

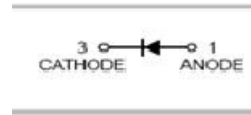
Features

- Fast switching
- Low turn-on voltage
- PN junction guard ring for transient and ESD protection
- Available in lead free version.
- MSL 1

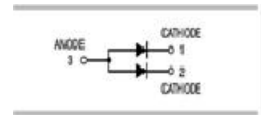
HF

Mechanical Data

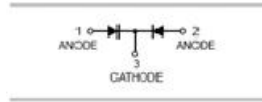
- Case: SOT-23
- Terminals: solderable per MIL-STD-202, Method 208



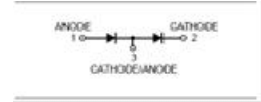
BAT54



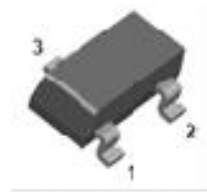
BAT54A



BAT54C



BAT54S



SOT-23

Ordering Information

| Part Number | Package | Shipping | Marking Code |
|-------------|---------|-----------------------|--------------|
| BAT54 | SOT-23 | 3000pcs / Tape & Reel | KL1 |
| BAT54A | SOT-23 | 3000pcs / Tape & Reel | KL2 |
| BAT54C | SOT-23 | 3000pcs / Tape & Reel | KL3 |
| BAT54S | SOT-23 | 3000pcs / Tape & Reel | KL4 |

Maximum Ratings (@T_A=25°C unless otherwise specified)

| Parameter | Symbol | Limits | Unit |
|--------------------------------------|------------------|--------|------|
| Peak Repetitive Peak reverse voltage | V _{RRM} | 30 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Reverse Voltage | V _R | | |
| Forward Continuous Current | I _F | 200 | mA |
| Repetitive Peak Forward Current | I _{FRM} | 300 | mA |
| Forward surge current@tp<1s | I _{FSM} | 600 | mA |

Thermal Characteristics

| Parameter | Symbol | Limits | Unit |
|--|-----------------|-------------|---------------|
| Power Dissipation * | P_D | 250 | mW |
| Thermal resistance junction to ambient air | $R_{\theta JA}$ | 500 | $^{\circ}C/W$ |
| Thermal resistance junction to case | $R_{\theta JC}$ | 360 | $^{\circ}C/W$ |
| Junction temperature | T_J | 125 | $^{\circ}C$ |
| Storage temperature range | T_{STG} | -55 to +150 | $^{\circ}C$ |

Electrical Characteristics (@ $T_A=25^{\circ}C$ unless otherwise specified)

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|------------|--|-----|-----|------|---------|
| Reverse Breakdown Voltage | $V_{(BR)}$ | $I_R=100\mu A$ | 30 | - | - | V |
| Forward voltage *1 | V_F | $I_F=0.1mA$ | - | - | 0.24 | V |
| | | $I_F=1mA$ | - | - | 0.32 | V |
| | | $I_F=10mA$ | - | - | 0.40 | V |
| | | $I_F=30mA$ | - | - | 0.50 | V |
| | | $I_F=100mA$ | - | - | 0.8 | V |
| Reverse current *2 | I_R | $V_R=25V$ | - | - | 2 | μA |
| Capacitance Between Terminals | C_T | $V_R=1V, f=1MHz$ | - | - | 10 | pF |
| Reverse Recovery Time | t_{rr} | $I_F=I_R=10mA$ $I_{rr}=0.1I_R, R_L=100\Omega$ | - | - | 5 | ns |
| *1: pulse test, $t_p \leq 300\mu s$ *2: pulse test, $t_p \leq 5ms$ | | | | | | |

