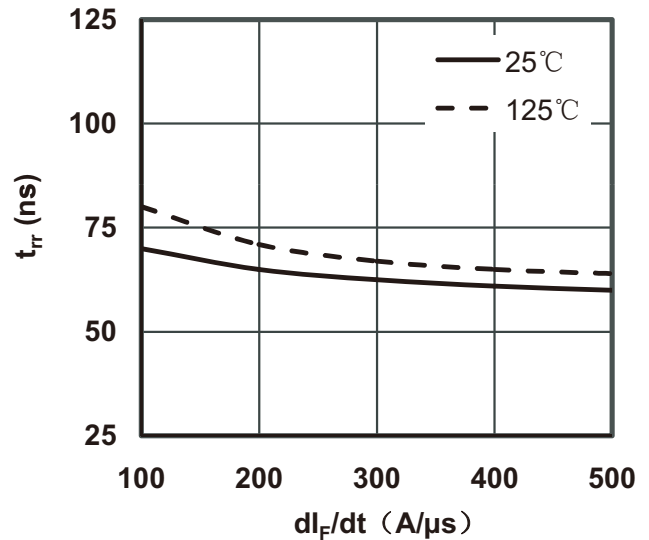


Figure 2. Reverse Recovery Time vs di<sub>F</sub>/dt

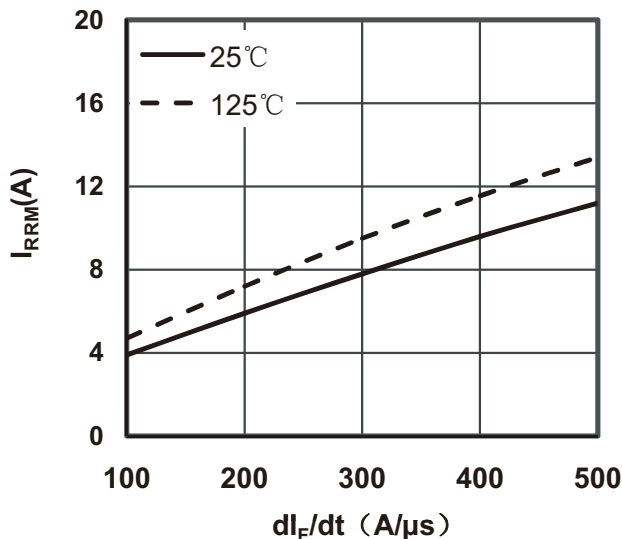


Figure 3. Reverse Recovery Current vs di<sub>F</sub>/dt

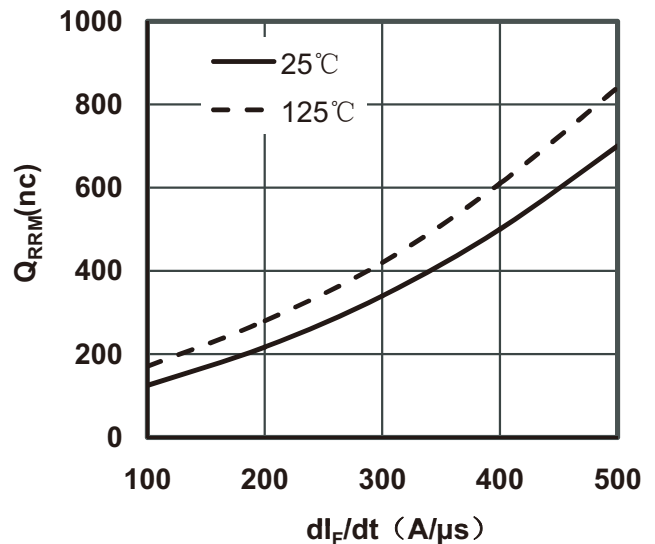
