

**1. Features**

SOD-123

- Low forward voltage

2. Mechanical Data

- Case:Molded Plastic,SOD-123.
- Epoxy:UL 94V-0 rate flame retardant.
- Terminals:Plated Leads Solderable per MIL-STD-750, Method-2026.
- Marking:MB
- Mounting Position : Any.

**3. Maximum Ratings**

Electrical Characteristics Rating at 25°C ambient temperature unless otherwise specified.

| Characteristic | Symbol | Value | Unit |
|---|-----------|-------------|------|
| Reverse Voltage | V_R | 30 | V |
| Forward Continuous Current | I_F | 200 | mA |
| Peak Forward Surge Current (at $t_p \leq 8.3$ ms) | I_{FSM} | 600 | mA |
| Power Dissipation | P_d | 230 | mW |
| Junction Temperature Range | T_J | -65 to +125 | °C |
| Storage Temperature Range | T_{stg} | -65 to +150 | °C |

4. Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

| Parameters | Symbol | Cindition | Min | TYP | Max | Unit |
|---------------------------|-------------|--|-----|-----|--------------------------------------|------|
| Reverse Breakdown Voltage | $V_{(BR)R}$ | $I_R = 10\mu\text{A}$ | 30 | - | - | V |
| Forward Voltage | V_F | $I_F = 0.1\text{mA}$ $I_F = 1\text{mA}$ $I_F = 10\text{mA}$ $I_F = 30\text{mA}$ $I_F = 100\text{mA}$ | - | - | 0.24 0.32 0.40 0.50 0.80 | V |
| Reverse Current | I_R | $V_R = 25\text{V}$ | - | - | 230 | nA |
| Total Capacitance | C_T | $V_R = 1\text{V}, f = 1\text{MHz}$ | - | - | 10 | pF |



