

► Features

- V_R 20V/30V/40V
- $I_{F(AV)}$ 500mA
- For use in low voltage, high frequency inverters
- Free wheeling, and polanty protection applications

► Applications

The device is a single rectifier offering low VF and excellent high temperature stability.

► Mechanical Data

- Case: SOD-123
- Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Cathode line denotes the cathode end

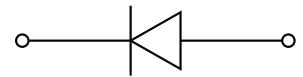
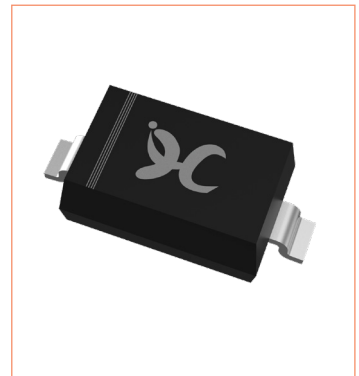
► Maximum Ratings (Ta=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | B0520W | B0530W | B0540W |
|--|------------------|-------|-----------|--------|--------|
| Maximum repetitive peak reverse voltage | V_{RRM} | V | 20 | 30 | 40 |
| Maximum RMS Voltage | V_{RMS} | V | 14 | 21 | 28 |
| Maximum DC blocking Voltage | V_{DC} | V | 20 | 30 | 40 |
| Maximum average forward rectified current | $I_{F(AV)}$ | mA | 500 | | |
| Non-repetitive Peak Forward Surge Current @ t=8.3ms Half-sine wave | I_{FSM} | A | 5.5 | | |
| Power Dissipation | P_d | mW | 500 | | |
| Storage temperature | T_{stg} | °C | -50 ~+150 | | |
| Junction temperature | T_j | °C | -50 ~+125 | | |
| Typical Thermal Resistance | $R_{\theta J-A}$ | °C /W | 200 | | |

► Electrical Characteristics (Ta=25°C Unless otherwise specified)

| PARAMETER | TEST CONDITIONS | SYMBOL | UNIT | B0520W | B0530W | B0540W |
|---------------------------------------|------------------|----------|------|--------|--------|--------|
| Maximum instantaneous forward voltage | $I_F=0.1A$ | V_{F1} | V | 0.330 | 0.375 | — |
| | $I_F=0.5A$ | V_{F2} | | 0.385 | 0.430 | 0.510 |
| | $I_F=1.0A$ | V_{F3} | | — | — | 0.620 |
| Maximum reverse current | $V_R=10V$ | I_R | mA | 0.075 | — | — |
| | $V_R=15V$ | | | — | 0.02 | — |
| | $V_R=20V$ | | | 0.25 | — | 0.01 |
| | $V_R=30V$ | | | — | 0.13 | — |
| | $V_R=40V$ | | | — | — | 0.02 |
| Capacitance between terminals | $V_R=0V, f=1MHz$ | C_T | pF | — | — | 170 |

SOD-123



► **Ratings And Characteristics Curves** ($T_a=25^\circ\text{C}$ Unless otherwise specified)

