

### ► 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

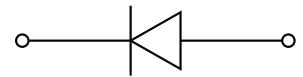
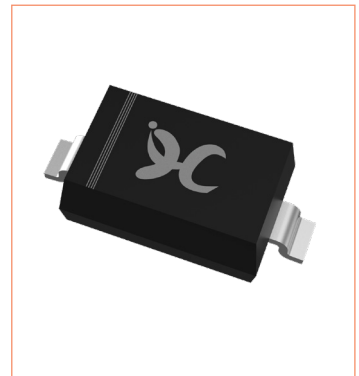
### ► Maximum Ratings (Ta=25°C Unless otherwise specified)

| 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       |        |        |

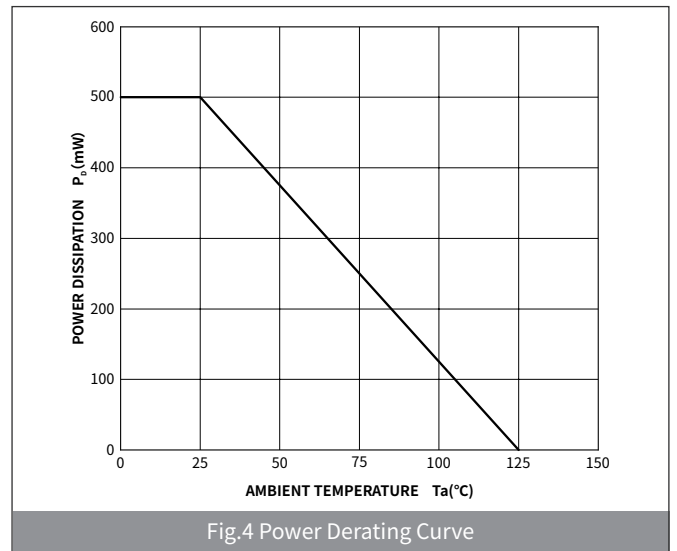
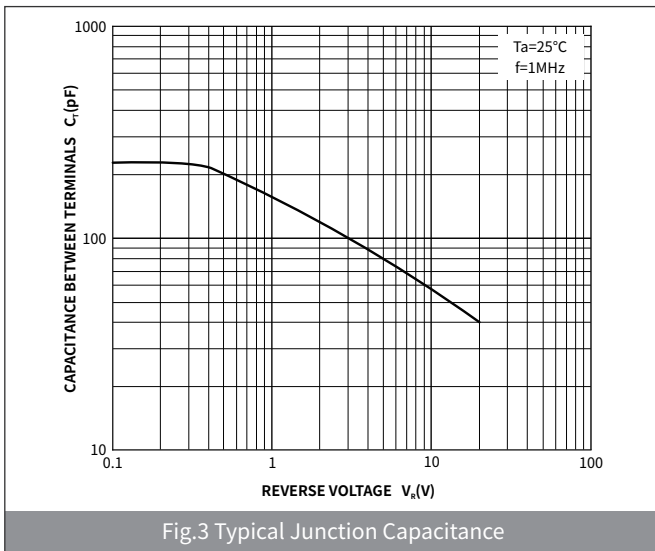
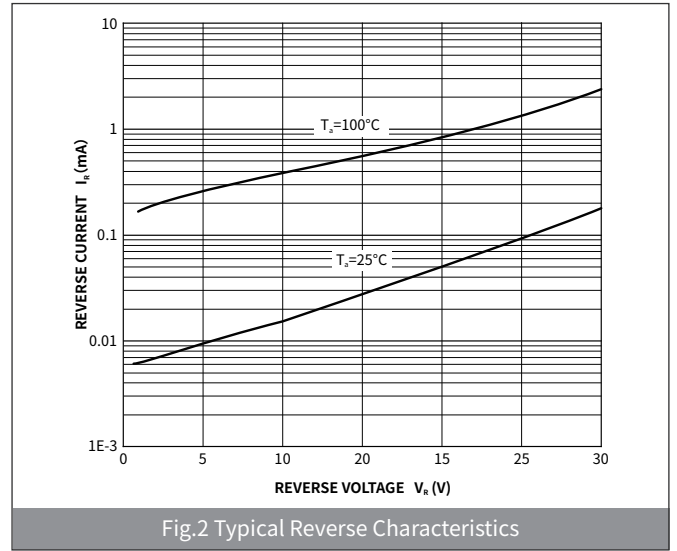
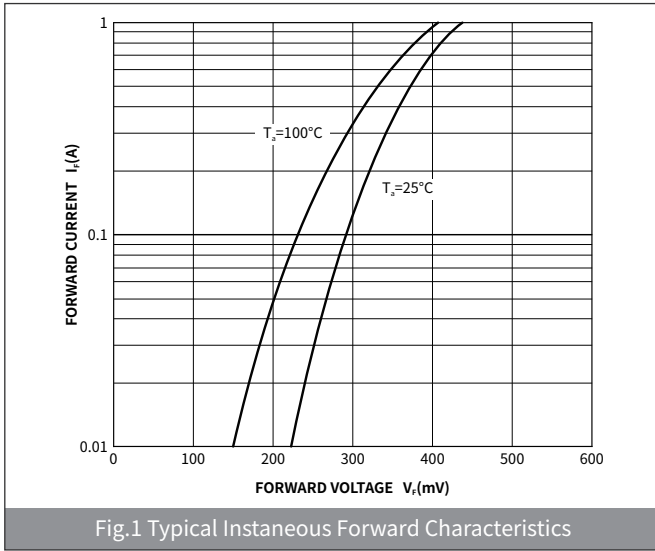
### ► Electrical Characteristics (Ta=25°C Unless otherwise specified)

| 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)



### 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 |
| $\theta$ | -           | 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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