

## 产品规格书

### Specification of products

产品名称:快恢复二极管

产品型号:MFK200U6-K1

浙江世菱半导体有限公司  
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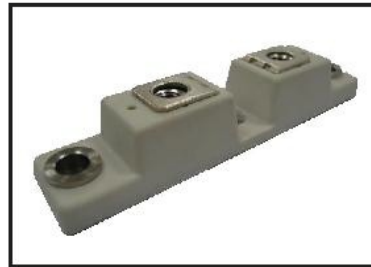
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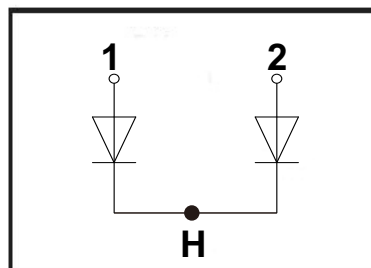
### PRODUCT FEATURES

- 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		600	V
$V_{RRM}$	Maximum Repetitive Reverse Voltage			
$I_{F(AV)}$	Average Forward Current	$T_C=100^{\circ}\text{C}$ , Per Diode	100	A
		$T_C=100^{\circ}\text{C}$ , Per Moudle	200	
$I_{F(RMS)}$	RMS Forward Current	$T_C=100^{\circ}\text{C}$ , Per Diode	140	
$I_{FSM}$	Non Repetitive Surge Forward Current	$T_J=45^{\circ}\text{C}$ , $t=10\text{ms}$ , Sine, peak value	1000	
		$T_J=45^{\circ}\text{C}$ , $t=8.3\text{ms}$ , Sine, peak value	1100	
$I^2t$	For Fusing	$T_J=45^{\circ}\text{C}$ , $t=10\text{ms}$ , Sine, peak value	5000	A <sup>2</sup> S
		$T_J=45^{\circ}\text{C}$ , $t=8.3\text{ms}$ , Sine, peak value	5000	
$P_D$	Power Dissipation		500	W
$T_J$	Junction Temperature		-40 to +150	$^{\circ}\text{C}$
$T_{STG}$	Storage Temperature Range		-40 to +125	$^{\circ}\text{C}$
<b>Torque</b>	Module to Sink	Recommended (M6)	3~4.7	Nm
<b>Torque</b>	Module Electrodes	Recommended (M6)	3~4.7	Nm
$R_{thJC}$	Junction to Case Thermal Resistance(Per Diode )		0.25	$^{\circ}\text{C}/\text{W}$
<b>Weight</b>			70	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	$V_R=600\text{V}$	--	--	0.5	mA
		$V_R=600\text{V}, T_J=125^{\circ}\text{C}$	--	--	1	mA
$V_F$	Forward Voltage	$I_F=100\text{A}$	1.0	1.2	1.5	V
		$I_F=100\text{A}, T_J=125^{\circ}\text{C}$	--	1.1	--	V
$t_{rr}$	Reverse Recovery Time	$I_F=1\text{A}, V_R=30\text{V}, di_F/dt=-200\text{A}/\mu\text{s}$	--	55	--	ns
$t_{rr}$	Reverse Recovery Time	$V_R=300\text{V}, I_F=100\text{A}$	--	130	--	ns
$I_{RRM}$	Max. Reverse Recovery Current	$di_F/dt=-200\text{A}/\mu\text{s}, T_J=25^{\circ}\text{C}$	--	11	--	A
$t_{rr}$	Reverse Recovery Time	$V_R=300\text{V}, I_F=100\text{A}$	--	230	--	ns
$I_{RRM}$	Max. Reverse Recovery Current	$di_F/dt=-200\text{A}/\mu\text{s}, T_J=125^{\circ}\text{C}$	--	29	--	A