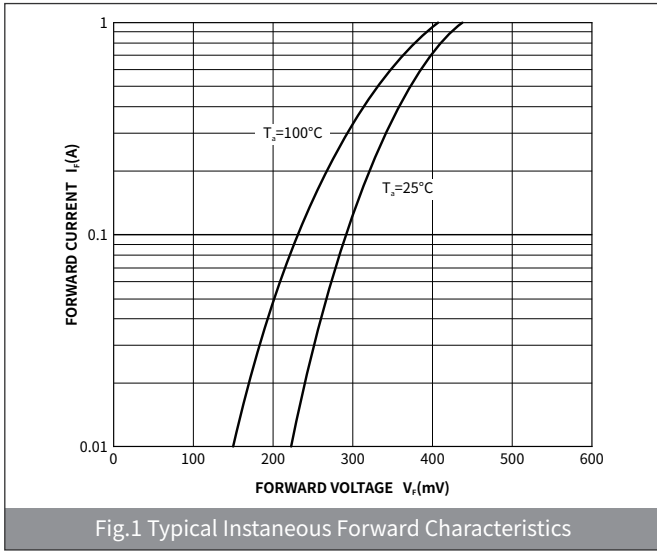


Fig.1 Typical Instantaneous Forward Characteristics

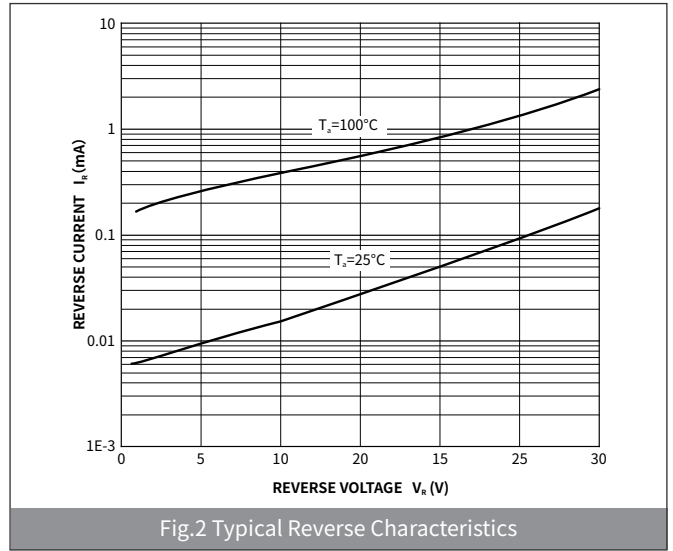


Fig.2 Typical Reverse Characteristics

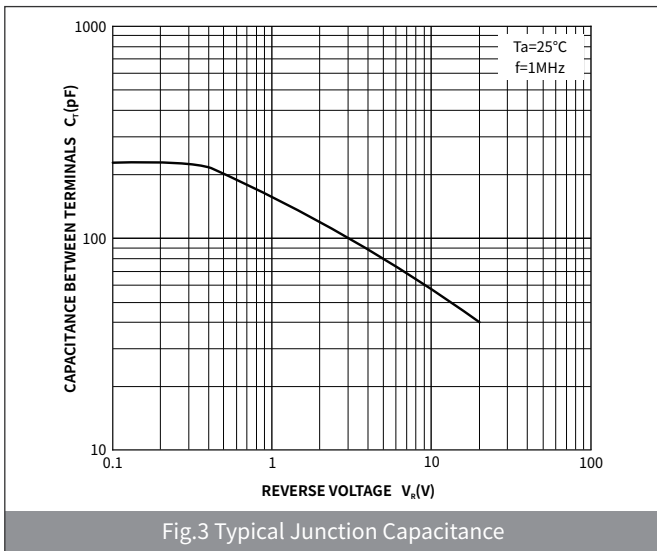


Fig.3 Typical Junction Capacitance

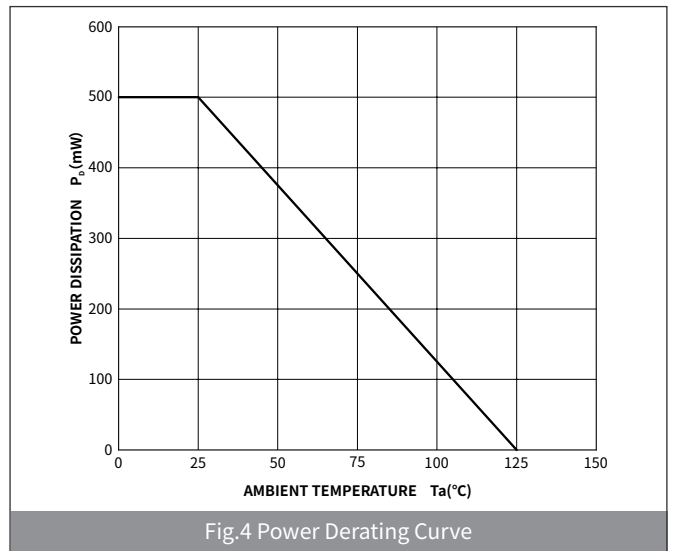


Fig.4 Power Derating Curve

Ordering Information

| PACKAGE | PACKAGE CODE | UNIT WEIGHT(g) | REEL(pcs) | BOX(pcs) | CARTON(pcs) | DELIVERY MODE |
|---------|--------------|----------------|-----------|----------|-------------|---------------|
| SOD-123 | R1 | 0.012 | 3000 | 30000 | 120000 | 7" |

Package Outline Dimensions (SOD-123)

| Symbol | Dimensions | | | |
|----------|-------------|------|--------|-------|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| A | 3.55 | 3.85 | 0.140 | 0.152 |
| B | 2.55 | 2.85 | 0.100 | 0.112 |
| C | 1.40 | 1.80 | 0.055 | 0.071 |
| D | 0.95 | 1.35 | 0.140 | 0.152 |
| E | 0.51 | 0.71 | 0.037 | 0.053 |
| F | - | 0.15 | - | 0.006 |
| G | 0.15 | 0.45 | 0.006 | 0.008 |
| H | 0.08 | 0.25 | 0.003 | 0.010 |
| θ | - | 8° | - | 8° |

Suggested Pad Layout

| Symbol | Dimensions | | | |
|--------|-------------|------|--------|-------|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| J | 0.91 | - | 0.036 | - |
| K | - | 2.36 | - | 0.092 |
| M | 1.22 | - | 0.048 | - |

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