

FEATURES

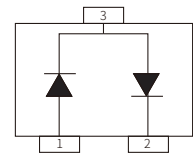
- | SOT-323 Package
- | Epoxy meets UL-94 V-0 flammability rating and halogen free



SOT-323



Marking



Schematic Symbol

APPLICATION

- | Extreme fast switches
- | Automotive

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 |
|---|-----------------|-------------|-----------------------------|
| Non-Repetitive Peak Reverse Voltage | V_{RRM} | 70 | V |
| Maximum DC blocking voltage | V_{DC} | 70 | V |
| Maximum average forward rectified current | I_{FM} | 100 | mA |
| Typical thermal resistance | $R_{\theta JA}$ | 500 | $^{\circ}\text{C}/\text{W}$ |
| Power Dissipation | P_D | 200 | mW |
| Operating junction temperature | T_J | 125 | $^{\circ}\text{C}$ |
| Storage temperature range | T_{STG} | -55 to +150 | $^{\circ}\text{C}$ |

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

| Parameter | Test Condition | Symbol | Min. | Max. | Unit |
|-----------------------------------|---|----------|------|------|------|
| Maximum reverse breakdown voltage | $I_R = 10\mu\text{A}$ | V_R | 70 | | V |
| Maximum reverse current | $V_R = 50\text{V}$ | I_R | | 100 | nA |
| Maximum forward voltage | $I_F = 1\text{mA}$ | V_F | | 410 | mV |
| | $I_F = 15\text{mA}$ | | | 1000 | mV |
| Type junction capacitance | $V_R=0\text{V}, f=1\text{MHz}$ | C_T | | 2 | pF |
| Reverse Recovery Time | $I_F=I_R=10\text{mA}$ $I_{rr}=1 \times I_R, R_L=100\Omega$ | t_{rr} | | 5 | nS |

CHARACTERISTIC CURVES

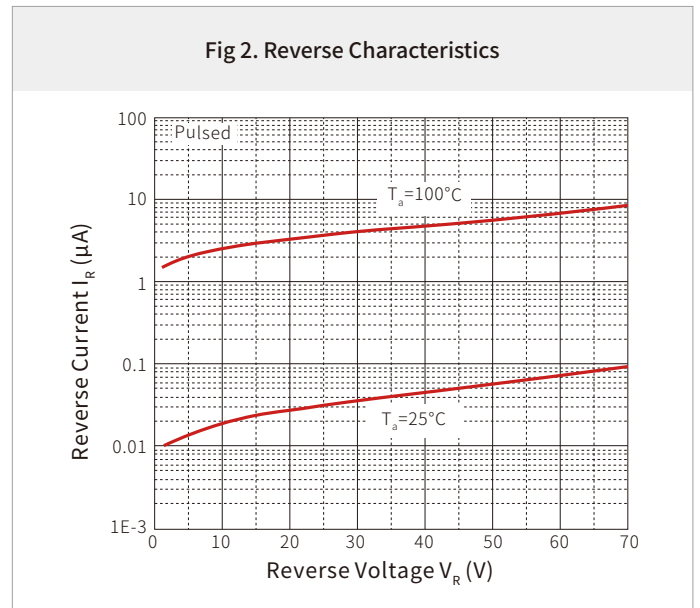
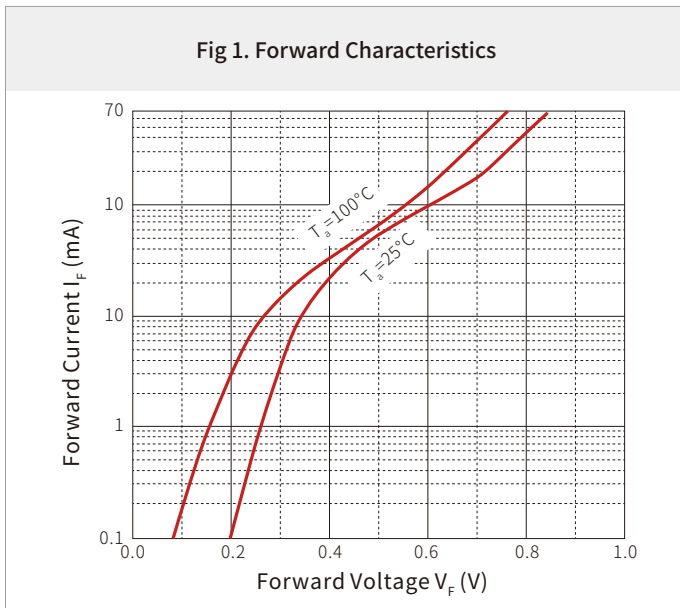
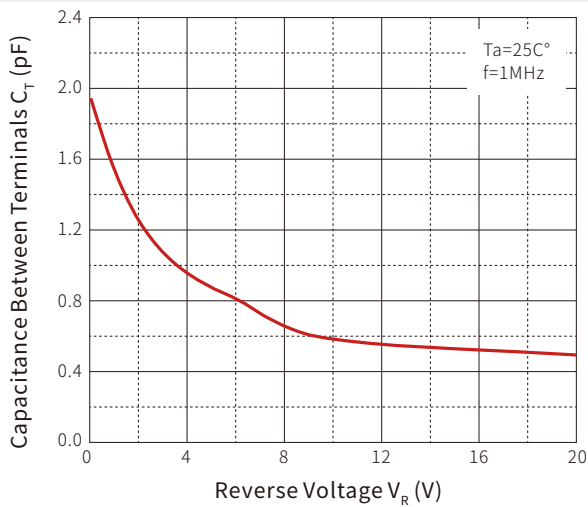
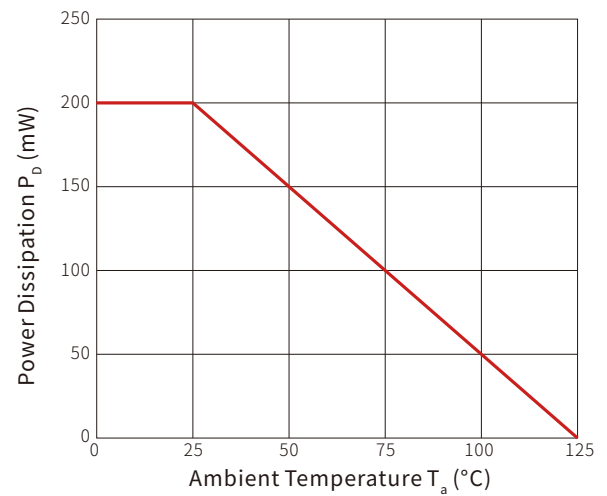
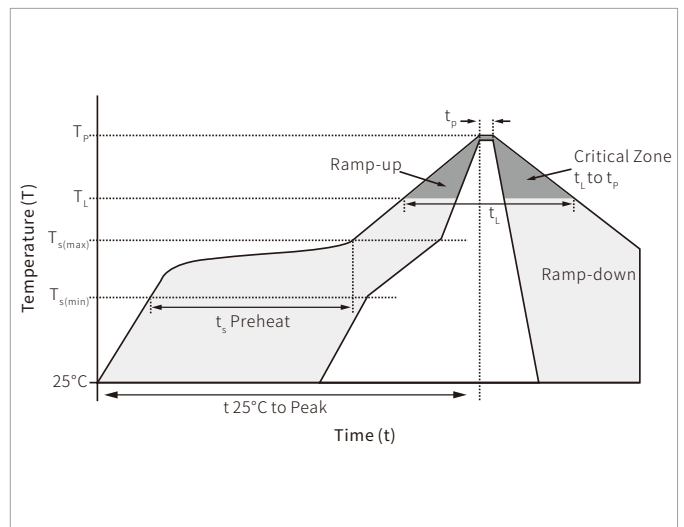


