

## 产品规格书

### Specifcation of products

产品名称:肖特基二极管

产品型号: MBK400U1K2

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

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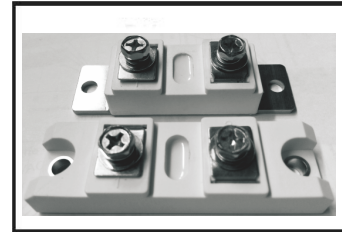
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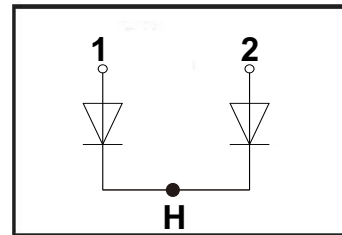
### PRODUCT FEATURES

- 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 (UPS)
- 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              | $T_c=100^{\circ}\text{C}$ , Per Diode                    | 200         | A                           |
|                 |                                      | $T_c=100^{\circ}\text{C}$ , Per Moudle                   | 400         | A                           |
|                 |                                      | $T_c=100^{\circ}\text{C}$ , 20KHz, Per Moudle            | 280         | A                           |
| $I_{F(RMS)}$    | RMS Forward Current                  | $T_c=100^{\circ}\text{C}$ , Per Diode                    | 280         | A                           |
| $I_{FSM}$       | Non-Repetitive Surge Forward Current | 1/2 Cycle, 60Hz, Sine                                    | 4000        | A                           |
| $I^2t$          | $I^2t$ (For Fusing)                  | $T_J=45^{\circ}\text{C}$ , $t=8.3\text{ms}$ , 60Hz, Sine | 11200       | $\text{A}^2\text{s}$        |
| $P_D$           | Power Dissipation                    |                                                          | 510         | 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       | Nm                          |
| Torque          | Module Electrodes                    | Recommended (M6)                                         | 3~4.7       | Nm                          |
| $R_{\theta JC}$ | Thermal Resistance                   | Junction-to-Case                                         | 0.25        | $^{\circ}\text{C}/\text{W}$ |
| 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         | $I_F=200\text{A}$                          | --   | 0.65 | --   | V    |
|          |                         | $I_F=200\text{A}, T_J=125^{\circ}\text{C}$ | --   | 0.55 | --   | V    |