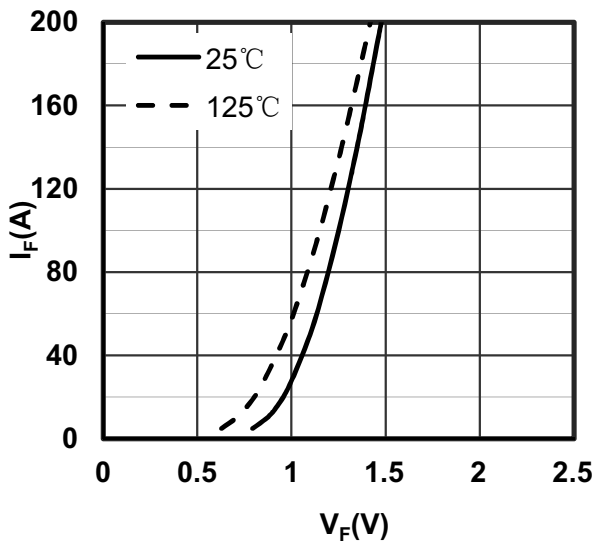


Figure 1. Forward Voltage Drop vs Forward Current

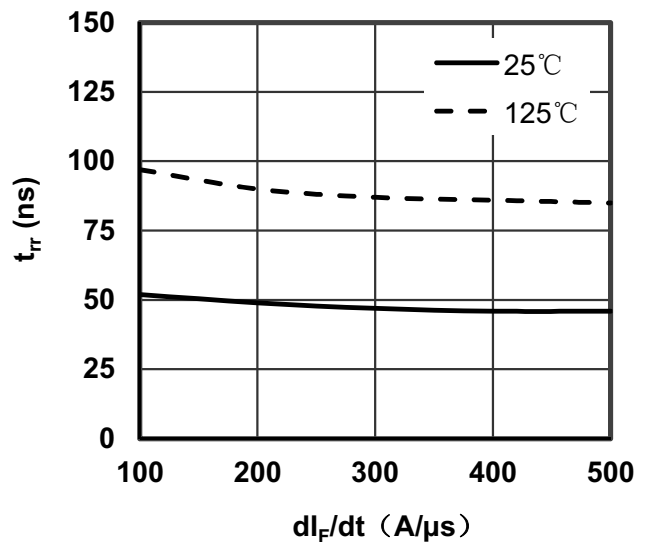


Figure 2. Reverse Recovery Time vs  $di_F/dt$

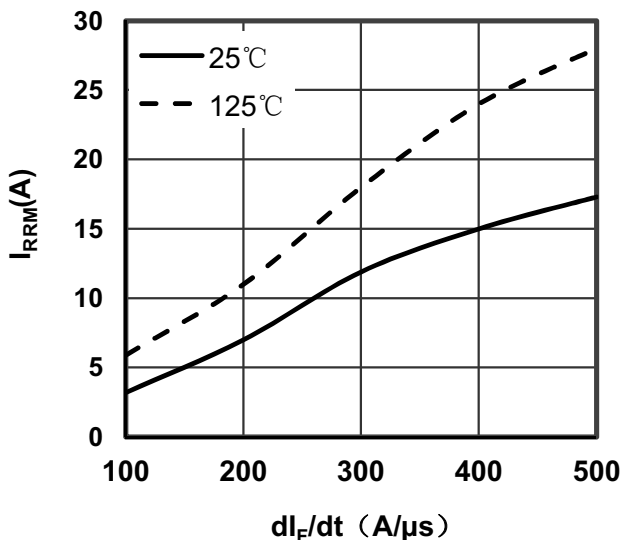


Figure3. Reverse Recovery Current vs  $di_F/dt$

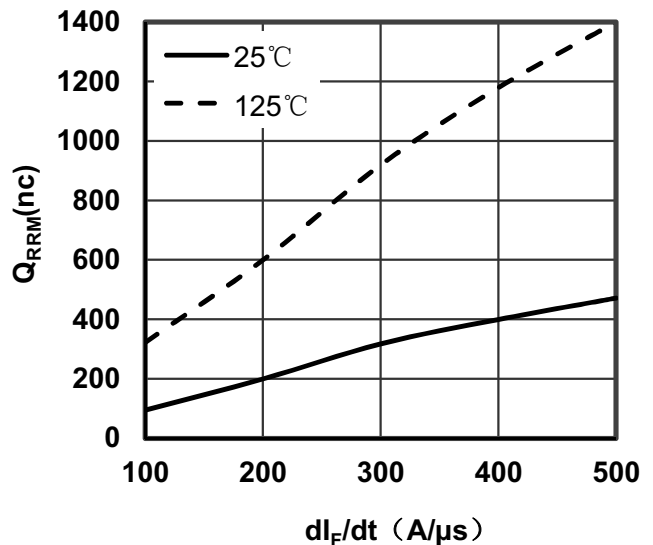