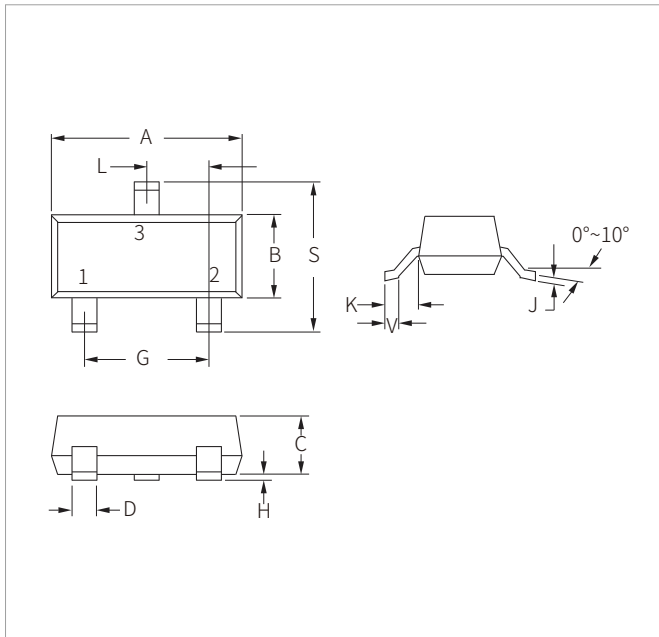
Fig 3. Capacitance Characteristics

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 |

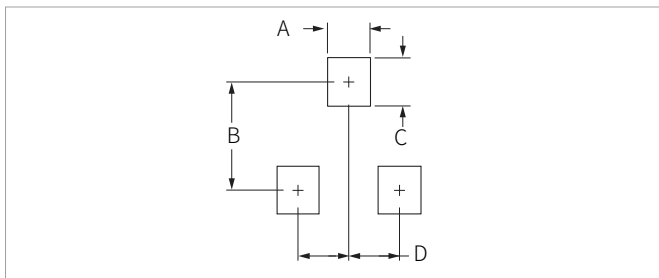


SOT-323 PACKAGE INFORMATION



| Ref. | Millimeters | | Inches | |
|------|-------------|------|----------|-------|
| | Min. | Max. | Min. | Max. |
| A | 2.00 | 2.20 | 0.079 | 0.087 |
| B | 1.15 | 1.35 | 0.045 | 0.053 |
| C | 0.80 | 1.10 | 0.031 | 0.043 |
| D | 0.20 | 0.40 | 0.008 | 0.016 |
| G | 1.20 | 1.40 | 0.047 | 0.055 |
| H | 0.00 | 0.10 | 0.000 | 0.004 |
| J | 0.08 | 0.15 | 0.003 | 0.006 |
| K | 0.525REF | | 0.021REF | |
| L | 0.650TYP | | 0.026TYP | |
| S | 2.15 | 2.45 | 0.085 | 0.096 |
| V | 0.26 | 0.46 | 0.010 | 0.018 |

RECOMMENDED PAD LAYOUT DIMENSIONS



| Ref. | Millimeters | | Inches | |
|------|-------------|--|--------|--|
| | NOR | | NOR | |
| A | 0.50 | | 0.020 | |
| B | 2.20 | | 0.087 | |
| C | 0.80 | | 0.031 | |
| D | 1.30 | | 0.051 | |

ORDERING INFORMATION

| Part Number | Component Package | QTY/Reel | Reel Size |
|-------------|-------------------|----------|-----------|
| BAS70W-04 | SOT-323 | 3000PCS | 7" |

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