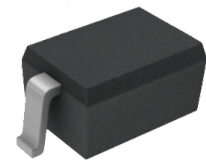


FEATURES

| Surface Mount Package Ideally Suited for Automatic Insertion

| Very Low reverse leakage



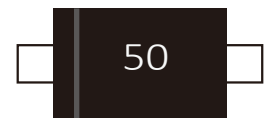
SOD-123

MECHANICAL DATA

| SOD-123 Small Outline Plastic Package

| Polarity: Color band denotes cathode end

| Mounting Position: Any



Marking



Schematic Symbol

APPROVALS

| | |
|-------------|------------------------------------|
| RoHS | Compliance with 2011/65/EU |
| HF | Compliance with IEC61249-2-21:2003 |

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

| Parameter | Symbol | Value | Unit | |
|---|-----------------|-------------|-----------------------------|---|
| Reverse Breakdown Voltage | V_{RRM} | 130 | V | |
| Working Peak Reverse Voltage | V_{RWM} | 130 | | |
| DC Blocking Voltage | V_R | 130 | | |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 90 | V | |
| Power Dissipation(note 2) | P_d | 250 | mW | |
| Forward Continuous Current | I_{FM} | 215 | mA | |
| Repetitive Peak Forward Current | I_{FRM} | 500 | mA | |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 500 | $^{\circ}\text{C}/\text{W}$ | |
| Peak Forward Surge Current $T_A=25^{\circ}\text{C}$ @ | I_{FSM} | tp=1.0us | 4.0 | A |
| | | tp=1.0ms | 1.0 | |
| | | tp=1.0s | 0.5 | |
| Junction Temperature | T_J | 150 | $^{\circ}\text{C}$ | |
| Storage Temperature Range | T_{STG} | -65 to +150 | $^{\circ}\text{C}$ | |

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

| Parameter | Test Condition | Symbol | Min. | Typ. | Max. | Unit |
|---------------------------------|---|----------|------|------|------|---------------|
| Reverse Voltage(note 1) | $I_R = 100\mu\text{A}, T_j = 25^{\circ}\text{C}$ | V_{BR} | 130 | | | V |
| | $I_R = 100\mu\text{A}, T_j = 125^{\circ}\text{C}$ | | 130 | | | |
| Reverse Leakage Current(note 1) | $V_R = 75\text{V}, T_j = 25^{\circ}\text{C}$ | I_R | | | 5.0 | nA |
| | $V_R = 75\text{V}, T_j = 125^{\circ}\text{C}$ | | | | 80 | |
| Forward Voltage(note 1) | $I_F = 1.0\text{mA}, T_j = 25^{\circ}\text{C}$ | V_F | | | 0.9 | V |
| | $I_F = 10\text{mA}, T_j = 25^{\circ}\text{C}$ | | | | 1.0 | |
| | $I_F = 50\text{mA}, T_j = 25^{\circ}\text{C}$ | | | | 1.1 | |
| | $I_F = 150\text{mA}, T_j = 25^{\circ}\text{C}$ | | | | 1.25 | |
| | $I_F = 10\text{mA}, T_j = 125^{\circ}\text{C}$ | | | | 1.0 | |
| Total Capacitance | $V_R = 0\text{V}, f = 1\text{MHz}$ | C_T | | 2.4 | 5 | pF |
| Reverse Recovery Time | $I_F = I_R = 10\text{mA}$ $I_{rr} = 0.1 \times I_R, R_L = 100\Omega$ | t_{rr} | | | 3 | μs |

Notes: 1. Short duration pulse to minimize self-heating effect
 2. Part mounted on FR-4 PC board with recommended pad layout.

