

■ Features

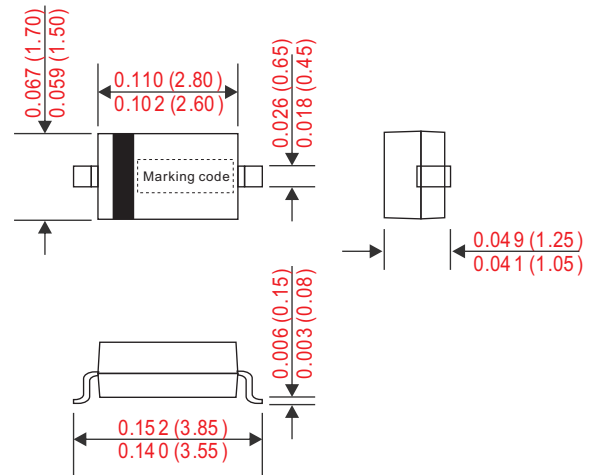
- Low profile surface mounted application in order to optimize board space.
- Low power loss, high efficiency.
- High current capability, low forward voltage drop.
- Ultra high-speed switching.
- Silicon epitaxial planar chip, metal silicon junction.
- Suffix "G" indicates Halogen-free part, ex. B0520WG.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

■ Mechanical data

- Epoxy: UL94-V0 rated flame retardant
- Case : Molded plastic, SOD-123
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Weight : 0.0004 ounce, 0.010 gram

■ Outline

SOD-123



■ Maximum ratings and electrical characteristics

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

| Parameter | Conditions | Symbol | MIN. | TYP. | MAX. | UNIT |
|----------------------------|--|-----------|------|------|------|------|
| Forward rectified current | See Fig.1 | I_O | | | 0.5 | A |
| Forward surge current | 8.3ms single half sine-wave superimposed on rate load (JEDEC method) | I_{FSM} | | | 5.5 | A |
| Reverse current | $V_R = V_{RRM} \quad T_A = 25^\circ\text{C}$ | I_R | | | 0.1 | mA |
| | $V_R = V_{RRM} \quad T_A = 100^\circ\text{C}$ | | | | 20 | |
| Diode junction capacitance | f=1MHz and applied 4V DC reverse voltage | C_J | | 120 | | pF |
| Thermal resistance | Junction to ambient | R_{BJA} | | 88 | | °C/W |
| Storage temperature | | T_{STG} | -55 | | +175 | °C |

| Symbol | Marking code | Max. repetitive peak reverse voltage V_{RRM} (V) | Max. RMS voltage V_{RMS} (V) | Max. DC blocking voltage V_R (V) | Max. forward voltage @0.5A, $T_A = 25^\circ\text{C}$ V_F (V) | Operating temperature T_J (°C) |
|---------|--------------|--|--------------------------------|------------------------------------|--|----------------------------------|
| B0520W | SD, B0 | 20 | 14 | 20 | 0.43 | -55 ~ +150 |
| B0540W | SF, SL | 40 | 28 | 40 | 0.51 | |
| B0560W | SG | 60 | 42 | 60 | 0.60 | |
| B05100W | SH | 100 | 70 | 100 | 0.76 | |

