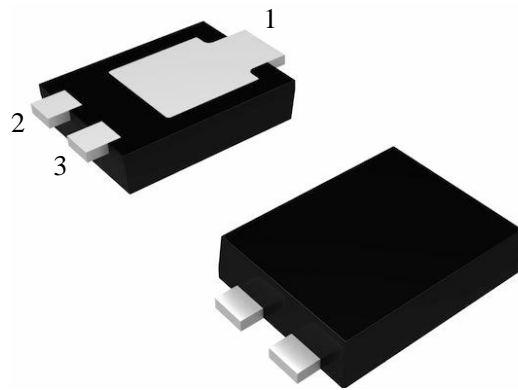
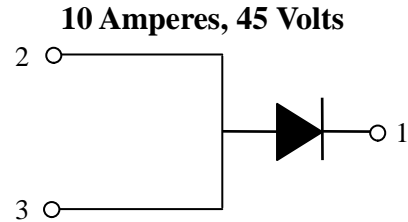


## 45V Trench MOS Barrier Schottky

Low VF 0.45V@10A, 25 °C

### Features

- Trench MOS schottky technology
- Low stored charge Majority Carrier Conduction
- Ultra low forward voltage drop
- Low leakage current
- Low power loss and high efficiency
- High surge capacity
- ESD rating:>20K volts



### Typical Application

Schottky rectifier design for high frequency switched mode power supplies, such as adaptators and on board DC/DC converters.

TO-277

### Device Summary

| Symbol         | Value  |
|----------------|--------|
| $I_F(AV)$      | 10A    |
| $V_{RRM}$      | 45V    |
| $V_F(Typical)$ | 0.45V  |
| $T_j(max)$     | 150 °C |

### Mechanical Data

Case: JEDEC TO-277 molded plastic body

Terminals: Plated leads, solderable per MIL-STD-750, Method 2026

Mounting Position: Any

**Note: Pins 2 & 3 must be electrically connected at the printed circuit board.**

| Major Rating and Characteristics |                                                                       |                                |                                |                    |
|----------------------------------|-----------------------------------------------------------------------|--------------------------------|--------------------------------|--------------------|
| Symbol                           | Parameter                                                             |                                | Values                         | Units              |
| $V_{RRM}$                        | Repetitive peak reverse voltage                                       |                                | 45                             | V                  |
| $T_J$                            | Storage temperature range                                             |                                | -55 to 150                     | $^{\circ}\text{C}$ |
| $I_{FSM}$                        | Surge non repetitive forward current                                  | 10 ms sine or 6 ms rect. pulse | 150                            | A                  |
| $I_{F(AV)}$                      | Maximum average forward current 50 % duty cycle, rectangular waveform |                                | $T_c=35^{\circ}\text{C}$<br>10 |                    |

| Electrical Characteristics( $T_A=25^{\circ}\text{C}$ unless otherwise noted) |                                                       |                           |             |      |      |               |
|------------------------------------------------------------------------------|-------------------------------------------------------|---------------------------|-------------|------|------|---------------|
| Parameter                                                                    | Test condition                                        |                           | Symbol      | TYP  | MAX  | UNITS         |
| Forward Voltage drop                                                         | $I_F=5\text{A}$                                       | $T_A=25^{\circ}\text{C}$  | $V_F^{(1)}$ | 0.39 | -    | V             |
|                                                                              | $I_F=7.5\text{A}$                                     |                           |             | 0.42 |      |               |
|                                                                              | $I_F=10\text{A}$                                      |                           |             | 0.45 | 0.5  |               |
|                                                                              | $I_F=5\text{A}$                                       | $T_A=125^{\circ}\text{C}$ |             | 0.3  | -    |               |
|                                                                              | $I_F=7.5\text{A}$                                     |                           |             | 0.35 |      |               |
|                                                                              | $I_F=10\text{A}$                                      |                           |             | 0.39 | 0.45 |               |
| Reverse leakage current                                                      | $V_R=45\text{V}$                                      | $T_A=25^{\circ}\text{C}$  | $I_R^{(2)}$ | 30   | 100  | $\mu\text{A}$ |
|                                                                              |                                                       | $T_A=125^{\circ}\text{C}$ |             | 18   | 70   | mA            |
| Junction capacitance                                                         | $V_R=5\text{V}_{DC}, 25^{\circ}\text{C}(1\text{MHz})$ |                           | $C_j$       | -    |      | pF            |

