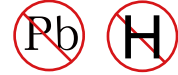




YEA SHIN TECHNOLOGY CO., LTD

B0520W THRU B0540W

SURFACE MOUNT SCHOTTKY BARRIER



VOLTAGE - 20 to 40V CURRENT - 0.5A

FEATURES

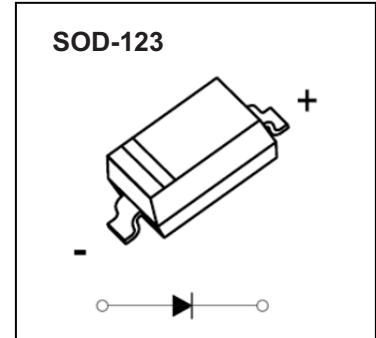
- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- High Conductance
- Also Available in Lead Free Version

MARKING:

B0520W : SD

B0530W : SE

B0540W : SF



Maximum Ratings @Ta=25°C

| Parameter | Symbol | B0520W | B0530W | B0540W | Unit |
|--|-----------------|-------------|--------|--------|------|
| Marking | | SD | SE | SF | |
| Peak Repetitive Reverse Voltage | V_{RRM} | 20 | 30 | 40 | V |
| Working Peak Reverse Voltage | V_{RWM} | | | | |
| DC Blocking Voltage | V_{DC} | | | | |
| RMS Reverse Voltage | V_{RMS} | 14 | 21 | 28 | V |
| Average Rectified Output Current | I_O | 0.5 | | | A |
| Non-repetitive Peak Forward Surge Current @t=8.3ms | I_{FSM} | 5.5 | | | A |
| Power Dissipation | P_D | 500 | | | mW |
| Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | 200 | | | °C/W |
| Junction Temperature | T_J | 125 | | | °C |
| Storage Temperature | T_{STG} | -55 to +150 | | | °C |

