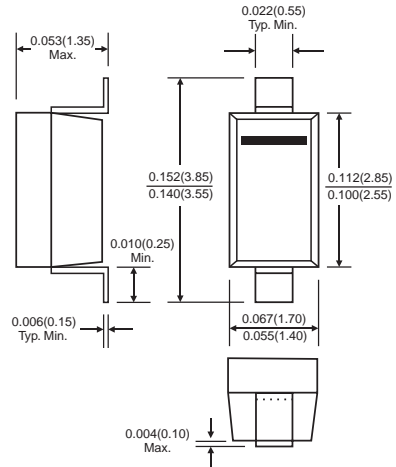


# B0520LW, B0530W, B0540W

## 0.5AMP. Surface Mount Schottky Barrier Rectifiers

### SOD-123



Dimensions in inches and (millimeters)

## Features

- ✧ Low power loss, high efficiency.
- ✧ Guard ring construction for transient protection
- ✧ High conductance

## Mechanical Data

- ✧ Case: SOD-123, plastic
- ✧ Marking: Date Code and Type Code  
Type Code: B0520LW Marking: SD  
B0530W Marking: SE  
B0540W Marking: SF
- ✧ Weight: 0.01 grams (approx.)

## Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

### Maximum Ratings

| Type Number   | Symbol          | B0520LW      | B0530W | B0540W | Units        |
|---|-----------------|--------------|--------|--------|--------------|
| Peak Repetitive Reverse Voltage   | $V_{RRM}$       |              |        |        |              |
| Working Peak Reverse Voltage  | $V_{RWM}$       | 20           | 30     | 40     | V            |
| DC Blocking Voltage   | $V_R$           |              |        |        |              |
| RMS Reverse Voltage   | $V_R(RMS)$      | 14           | 21     | 28     | V            |
| Average Rectified Current @ $T_L=100^\circ C$   | $I_o$           | 0.5          |        |        | A            |
| Non-repetitive Peak Forward Surge Current<br>8.3ms Single half Sine-Wave Superimposed on<br>Rated Load (JEDEC Method) | $I_{FSM}$       | 5.5          |        |        | A            |
| Power Dissipation (Note 1)  | $P_d$           | 410          |        |        | mW           |
| Thermal Resistance Junction to Ambient Air (Note 1)   | $R_{\theta JA}$ | 244          |        |        | $^\circ C/W$ |
| Operating and Storage Temperature Range   | $T_J, T_{STG}$  | -65 to + 125 |        |        | $^\circ C$   |
| Voltage Rate of Chang   | $dv / dt$       | 1000         |        |        | V/uS         |

### Electrical Characteristics

| Type Number   | Symbol     | B0520LW                                     | B0530W                                  | B0540W                                     | Units                            |
|---|------------|---|---|--|----------------------------------|
| Minimum Reverse Breakdown Voltage<br>IR=250uA<br>IR=200uA<br>IR=20uA  | $V_{(BR)}$ | 20<br>-<br>-                                | -<br>30<br>-                            | -<br>-<br>40                               | V                                |
| Maximum Reverse Leakage Current (Note 2)<br>VR=10V Tj=25 °C<br>VR=15V Tj=25 °C<br>VR=20V Tj=25 °C<br>VR=30V Tj=25 °C<br>VR=40V Tj=25 °C<br>VR=10V Tj=100 °C<br>VR=20V Tj=100 °C<br>VR=40V Tj=100 °C | $I_R$      | 75<br>-<br>250<br>-<br>-<br>5.0<br>8.0<br>- | -<br>20<br>-<br>130<br>-<br>-<br>-<br>- | -<br>-<br>10<br>-<br>20<br>-<br>5.0<br>13  | uA<br><br><br><br><br><br><br>mA |
| Maximum Forward Voltage Drop (Note 2)<br>Tj=25 °C IF=0.1A<br>Tj=25 °C IF=0.5A<br>Tj=25 °C IF=1.0A<br>Tj=100 °C IF=0.1A<br>Tj=100 °C IF=0.5A<br>Tj=100 °C IF=1.0A                                    | $V_F$      | 0.300<br>0.385<br>-<br>0.220<br>0.330<br>-  | 0.375<br>0.430<br>-<br>-<br>-<br>-      | -<br>0.510<br>0.620<br>-<br>0.460<br>0.610 | V                                |
| Junction Capacitance<br>VR=0, f=1.0MHz  | $C_j$      | 170   |   |  | pF                               |

- Notes:
1. Valid Provided that Leads are Kept at Ambient Temperature.
  2. Pulse Test: Pulse width = 300uS, Duty cycle  $\leq 2\%$ .
  3.  $dv / dt$  Measured at Rated VR.