CHARACTERISTIC CURVES

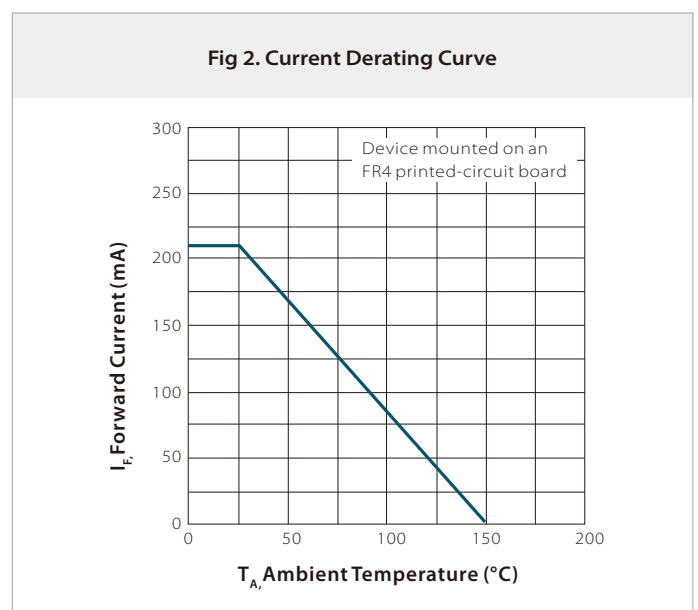
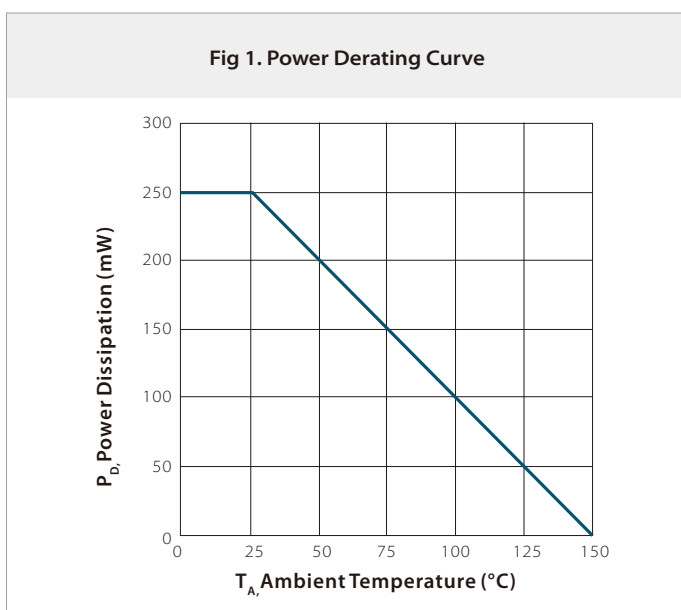
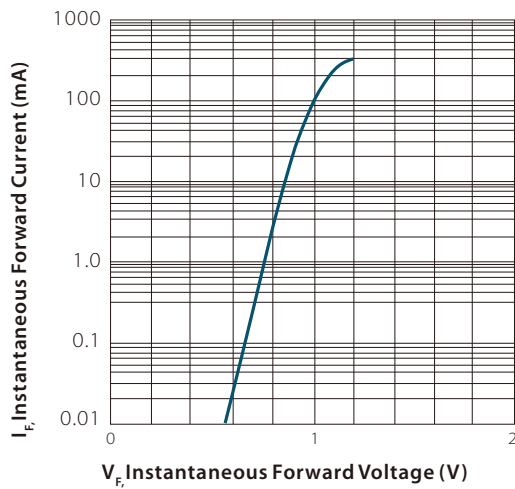
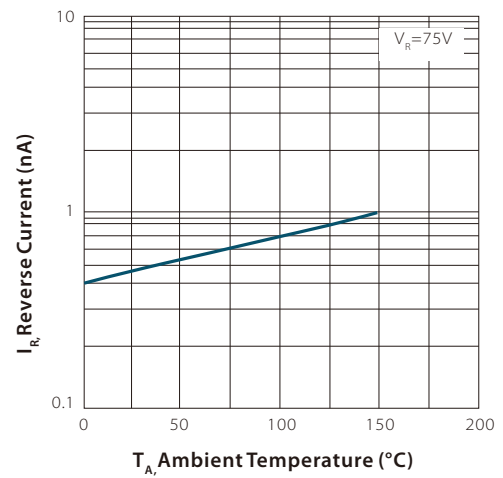
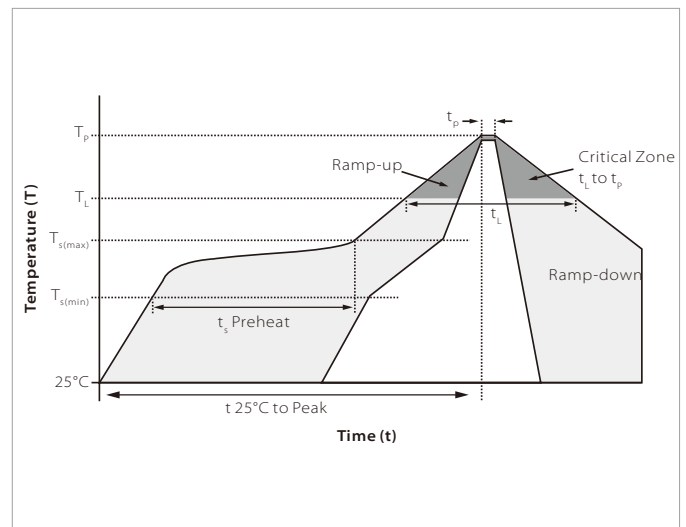