■ Rating and characteristic curves

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

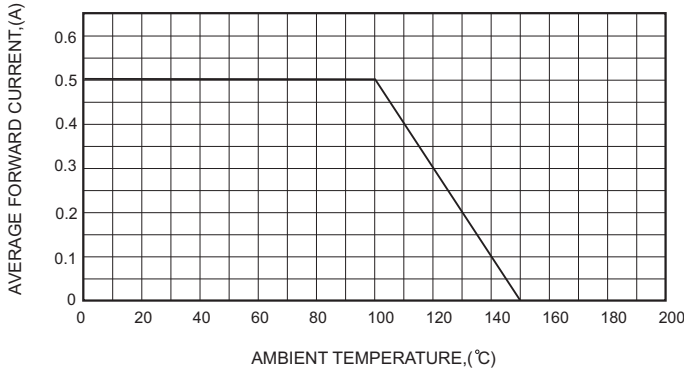


FIG.2-TYPICAL FORWARD CHARACTERISTICS

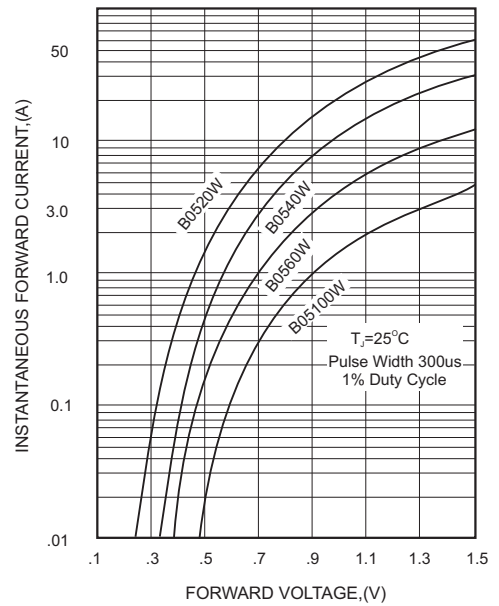


FIG.3-TYPICAL JUNCTION CAPACITANCE

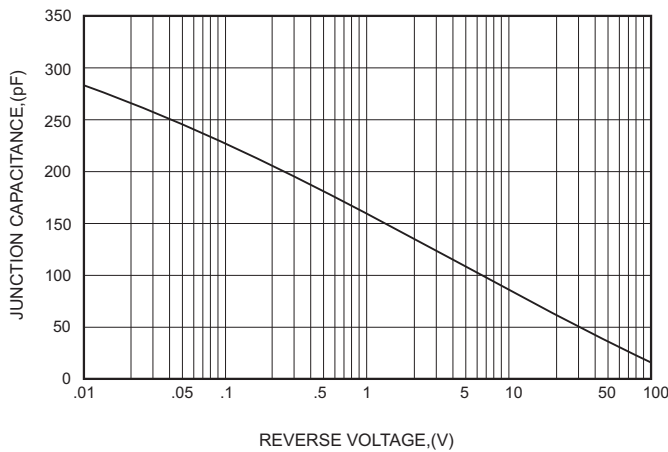
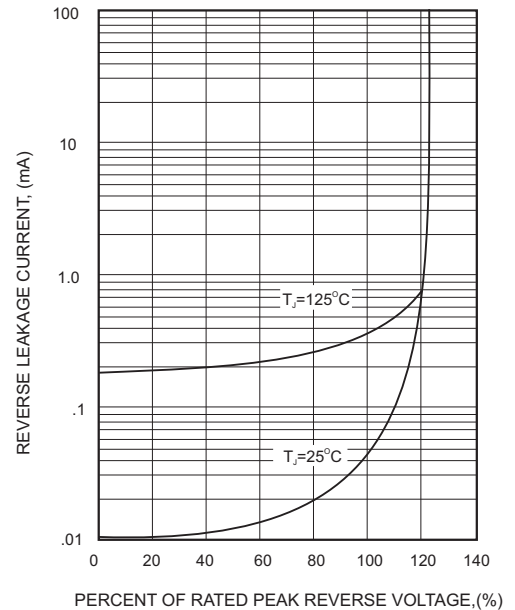
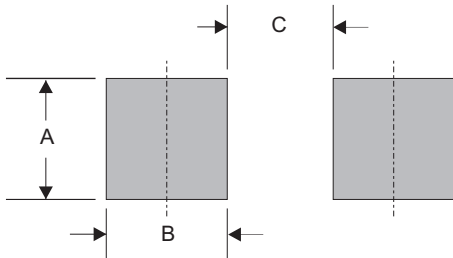


FIG.4 - TYPICAL REVERSE CHARACTERISTICS



■ SOD-123 foot print



| A | B | C |
|--------------|--------------|--------------|
| 0.059 (1.50) | 0.059 (1.50) | 0.094 (2.40) |

Dimensions in inches and (millimeters)

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