5. Rating And Characteristic Curves

Fig.1 Forward Characteristics

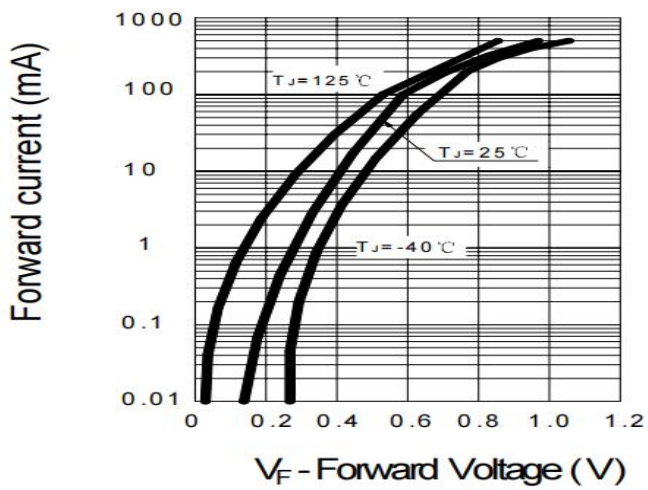


Fig.2 Reverse Characteristics

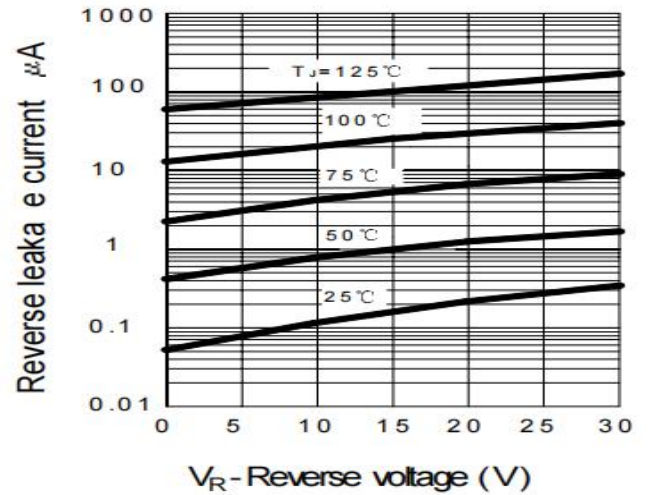


Fig.3 Capacitance Characteristics

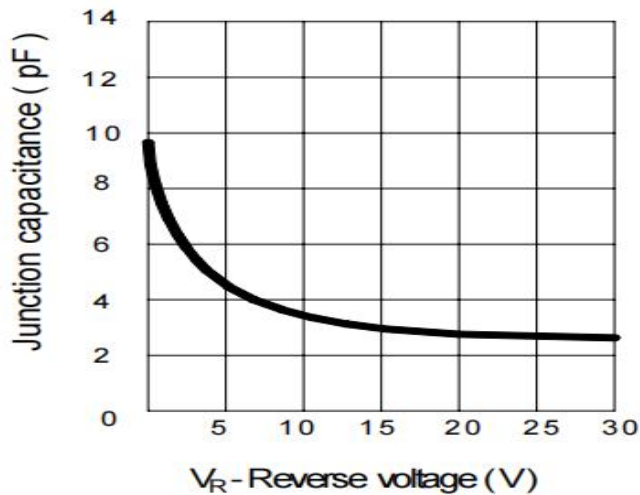
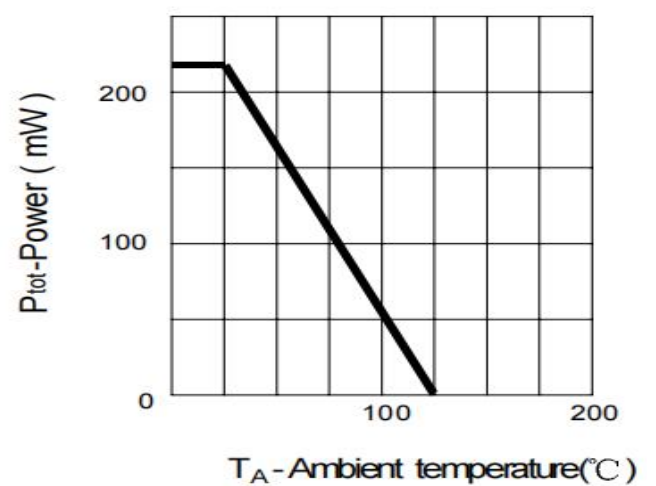
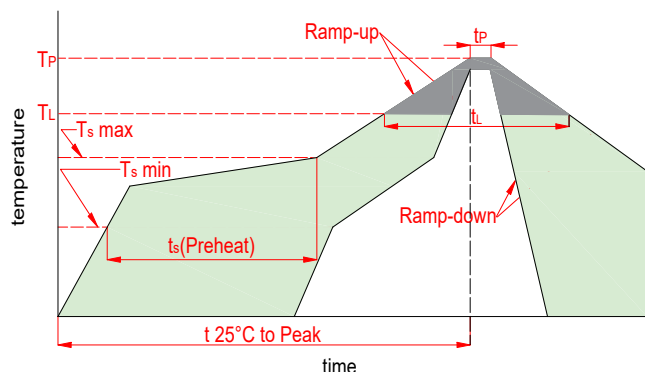


Fig.4 Power Derating Curve



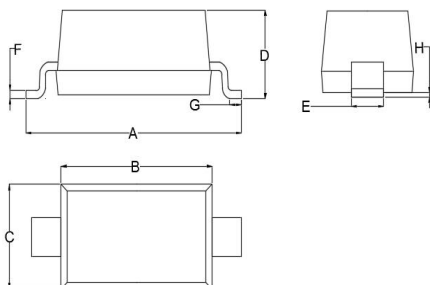


6. Soldering Parameters



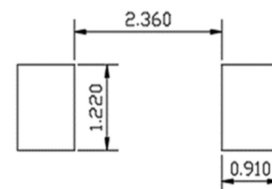
| Reflow Condition | | Lead-free |
|--|---------------------------|-------------------------|
| Pre Heat | Temp. min(T_s (min)) | 150°C |
| | Temp. max(T_s (min)) | 200°C |
| | Time(min to max)(t_s) | 60~120s |
| Aver. ramp up rate(Liquidus Temp.)(T_L)to peak | | 3°C/s max |
| T_s (max) to T_L -Ramp-up Rate | | 3°C/s max |
| Reflow | Temp.(T_L)(Liquidus) | 217°C |
| | Temp.(t_L)(Liquidus) | 60~150s |
| Peak Temp.(T_P) | | 260 ^{+0/-5} °C |
| Time within actual peak Temp.(t_p) | | 30s max |
| Ramp-down Rate | | 6°C/s max |
| Time 25°C to peak Tempe.(T_p) | | 8 minutes max |
| Do not exceed | | 260°C |

7. Dimensions

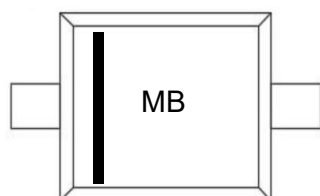


| Dimensions | Inches | | Millimeters | |
|------------|--------|-------|-------------|-------|
| | Min | Max | Min | Max |
| A | 0.136 | 0.152 | 3.450 | 3.850 |
| B | 0.100 | 0.110 | 2.550 | 2.800 |
| C | 0.059 | 0.067 | 1.500 | 1.700 |
| D | 0.035 | 0.049 | 0.900 | 1.250 |
| E | 0.018 | 0.028 | 0.450 | 0.700 |
| F | 0.004 | 0.006 | 0.090 | 0.150 |
| G | 0.008 | 0.020 | 0.200 | 0.500 |
| H | 0.000 | 0.004 | 0.010 | 0.100 |

Mounting PAD Layout



8. Part Marking System



9. Package Information

| Package | Type | Tape Width (mm) | Quantity(pcs) |
|---------|--------|-----------------|---------------|
| SOD-123 | BAS85W | 8 | 3000 |



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