

产品规格书

Specifcation of products

产品名称:快恢复二极管

产品型号:MFK200U4K1

浙江世菱半导体有限公司
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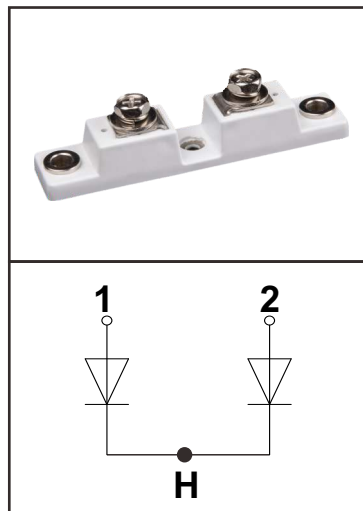
拟制	审核	核准
蓝少波	陈一凡	曹剑龙

PRODUCT FEATURES

- Ultrafast Recovery Time
- Low Recovery Loss
- Low Forward Voltage
- Low Leakage Current
- Low Inductance Package

APPLICATIONS

- Inversion Welder
- Uninterruptible Power Supply
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Converter & Chopper
- PFC



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		400	V
V _{RRM}	Maximum Repetitive Reverse Voltage			
I _{F(AV)}	Average Forward Current	T _C =100℃, Per Diode	100	A
		T _C =100℃, Per Moudle	200	
I _{F(RMS)}	RMS Forward Current	T _C =100℃, Per Diode	140	
I _{FSM}	Non Repetitive Surge Forward Current	T _J =45℃,t=10ms,Sine,peak value	1300	
		T _J =45℃,t=8.3ms,Sine,peak value	1360	
I ² t	For Fusing	T _J =45℃,t=10ms,Sine,peak value	7900	A ² S
		T _J =45℃,t=8.3ms,Sine,peak value	7700	
P _D	Power Dissipation		538	W
T _J	Junction Temperature		-40 to +150	℃
T _{STG}	Storage Temperature Range		-40 to +125	℃
Torque	Module to Sink	Recommended (M6)	3~5	Nm
Torque	Module Electrodes	Recommended (M6)	3~5	Nm
R _{thJC}	Junction to Case Thermal Resistance(Per Diode)		0.22	℃ /W
Weight				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	$V_R=400\text{V}$	--	--	0.5	mA
		$V_R=400\text{V}, T_J=125^{\circ}\text{C}$	--	--	5	mA
V_F	Forward Voltage	$I_F=100\text{A}$	--	1.10	1.20	V
		$I_F=100\text{A}, T_J=125^{\circ}\text{C}$	--	0.90	--	V
t_{rr}	Reverse Recovery Time	$I_F=1\text{A}, V_R=30\text{V}, di_F/dt=-200\text{A}/\mu\text{s}$	--	40	--	ns
t_{rr}	Reverse Recovery Time	$V_R=200\text{V}, I_F=100\text{A}$	--	60	--	ns
I_{RRM}	Max. Reverse Recovery Current	$di_F/dt=-200\text{A}/\mu\text{s}, T_J=25^{\circ}\text{C}$	--	10	--	A
t_{rr}	Reverse Recovery Time	$V_R=200\text{V}, I_F=100\text{A}$	--	100	--	ns
I_{RRM}	Max. Reverse Recovery Current	$di_F/dt=-200\text{A}/\mu\text{s}, T_J=125^{\circ}\text{C}$	--	19	--	A

