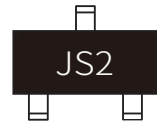


FEATURES

- | Fast Switching Device (TRR <50 nS)
- | Power Dissipation of 225mW
- | High Stability and High Reliability
- | Low Reverse Leakage



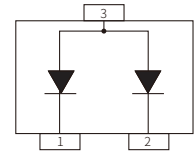
SOT-23



Marking

MECHANICAL DATA

- | SOT-23 Small Outline Plastic Package
- | Epoxy UL: 94V-0
- | Mounting Position: Any



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 Voltage | V_R | 250 | V |
| Peak Repetitive Reverse Voltage | V_{RRM} | 250 | V |
| Power Dissipation | P_D | 225 | mW |
| Forward Continuous Current | I_{FM} | 400 | mA |
| Repetitive Peak Forward Surge Current | I_{FRM} | 625 | mA |
| Non-Repetitive Peak Forward Surge Current @t=8.3ms; $T_A=25^{\circ}\text{C}$ | I_{FSM} | 2.5 | A |
| Operating Junction Temperature | T_J | 150 | $^{\circ}\text{C}$ |
| Storage Temperature Range | T_S | -55 to +150 | $^{\circ}\text{C}$ |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 555 | $^{\circ}\text{C}/\text{W}$ |

Valid provided that electrodes are kept at ambient temperature.

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

| Parameter | Test Condition | Symbol | Min. | Max. | Unit |
|-------------------------|------------------------------------|------------|------|------|---------------|
| Reverse Voltage | $I_R = 100\mu\text{A}$ | $V_{(BR)}$ | 250 | | V |
| Reverse Leakage Current | $V_R = 200\text{V}$ | I_R | | 0.1 | μA |
| Forward Voltage | $I_F = 100\text{mA}$ | V_F | | 1.00 | V |
| | $I_F = 200\text{mA}$ | | | 1.25 | |
| Reverse Recovery Time | $I_F = I_R = 30\text{mA}$ | T_{RR} | | 50 | nS |
| | $R_L = 100\Omega$ | | | | |
| | $I_{RR} = 0.1 \times I_R$ | | | | |
| Capacitance | $V_R = 0\text{V}, f = 1\text{MHz}$ | C_T | | 5 | pF |

