

产品规格书

Specifcation of Products

产品名称：肖特基二极管

产品型号：MBK1000U1K2

浙江世菱半导体有限公司

ZHEJIANG SHILING SEMICONDUCTOR CO.,LTD.

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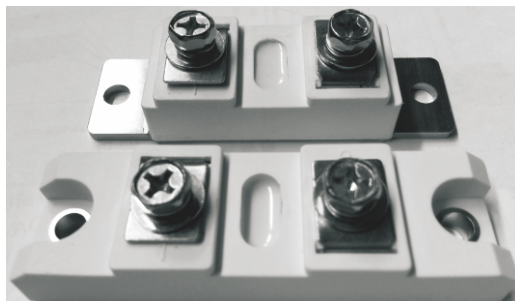
Http://www.smrshiling.com

拟制	审核	核准
蓝少波	程一凡	曹剑龙

版本号：04 更新日期：2024.4.8

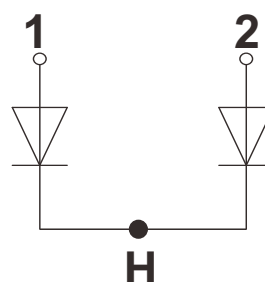
PRODUCT FEATURES

- 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 Moudle	1000	A
$I_{F(RMS)}$	RMS Forward Current	$T_C=110^{\circ}\text{C}$, Per Diode	530	A
I_{FSM}	Non-Repetitive Surge Forward Current	$T_J=45^{\circ}\text{C}$, $t=10\text{ms}$, 50Hz, Sine	15000	A
		$T_J=45^{\circ}\text{C}$, $t=8.3\text{ms}$, 60Hz, Sine	16500	A
I^2t	I^2t (For Fusing)	$T_J=45^{\circ}\text{C}$, $t=10\text{ms}$, 50Hz, Sine	190000	A^2s
		$T_J=45^{\circ}\text{C}$, $t=8.3\text{ms}$, 60Hz, Sine	172900	A^2s
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

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{RM}	Reverse Leakage Current	$V_R=100\text{V}$	--	--	0.5	mA
		$V_R=100\text{V}, T_J=125^{\circ}\text{C}$	--	--	10	mA
V_F	Forward Voltage	$I_F=500\text{A}$	--	0.75	0.80	V
		$I_F=200\text{A}, T_J=125^{\circ}\text{C}$	--	0.65	--	V
t_{rr}	Reverse Recovery Time	$I_F=1\text{A}, V_R=30\text{V}, di_F/dt=-200\text{A}/\mu\text{s}$	--	300	--	ns
t_{rr}	Reverse Recovery Time	$V_R=50\text{V}, I_F=200\text{A}$	--	310	--	ns
I_{RRM}	Max. Reverse Recovery Current	$di_F/dt=-200\text{A}/\mu\text{s}, T_J=25^{\circ}\text{C}$	--	6	--	A
t_{rr}	Reverse Recovery Time	$V_R=50\text{V}, I_F=200\text{A}$	--	324	--	ns
I_{RRM}	Max. Reverse Recovery Current	$di_F/dt=-200\text{A}/\mu\text{s}, T_J=125^{\circ}\text{C}$	--	7	--	A