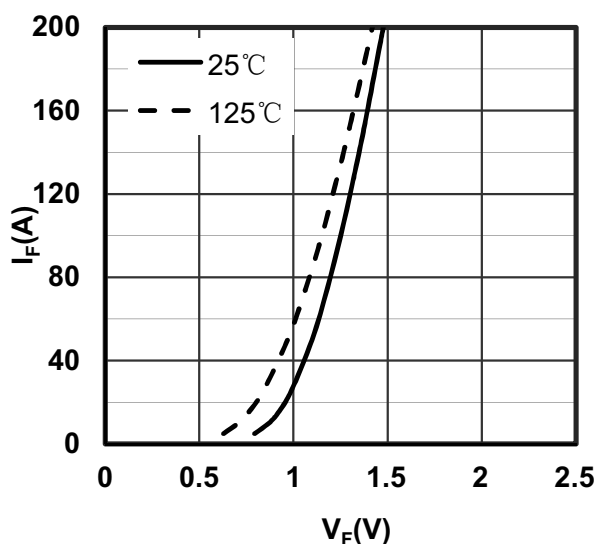


Figure 1. Forward Voltage Drop vs Forward Current

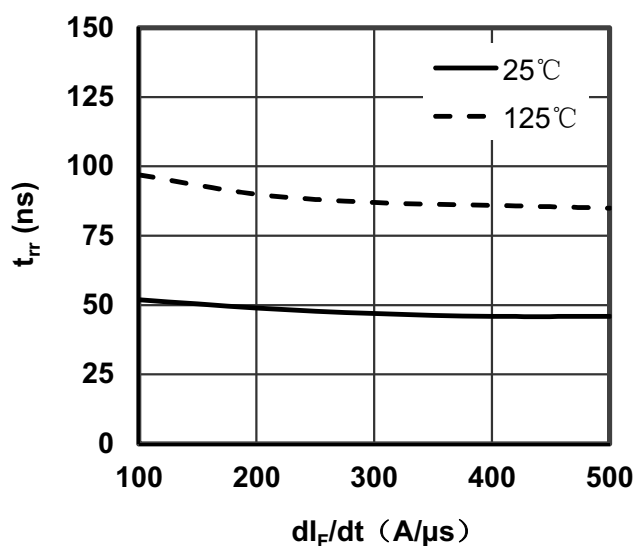


Figure 2. Reverse Recovery Time vs di_F/dt

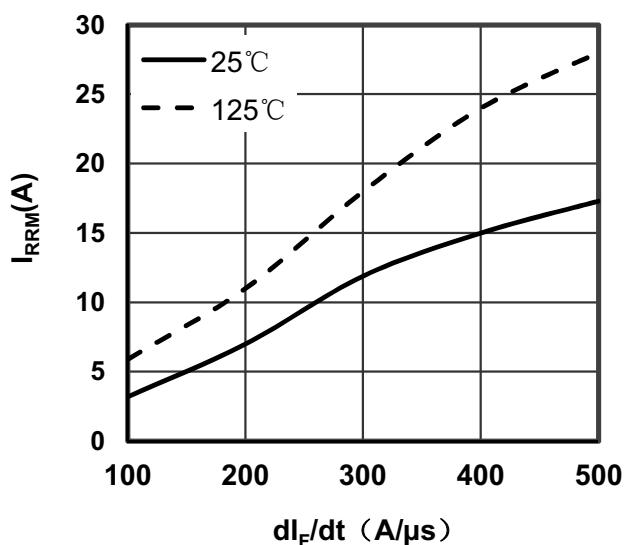


Figure3. Reverse Recovery Current vs di_F/dt

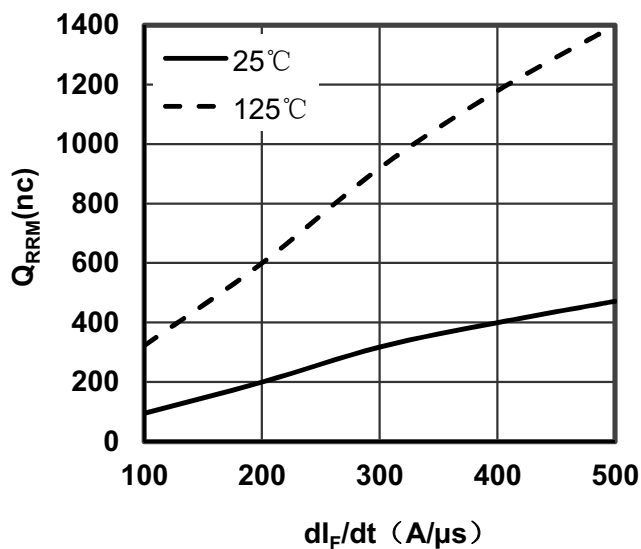


Figure4. Reverse Recovery Charge vs di_F/dt

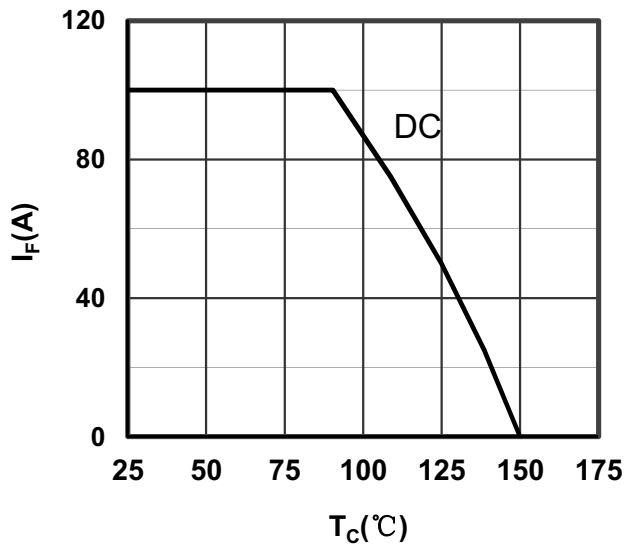


Figure 5. Forward current vs Case temperature

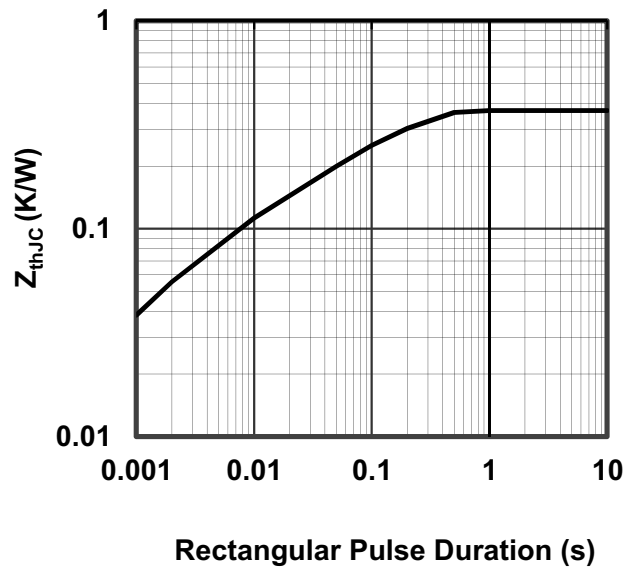


Figure 6. Transient Thermal Impedance

Package Outline