DEVICE CHARACTERISTICS

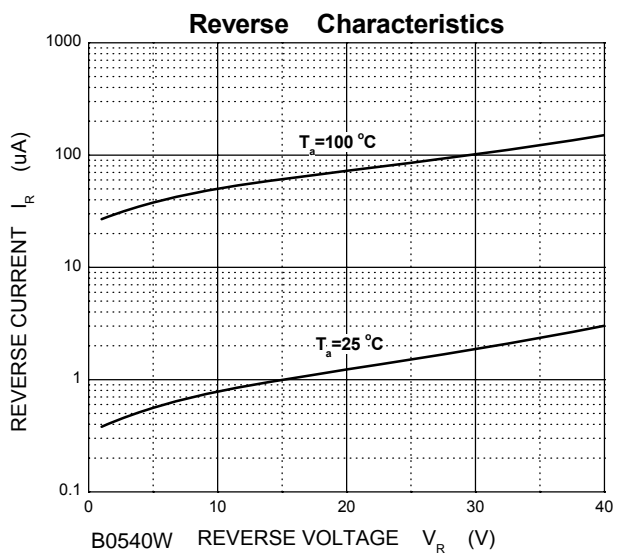
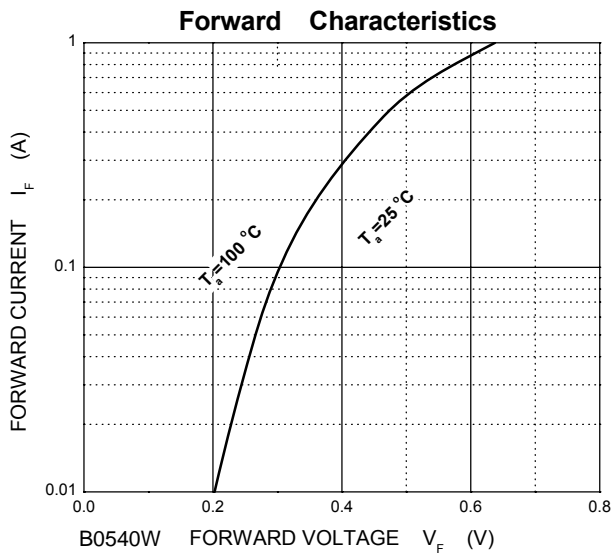
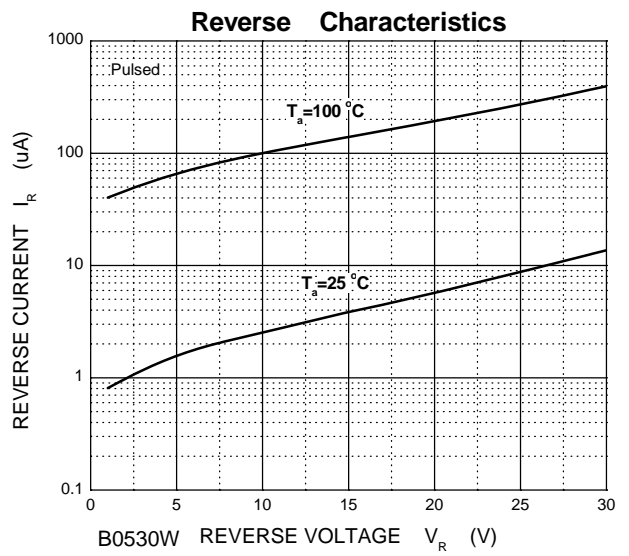
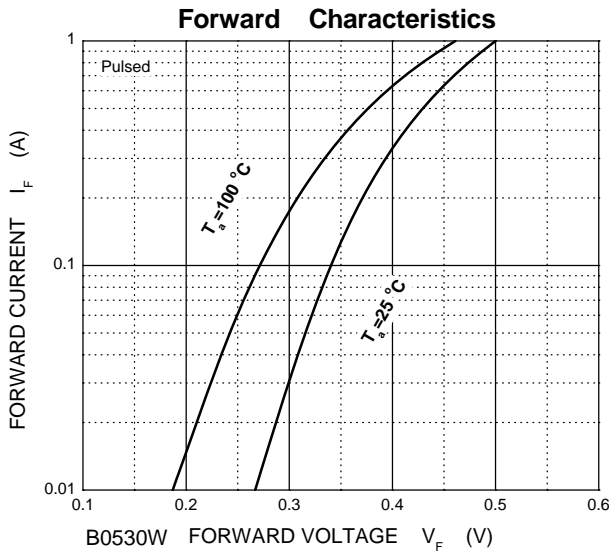
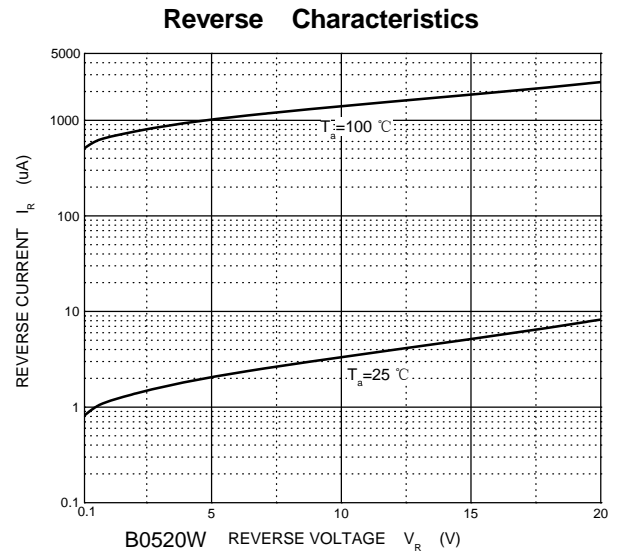
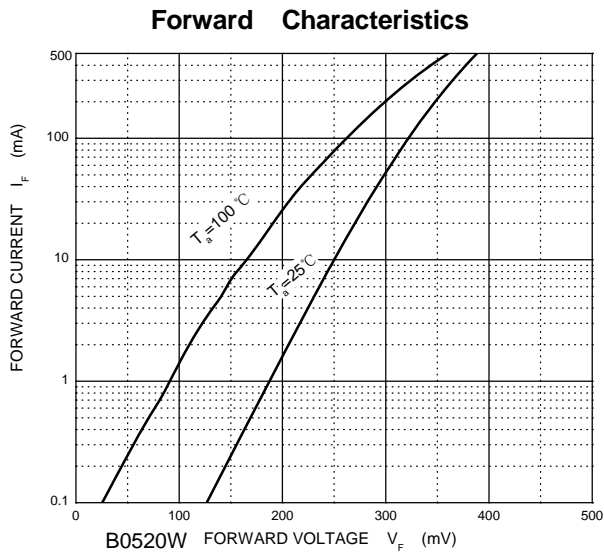
B0520W THRU B0540W

Electrical Characteristics ($T_A=25\text{ }^\circ\text{C}$, unless otherwise noted)

| Parameter | Symbol | Test Conditions | | Min. | Typ. | Max. | Unit |
|-------------------------------|------------|------------------------|------------------|------|------|--------------|---------------|
| Reverse Breakdown Voltage | $V_{(BR)}$ | $I_R=250\mu\text{A}$ | B0520W | 20 | | | V |
| | | | B0530W | 30 | | | |
| | | | B0540W | 40 | | | |
| Reverse Current | I_R | $V_R=10\text{V}$ | B0520W | | | 75 | μA |
| | | $V_R=15\text{V}$ | B0530W | | | 20 | |
| | | $V_R=20\text{V}$ | B0540W | | | 10 | |
| | | $V_R=20\text{V}$ | B0520W | | | 250 | μA |
| | | $V_R=30\text{V}$ | B0530W | | | 130 | |
| | | $V_R=40\text{V}$ | B0540W | | | 20 | |
| Forward Voltage | V_F | $I_F=0.1\text{A}$ | B0520W | | | 0.33 | V |
| | | | B0530W | | | 0.375 | |
| | | $I_F=0.5\text{A}$ | B0520W | | | 0.39 | V |
| | | | B0530W B0540W | | | 0.43 0.51 | |
| Capacitance Between Terminals | C_T | $V_R=1, f=1\text{MHz}$ | | | 170 | | pF |