# B0520LW, B0530W, B0540W

0.5AMP. Surface Mount Schottky Barrier Rectifiers

## RATINGS AND CHARACTERISTIC CURVES (B0520LW, B0530W, B0540W)

FIG.1- FORWARD CURRENT DERATING CURVE

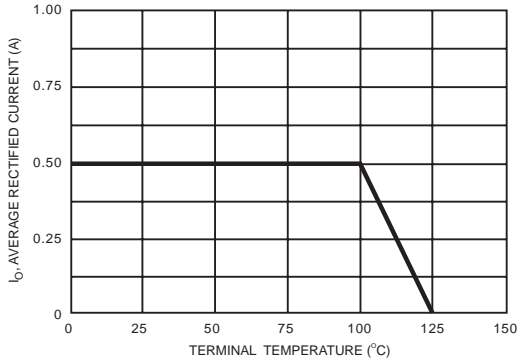


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

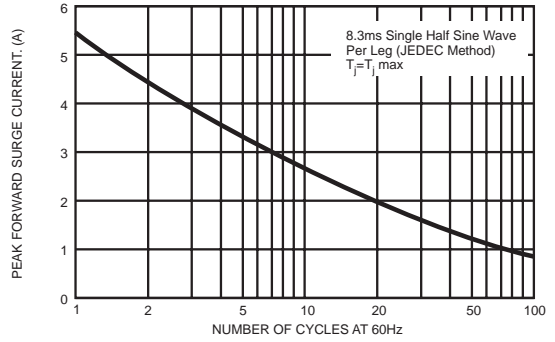


FIG.3- TYPICAL FORWARD CHARACTERISTICS

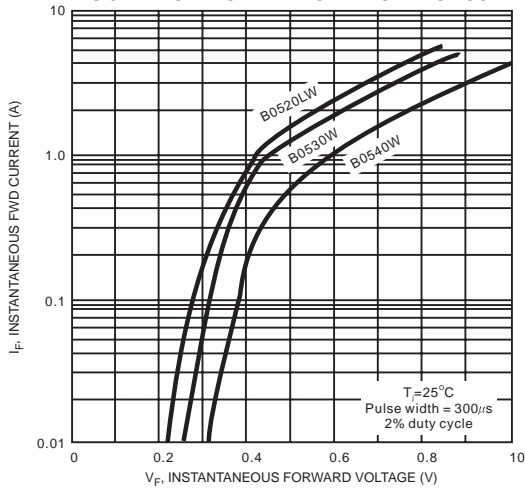


FIG.4- TYPICAL REVERSE CHARACTERISTICS

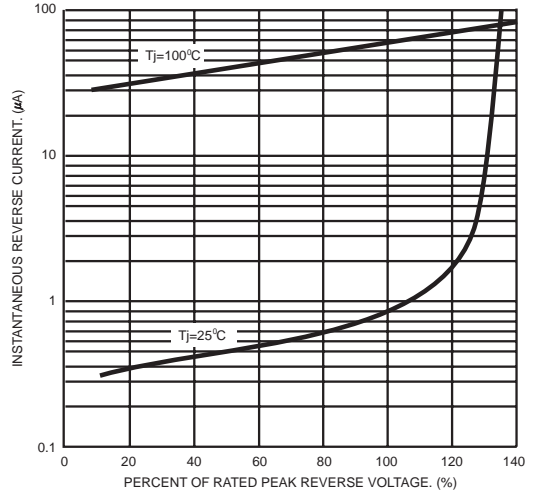


FIG.5- TYP. JUNCTION CAPACITANCE VS REVERSE VOLTAGE

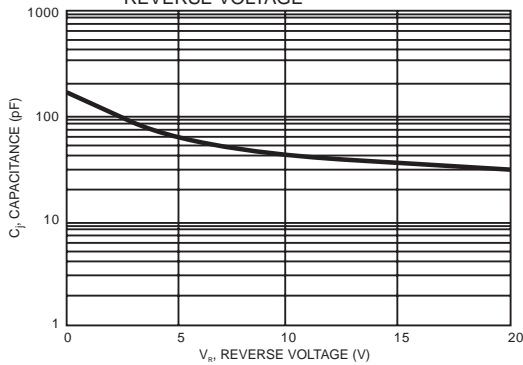


FIG.6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS