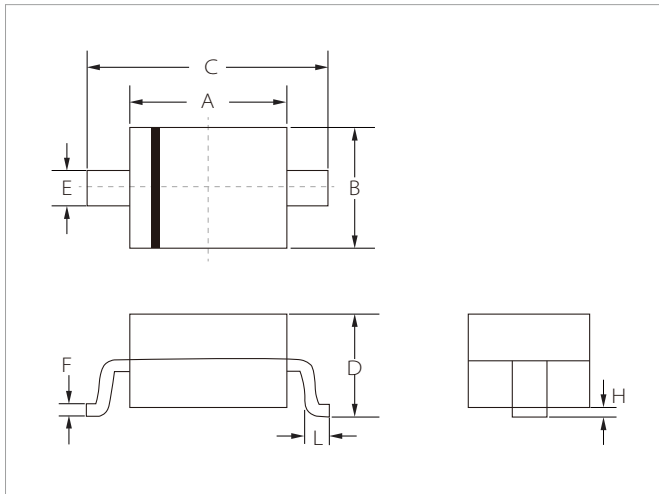
Fig 3. Typical Forward Characteristics

Fig 4. Typical Reverse Characteristics


SOLDERING PARAMETERS

| Reflow Condition | | Lead-free assembly |
|--|----------------------------------|--------------------|
| Pre Heat | Temperature Max ($T_{s(min)}$) | 150°C |
| | Temperature Max ($T_{s(max)}$) | 200°C |
| | Time (min to max) (t_s) | 60 – 180 secs |
| Average ramp up rate (Liquidus Temp (T_L) to peak) | | 3°C/second max |
| $T_{s(max)}$ to T_L - Ramp-up Rate | | 3°C/second max |
| Reflow | Temperature (T_L) (Liquidus) | 217°C |
| | Time (min to max) (t_r) | 60 – 150 seconds |
| Peak Temperature (T_p) | | 260°C |
| Time within 5°C of actual peak Temperature (t_p) | | 20 – 40 seconds |
| Ramp-down Rate | | 6°C/second max |
| Time 25°C to peak Temperature (T_p) | | 8 minutes max. |
| Do not exceed | | 260°C |

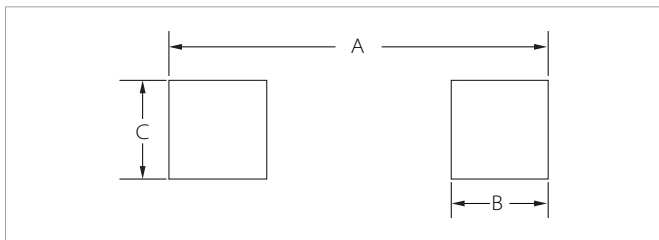


SOD-123 PACKAGE INFORMATION



| Ref. | Millimeters | | Inches | |
|------|-------------|------|--------|-------|
| | Min. | Max. | Min. | Max. |
| A | 2.60 | 2.80 | 0.102 | 0.110 |
| B | 1.50 | 1.70 | 0.059 | 0.067 |
| C | 3.55 | 3.85 | 0.140 | 0.152 |
| D | 1.05 | 1.25 | 0.041 | 0.049 |
| E | 0.45 | 0.65 | 0.018 | 0.026 |
| F | 0.08 | 0.15 | 0.003 | 0.006 |
| H | 0.00 | 0.10 | 0.000 | 0.004 |
| L | 0.25 | 0.45 | 0.010 | 0.018 |

RECOMMENDED PAD LAYOUT DIMENSIONS



| Ref. | Millimeters | | Inches | |
|------|-------------|------|--------|-------|
| | Min. | Max. | Min. | Max. |
| A | 4.00 | 4.30 | 0.157 | 0.169 |
| B | 0.75 | 0.85 | 0.030 | 0.033 |
| C | 0.95 | 1.05 | 0.037 | 0.041 |

ORDERING INFORMATION

| Part Number | Component Package | QTY/Reel | Reel Size |
|-------------|-------------------|----------|-----------|
| SSD116W | SOD-123 | 3000PCS | 7" |

To find your local partner within Semiwell's website : www.semiwell.com.cn

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