DEVICE CHARACTERISTICS

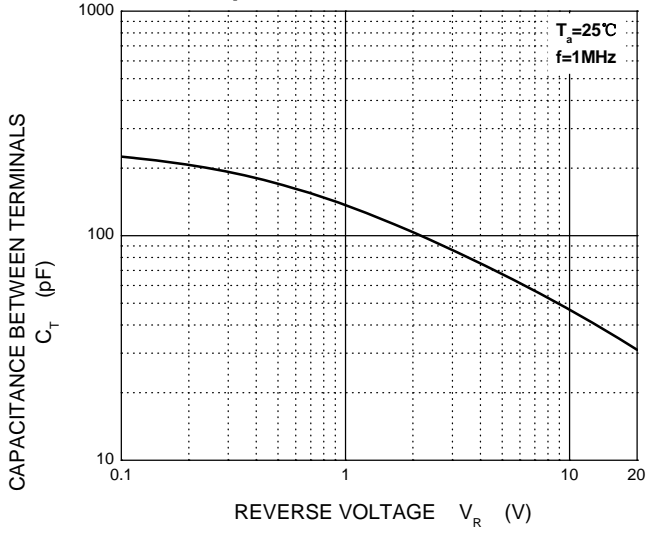
B0520W THRU B0540W



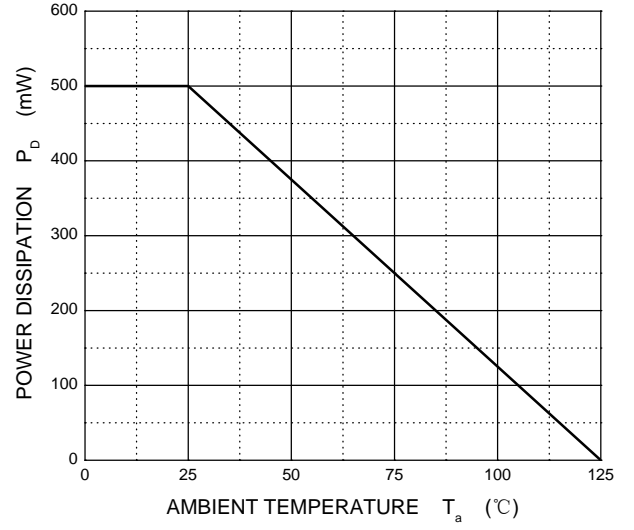
DEVICE CHARACTERISTICS

B0520W THRU B0540W

Capacitance Characteristics



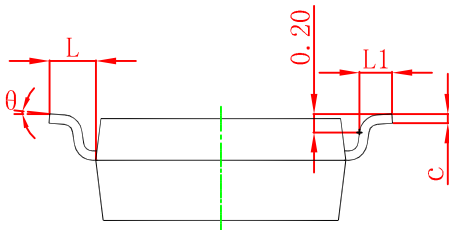
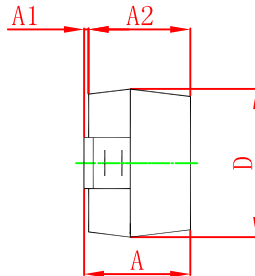
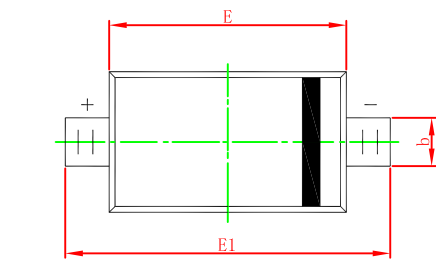
Power Derating Curve



PACKAGE OUTLINE & DIMENSIONS

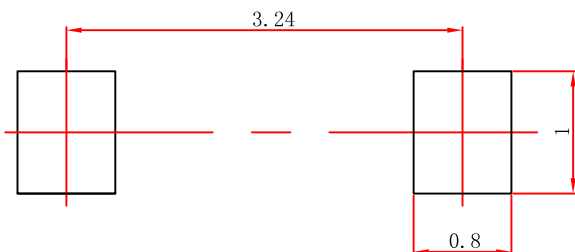
B0520W THRU B0540W

SOD-123 Package Outline Dimensions



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 1.050 | 1.250 | 0.041 | 0.049 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 1.050 | 1.150 | 0.041 | 0.045 |
| b | 0.450 | 0.650 | 0.018 | 0.026 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 1.500 | 1.700 | 0.059 | 0.067 |
| E | 2.600 | 2.800 | 0.102 | 0.110 |
| E1 | 3.550 | 3.850 | 0.140 | 0.152 |
| L | 0.500 REF | | 0.020 REF | |
| L1 | 0.250 | 0.450 | 0.010 | 0.018 |
| θ | 0° | 8° | 0° | 8° |

SOD-123 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.