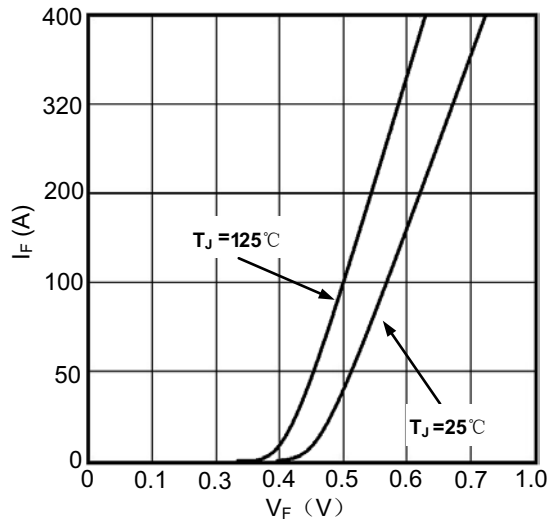


Figure1. Forward Voltage Drop vs Forward Current

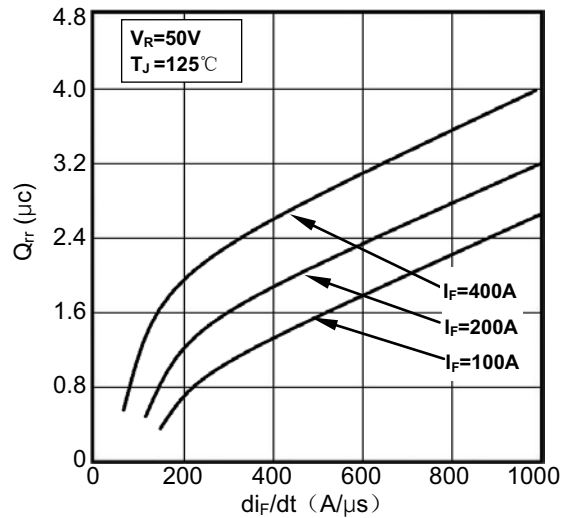


Figure2. Reverse Recovery Charge vs  $di_F/dt$

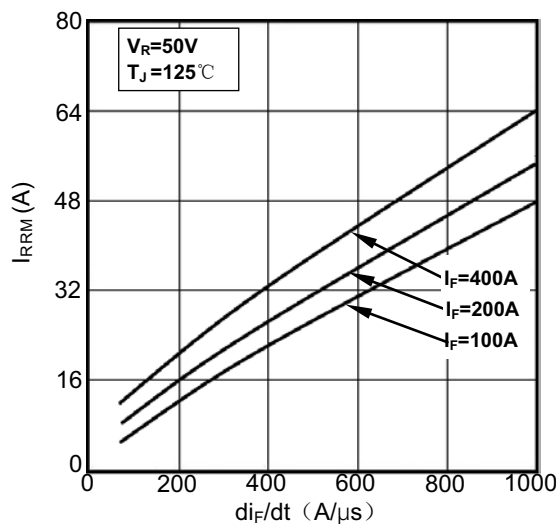


Figure3. Reverse Recovery Current vs  $di_F/dt$

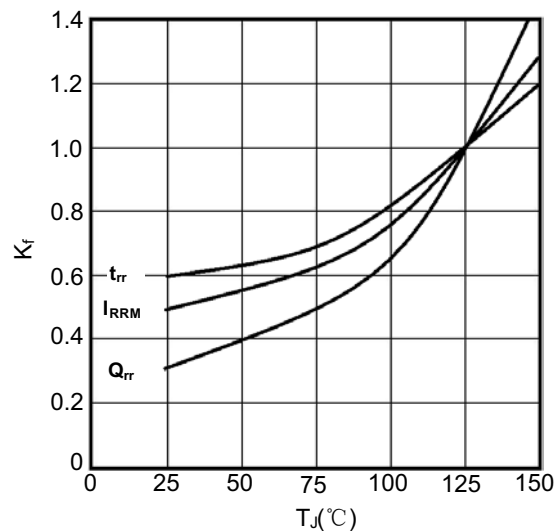


Figure4. Dynamic Parameters vs Junction Temperature

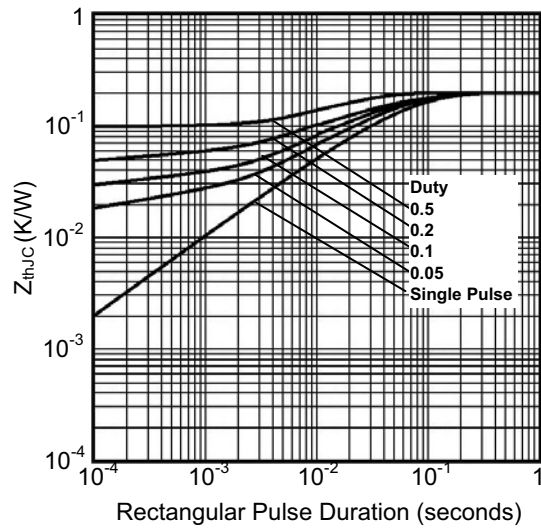
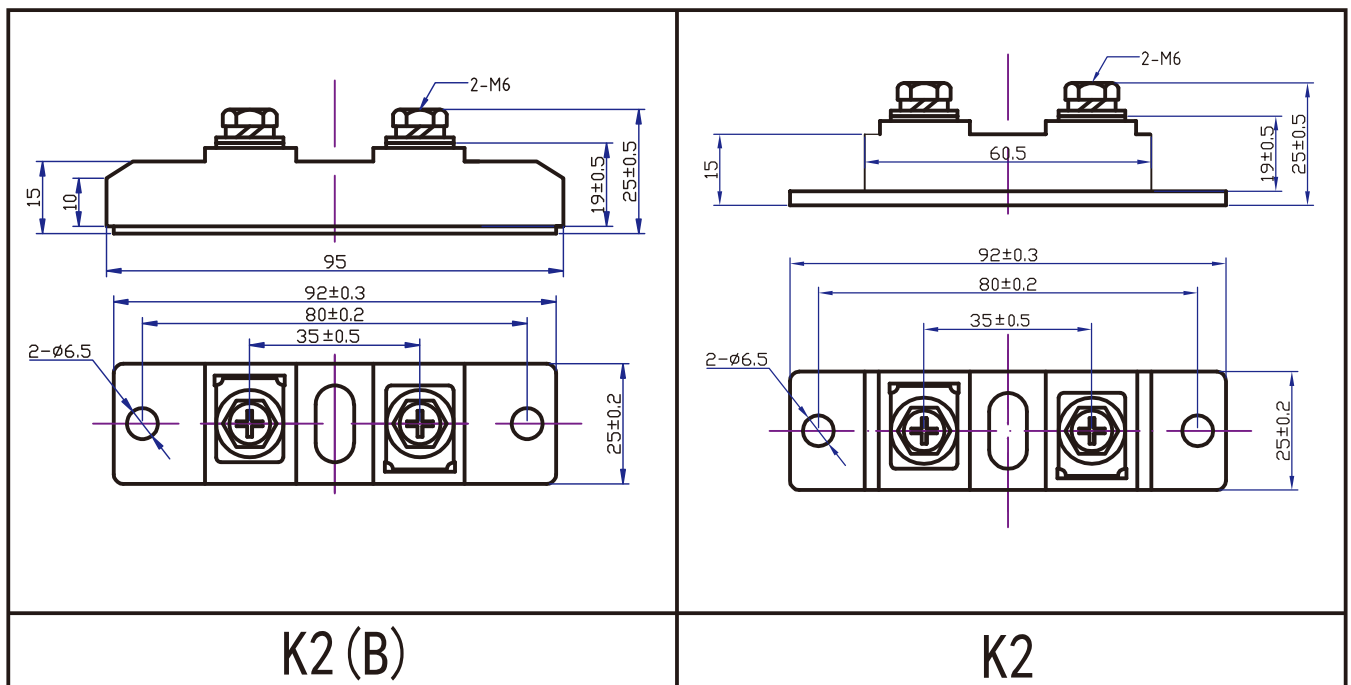


Figure6. Transient Thermal Impedance

## Package Outline



Dimensions (mm)