Ratings and Characteristic Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

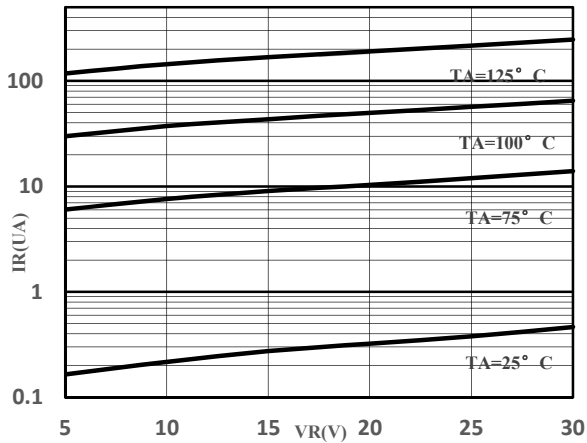


Fig.1- Typical Reverse Characteristic

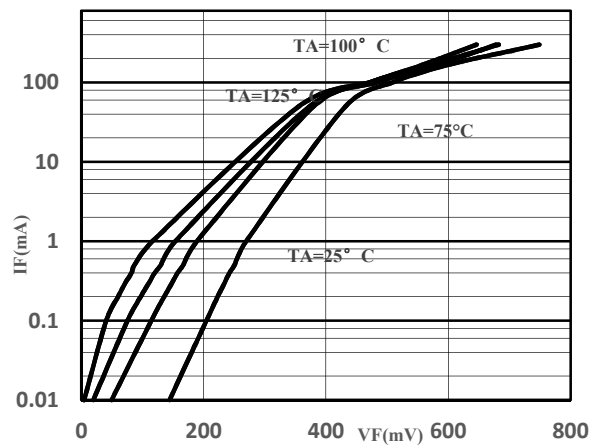


Fig.2- Typical Forward Characteristics

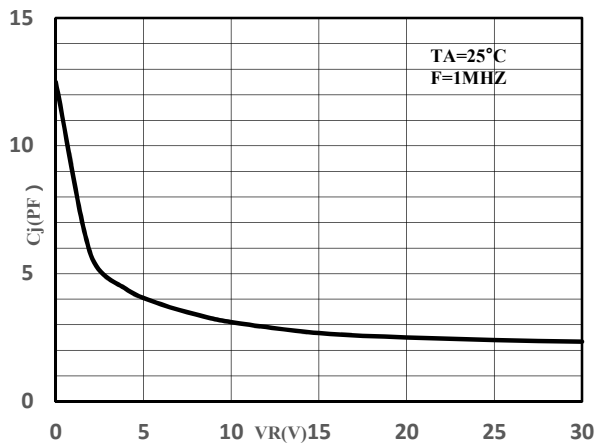


Fig.3-Capacitance Characteristics

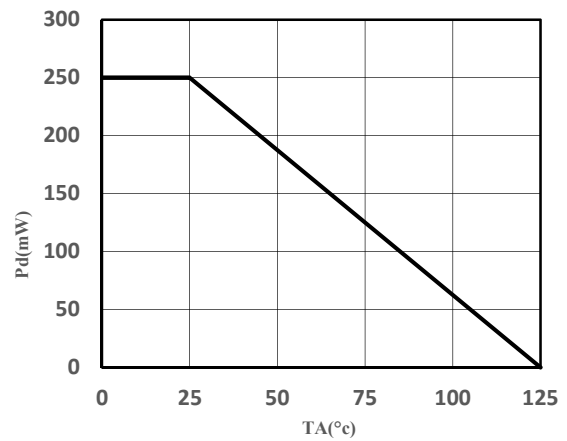
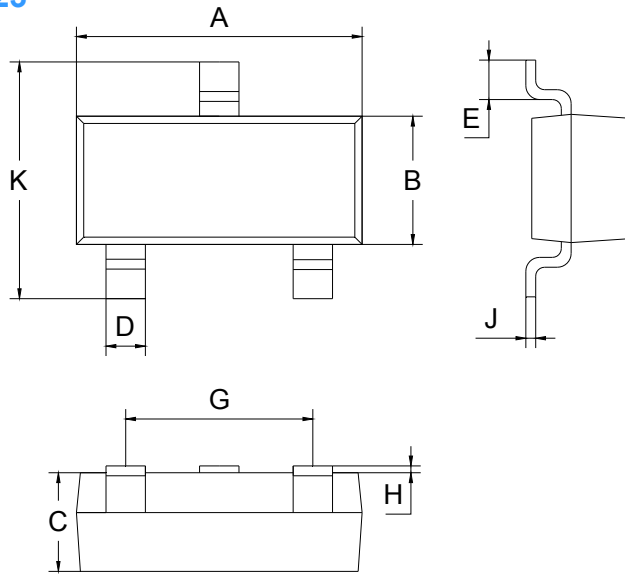


Fig.4-Derating Curve

Package Outline Dimensions (unit: mm)

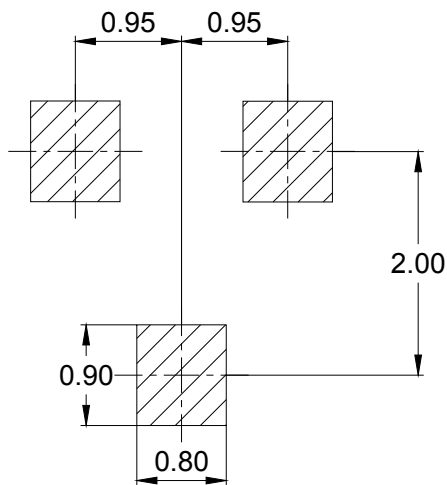
SOT-23



| SOT-23 | | |
|--------|------|------|
| Dim | Min | Max |
| A | 2.70 | 3.10 |
| B | 1.10 | 1.50 |
| C | 0.90 | 1.10 |
| D | 0.30 | 0.50 |
| E | 0.35 | 0.48 |
| G | 1.80 | 2.00 |
| H | 0.02 | 0.10 |
| J | 0.05 | 0.15 |
| K | 2.20 | 2.60 |

Mounting Pad Layout (unit: mm)

SOT-23



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