

AUTOMOTIVE SCHOTTKY BARRIER RECTIFIER

Reverse Voltage - 100 Volts
 Forward Current - 2.0Amperes

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Metal silicon junction ,majority carrier conduction
- Guard ring for overvoltage protection
- Low power loss ,high efficiency
- High current capability , low forward voltage drop
- High surge capability
- High temperature soldering guaranteed:260°C/10 seconds at terminals
- Component in accordance to RoHS 2015/863/EU
- AEC-Q101 qualified and PPAP capable



IATF16949认证



AEC-Q101 Qualified

MECHANICAL DATA

- Case: SOD-123FL molded plastic body
- Terminals: Solder Plated, solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end
- Weight: 11.7 mg (approximately)

SOD-123FL



TYPICAL APPLICATIONS

For use in low voltage ,high frequency inverters ,DC/DC converters, free wheeling , and polarity protection applications

MAXIMUM RATINGS

(Ratings at 25°C ambient temperature unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|--------------------------------------------------------------------------------------------------------------|-------------|------------|------|
| Maximum repetitive peak reverse voltage | V_{RRM} | 100 | V |
| Maximum average forward rectified current | $I_{F(AV)}$ | 2.0 | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL) | I_{FSM} | 50 | A |
| Operating junction temperature range | T_j | -55 to+150 | °C |
| Storage temperature range | T_{stg} | -55 to+150 | °C |

RATINGS AND CHARACTERISTICS OF K2A-V

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ Unless otherwise noted)

| Parameters | Test Conditions | Symbol | Min. | Typ. | Max. | Units | |
|---------------------------------------|---------------------------|-------------------|-------------------|------|------|-------|---------------|
| Breakdown voltage Blocking voltage | $I_R=200\mu\text{A}$ | V_{BR} V_R | 100 | - | - | V | |
| Instaneous forward voltage | $T_J=25^{\circ}\text{C}$ | V_F 1) | $I_F=0.5\text{A}$ | - | 0.58 | - | V |
| | | | $I_F=1.0\text{A}$ | - | 0.67 | - | |
| | | | $I_F=2.0\text{A}$ | - | 0.75 | 0.80 | |
| | $T_J=125^{\circ}\text{C}$ | | $I_F=0.5\text{A}$ | - | 0.47 | - | |
| | | | $I_F=1.0\text{A}$ | - | 0.54 | - | |
| | | | $I_F=2.0\text{A}$ | - | 0.61 | 0.66 | |
| Reverse current | $T_J=25^{\circ}\text{C}$ | $V_R=100\text{V}$ | I_R 2) | - | - | 5.0 | μA |
| | $T_J=100^{\circ}\text{C}$ | | | - | - | 0.5 | mA |
| | $T_J=125^{\circ}\text{C}$ | | | - | - | 2.5 | |
| Junction capacitance | 4V, 1MHz | C_J | - | 69 | - | pF | |

Notes: 1. Pulse test: 300 μs pulse width, 1% duty cycle 2. Pulse test: pulse width $\leq 40\text{ms}$

THERMAL CHARACTERISTICS

| Parameter | Symbol | SOD-123FL | Unit | |
|-------------------------------|---------------------|-----------------|------|-----------------------------|
| Typical thermal resistance 3) | Junction to Ambient | $R_{\theta JA}$ | 82 | $^{\circ}\text{C}/\text{W}$ |
| | Junction to Lead | $R_{\theta JL}$ | 26 | |

3. Mounted on 1 inch square pad size (1 x 0.5 inch for each lead) on FR4 board. The heat generated must be less than the thermal conductivity from junction-to-ambient: $dP_d/dT_J < 1/R_{\theta JA}$

AVAILABALE PACK INFORMATION

| Product code | Pack | Reel Size (mm) | Quantity (pcs/reel) | Box Size L×W×H (mm) | Quantity (reel/box) | Carton Size L×W×H (mm) | Quantity (box/carton) |
|-----------------|------|----------------|---------------------|---------------------|---------------------|------------------------|-----------------------|
| K2A-V-SOD-123FL | T/R | $\Phi 330$ | 7500 | 330×35×333 | 2 | 364×364×360 | 8 |

RATINGS AND CHARACTERISTICS OF K2A-V

FIG. 1-FORWARD CURRENT DERATING CURVE

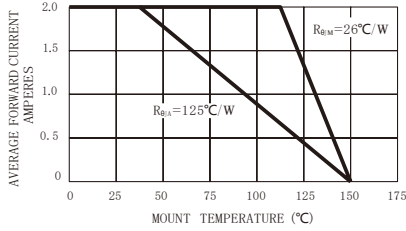


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

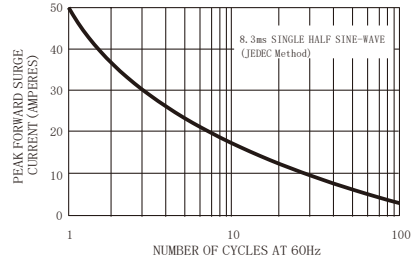


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

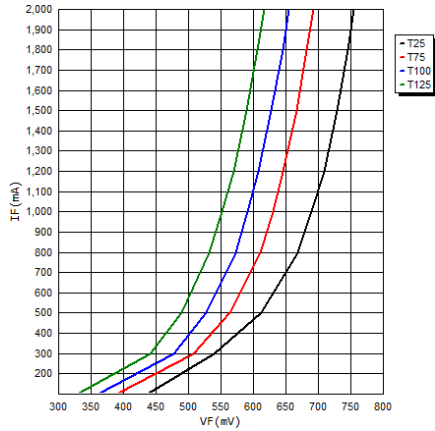


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

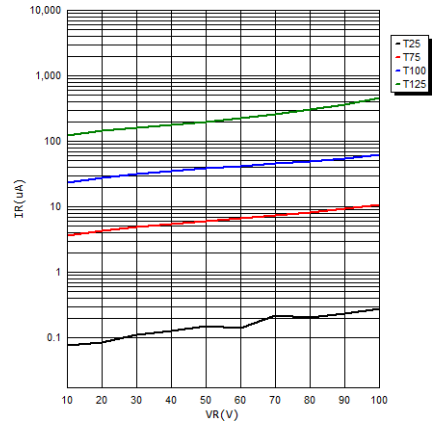
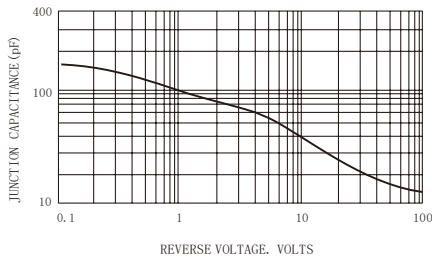
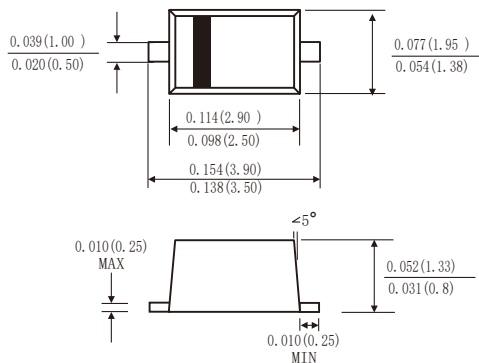


FIG. 5-TYPICAL JUNCTION CAPACITANCE

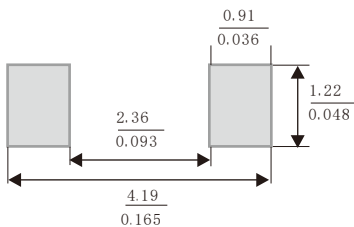


PACKAGE OUTLINE DIMENSIONS

SOD-123FL



Suggested PAD Layout



Dimensions in millimeters/inches