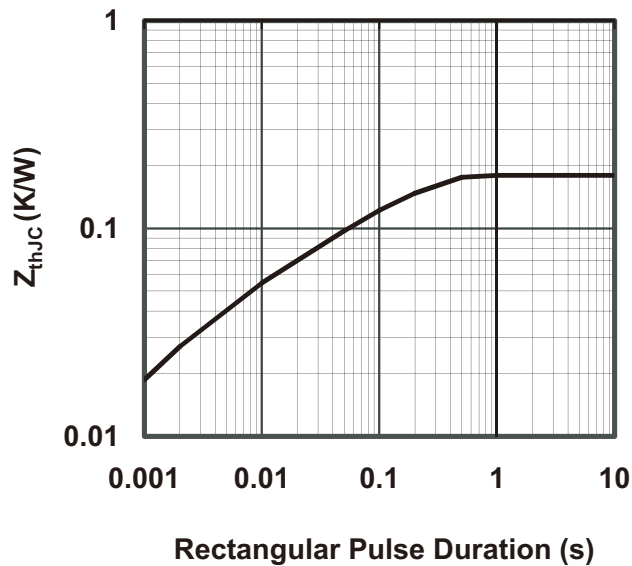
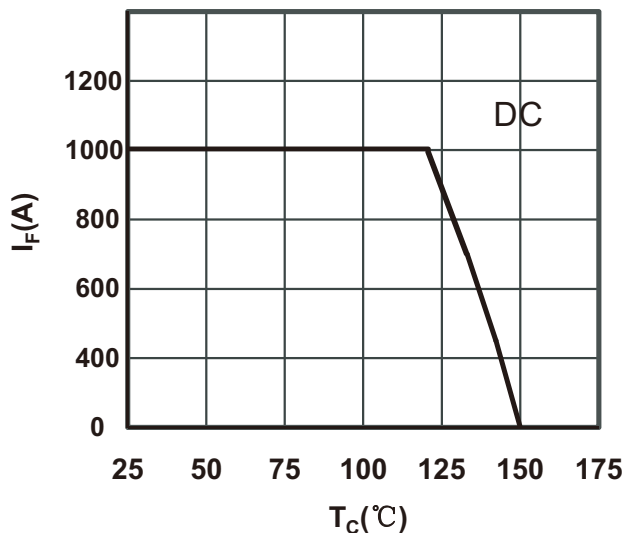
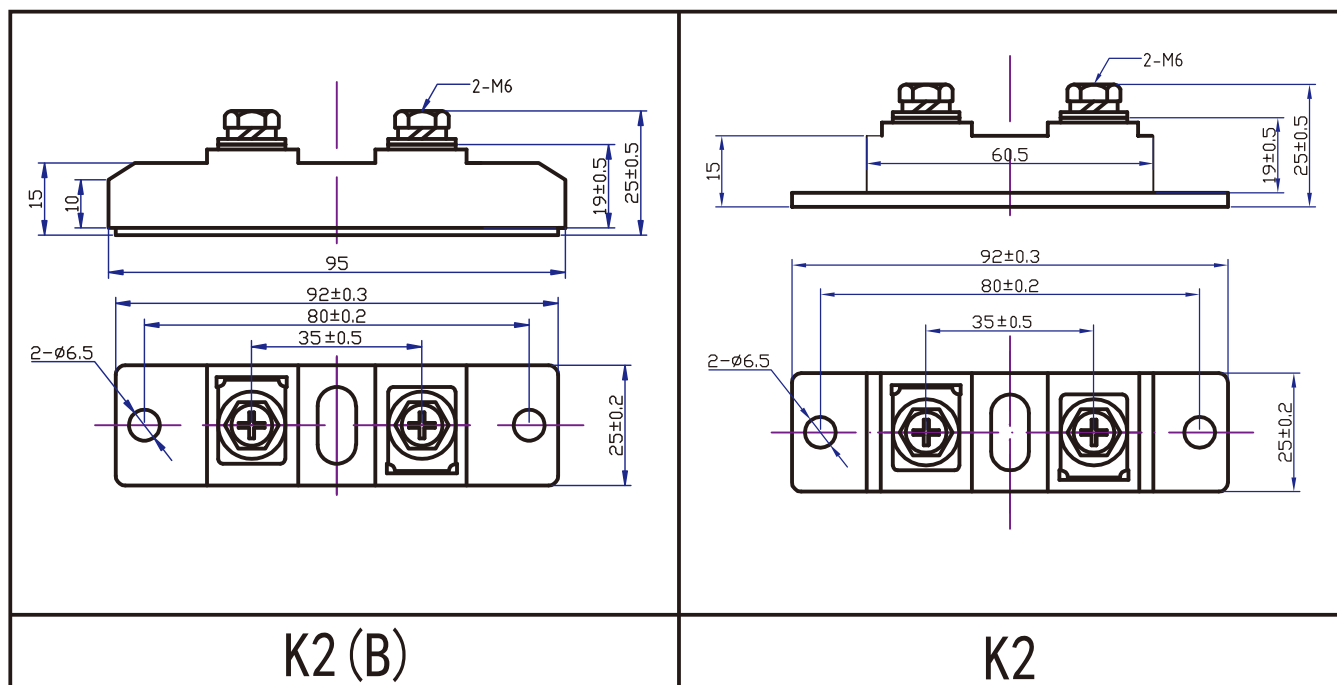


Figure 4. Reverse Recovery Charge vs di<sub>F</sub>/dt



## Package Outlines



Unit:mm