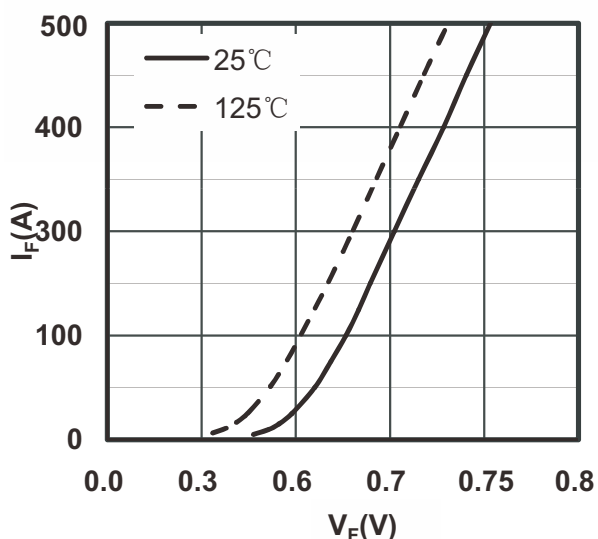


Figure 1. Forward Voltage Drop vs Forward Current

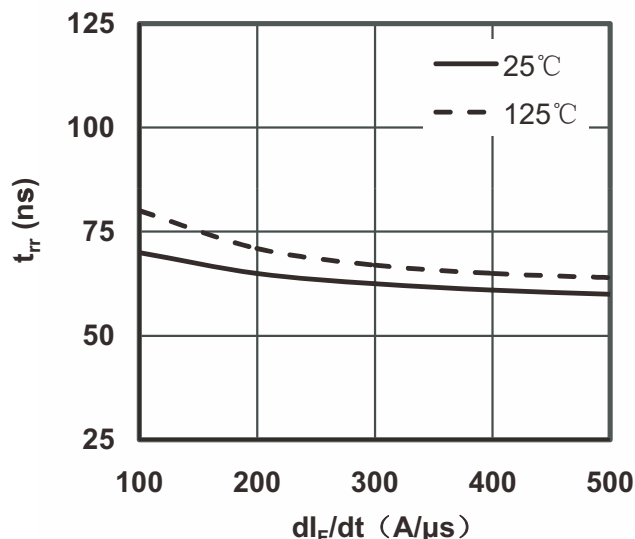


Figure 2. Reverse Recovery Time vs di_F/dt

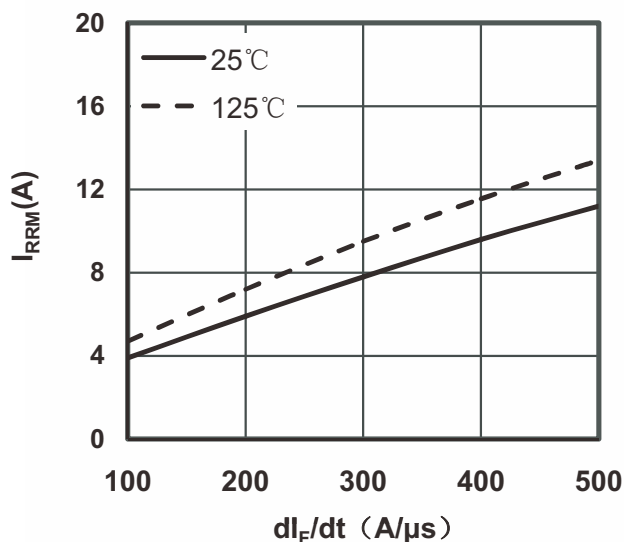


Figure 3. Reverse Recovery Current vs di_F/dt

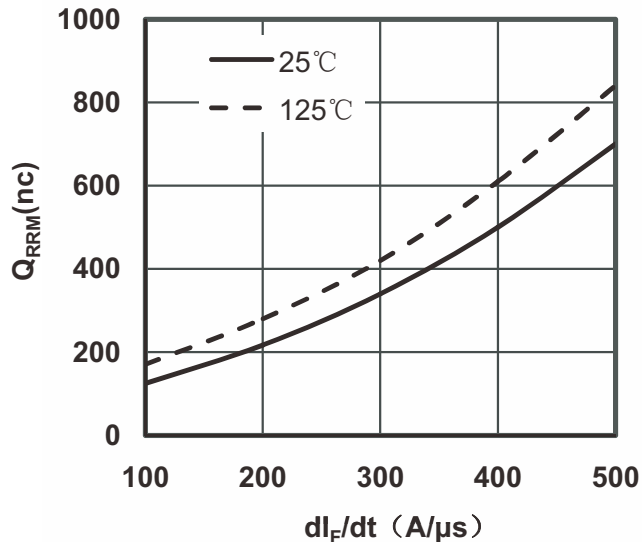
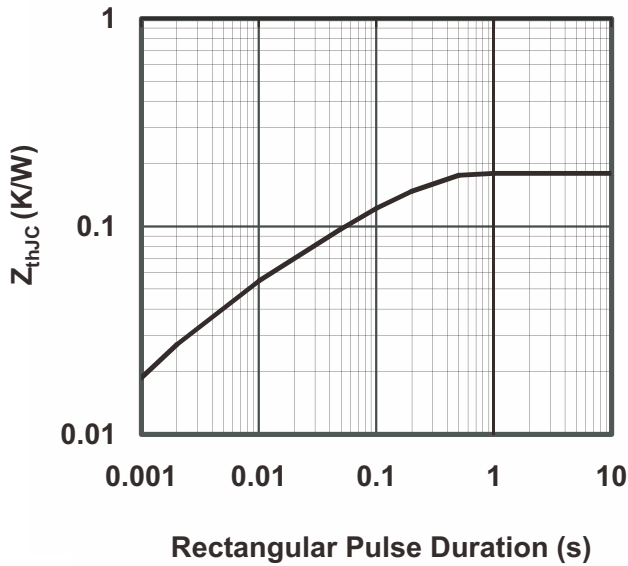
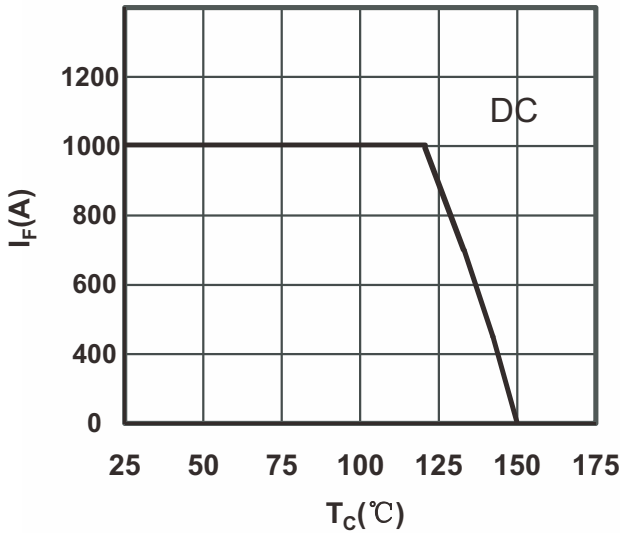


Figure 4. Reverse Recovery Charge vs di_F/dt



Package Outlines