**Notes** (1) Pulse test: 300us pulse width,2% duty cycle (2) Pulse test: 300us pulse width,2% duty cycle

| Thermal Characteristics( $T_A=25^{\circ}\text{C}$ unless otherwise noted) |                |           |                             |
|---------------------------------------------------------------------------|----------------|-----------|-----------------------------|
| Parameter                                                                 | Symbol         | SK10U45MA | UNIT                        |
| Typical thermal resistance                                                | $R_{JA}^{(1)}$ | 75        | $^{\circ}\text{C}/\text{W}$ |
|                                                                           | $R_{JM}^{(2)}$ | 34        |                             |

**Notes**

- (1) Free air, mounted on recommended PCB, 2oz.pad area; thermal resistance  $R_{JA}$ -junction to ambient  
 (2) Cathode pad dimensions 18.8mm x 14.4mm. Anode pad dimensions 5.6mm x 14.4mm;  
 $R_{JM}$ -junction to mount

## Characteristics Curves ( $T_A=25\text{ }^\circ\text{C}$ unless otherwise noted)

Fig.1 Typical Forward Voltage Characteristics

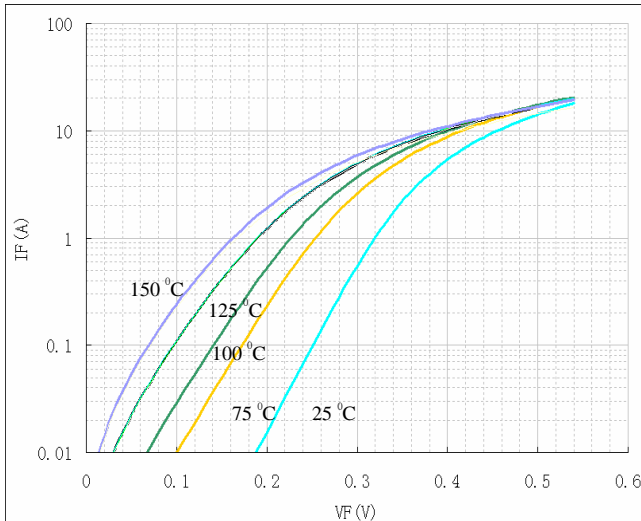
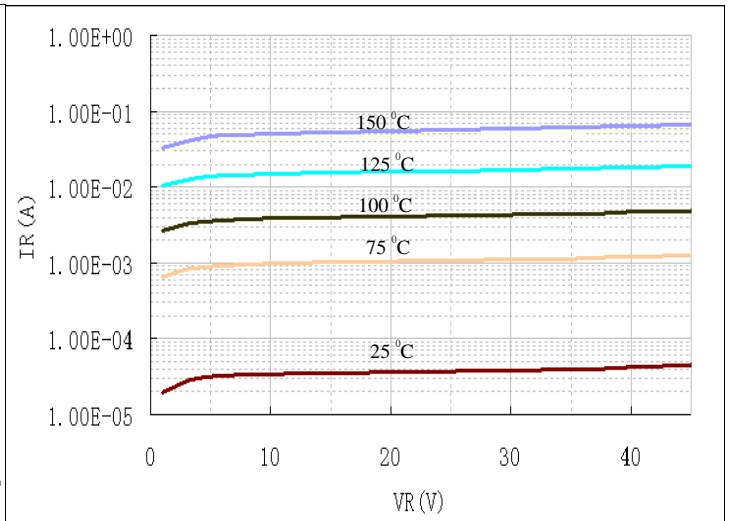


Fig.2 Typical Reverse Leakage Characteristics



## Package Outline Dimensions in Millimeters