CHARACTERISTIC CURVES

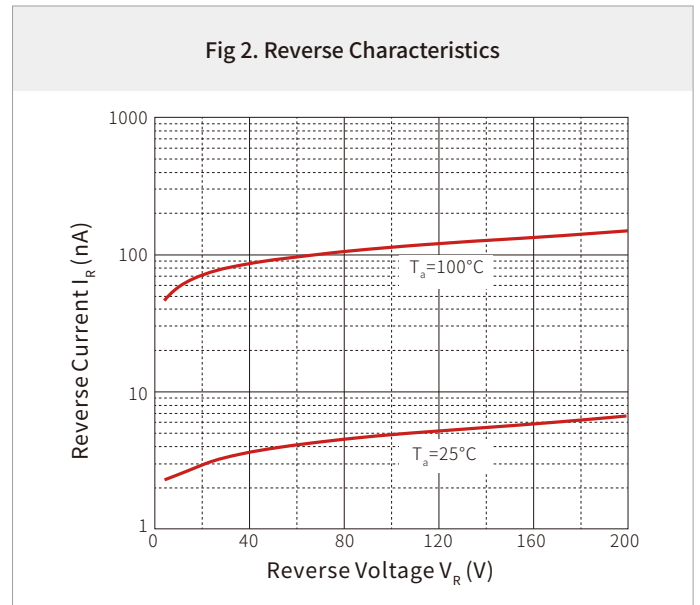
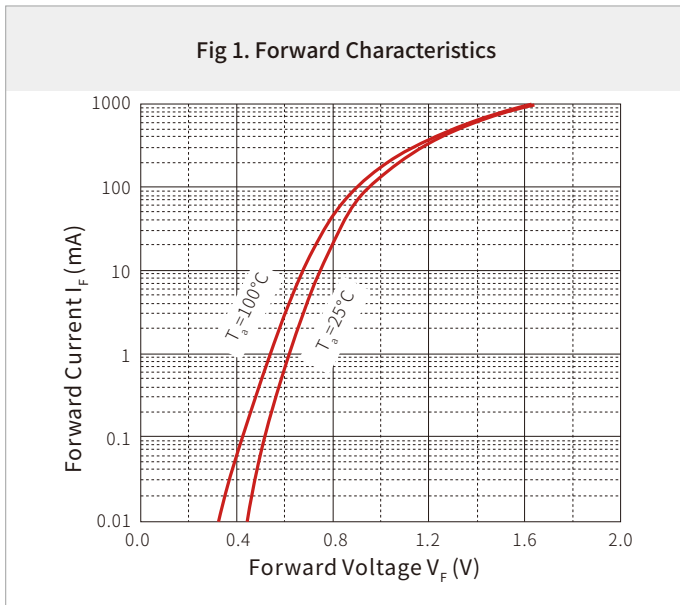
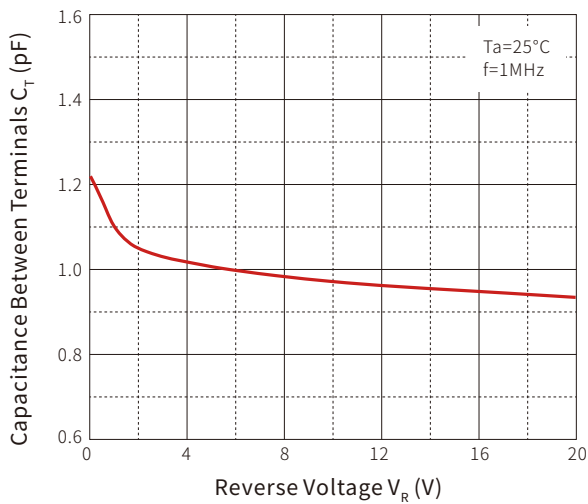
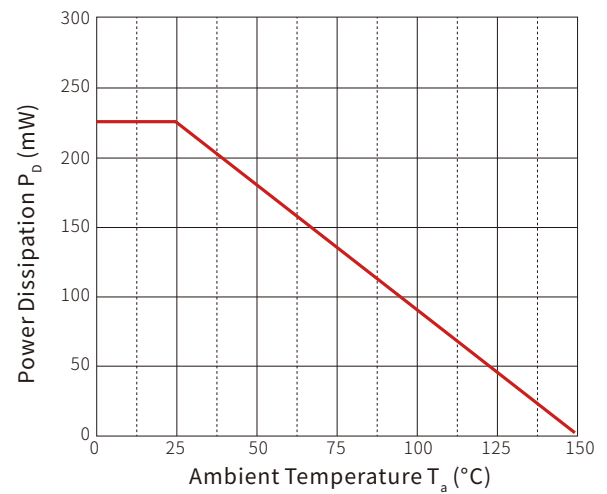
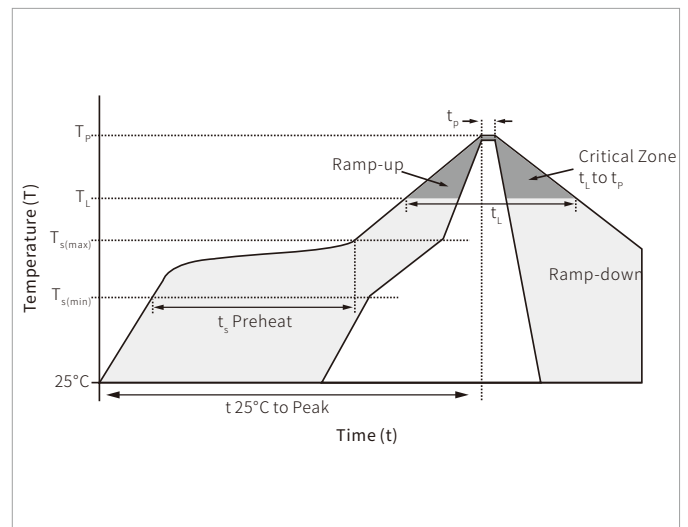