Figure4. Reverse Recovery Charge vs  $di_F/dt$

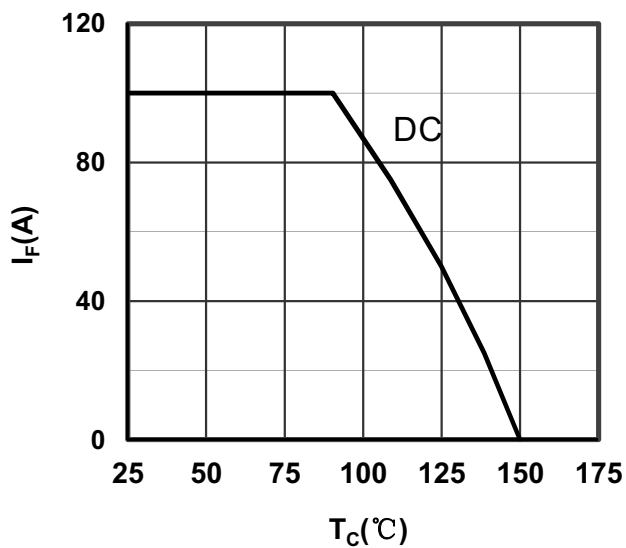


Figure 5. Forward current vs Case temperature

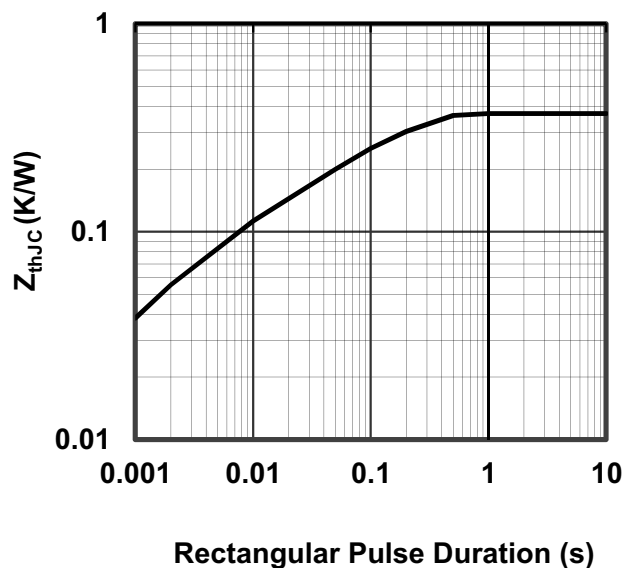
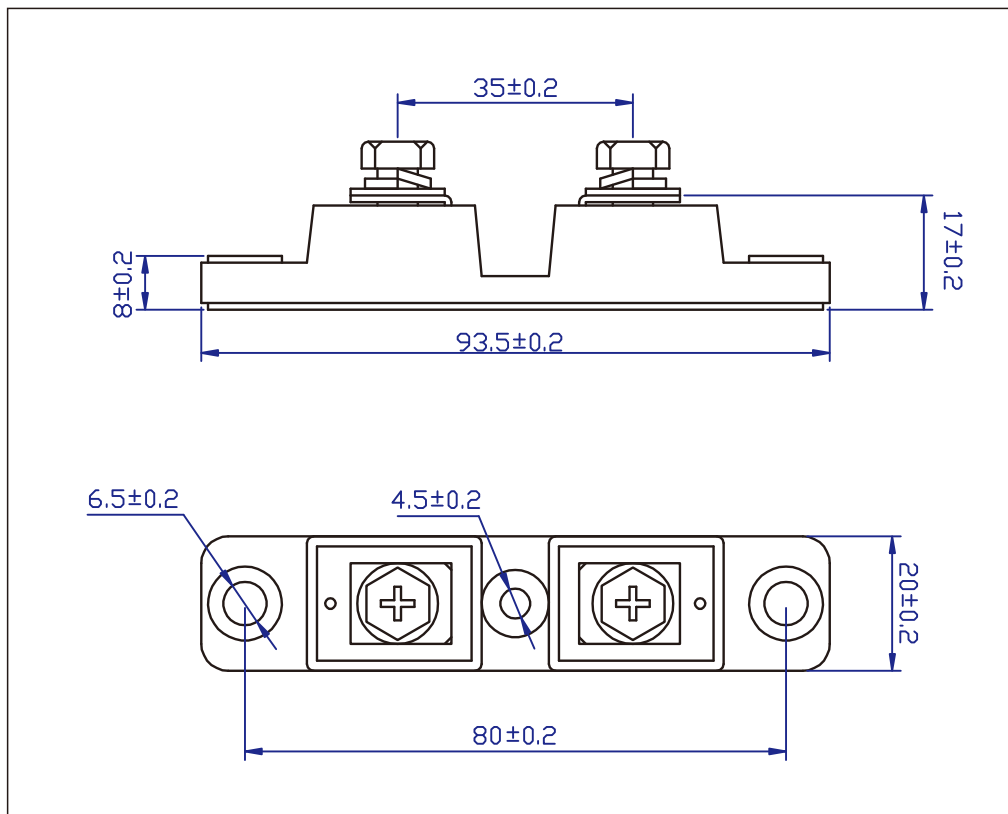


Figure 6. Transient Thermal Impedance

## Package Outline



Dimensions (mm)