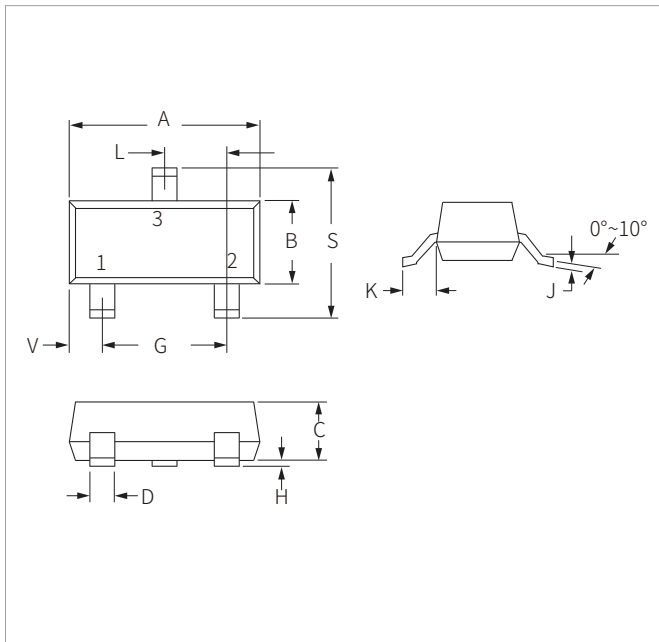
Fig 3. Capacitance Characteristics

Fig 4. Power Derating Curve


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_L) | 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 |

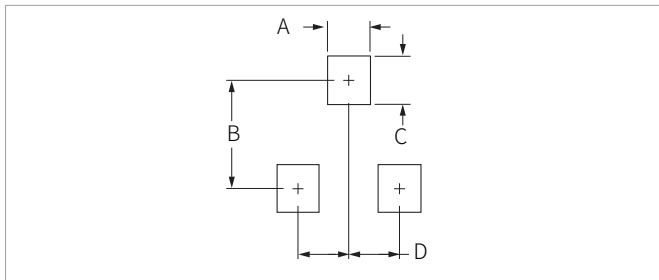


SOT-23 PACKAGE INFORMATION



| Ref. | Millimeters | | Inches | |
|------|-------------|-------|--------|-------|
| | Min. | Max. | Min. | Max. |
| A | 2.80 | 3.05 | 0.110 | 0.120 |
| B | 1.20 | 1.40 | 0.047 | 0.055 |
| C | 0.90 | 1.15 | 0.035 | 0.045 |
| D | 0.37 | 0.50 | 0.015 | 0.020 |
| G | 1.75 | 2.05 | 0.069 | 0.081 |
| H | 0.01 | 0.100 | 0.001 | 0.004 |
| J | 0.085 | 0.180 | 0.003 | 0.007 |
| K | 0.35 | 0.69 | 0.014 | 0.029 |
| L | 0.89 | 1.02 | 0.035 | 0.040 |
| S | 2.10 | 2.65 | 0.083 | 0.104 |
| V | 0.45 | 0.60 | 0.018 | 0.024 |

RECOMMENDED PAD LAYOUT DIMENSIONS



| Ref. | Millimeters | | Inches | |
|------|-------------|------|--------|-------|
| | Min. | Max. | Min. | Max. |
| A | 0.71 | 0.97 | 0.028 | 0.038 |
| B | 1.88 | 2.13 | 0.074 | 0.084 |
| C | 0.71 | 0.97 | 0.028 | 0.038 |
| D | 0.81 | 1.07 | 0.032 | 0.042 |

ORDERING INFORMATION

| Part Number | Component Package | QTY/Reel | Reel Size |
|-------------|-------------------|----------|-----------|
| BAS21A | SOT-23 | 3000PCS | 7" |

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