# SPECIFICATION SHEET

## SMD ZENER DIODES CASE SOD-123 BZT52B L SERIES

| | | |
|---|---|---|
| SPECIFICATION SHEET NO. | S1229– BZT52B12L0S001 | |
| ORIGINAL MFG/PART NO. | LGE Diodes/BZT52B12-L | |
| NEXTGEN PART CODE | BZT52B12L0S001 | Indicate This Code For RFQ /Order |
| DATE | Dec. 29, 2025 | |
| REVISION | A4 | Updated With Most Recent Data |
| DESCRIPTION AND MAIN PARAMETRICS | SMD Zener Diodes, Case SOD-123, BZT52B L series,<br>BZT52B12 Type, 2 Pads<br>Nominal Zener Voltage (Vz): 12V, Power Dissipation: 500 mW<br>Junction Temp. Range 150°C<br>Package in Tape/Reel, 3000pcs/Reel<br>RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863) and Halogen Free (HF) | |
| CUSTOMER | | |
| CUSTOMER PART NUMBER | | |
| CROSS REF. PART NUMBER | | |
| MEMO | | |

| VENDOR APPROVE |
|---|
| Issued/Checked/Approved<br>NextGen Components, Inc. Mandy Xu<br>NextGen Components, Inc. Ruby Zhang<br>NextGen Components, Inc. Jack Zhang |
| Effective Date: Dec. 29, 2025 |

| CUSTOMER APPROVE |
|---|
| |
| Date: |

## MAIN FEATURE

*Image shown is a representation only. Exact specifications should be obtained from the product dimension.*

- SOD-123 Plastic-Encapsulate Diodes
- 500mw Power Dissipation on Ceramic PCB.
- Vz Tolerance selection of ±2% (B series).
- Wide Zener Reverse Voltage Range 2.4V To 75V.
- Small Plastic Package Suitable For Surface Mounted Design.
- Cross Competitors Parts and More.
- RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863) and Halogen Free (HF)

## APPLICATION

- For SMD Application

## ELECTRICAL CHARACTERISTICS

- See Page 5 ~ Page 7 For Different Part Code .
- All Products Parameters are Subject To NextGen Components' Final Confirmation.

## HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate NextGen Part Code BZT52B12L0S001 For RFQ and Order.

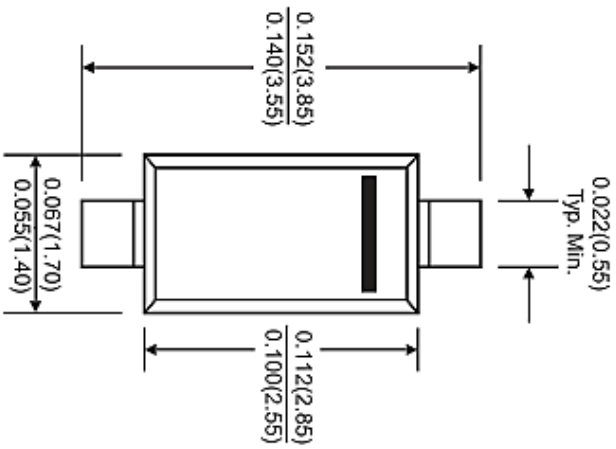
## PART CODE GUIDE

**RFQ**
Request For Quotation

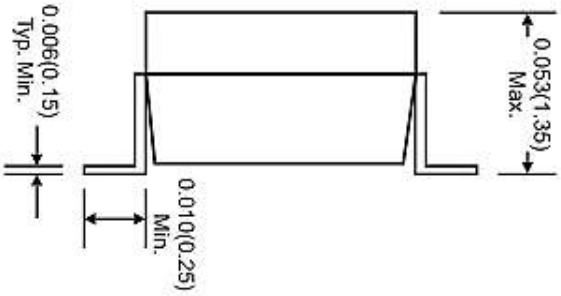
| CODE | NAME | KEY SPECIFICATION OPTION |
|---|---|---|
| BZT52B | Product Series Code | SMD Zener Diodes, 2 Pads, Case SOD-123,<br>BZT52B L series, |
| 12 | Parameters Code | 12: Nominal Zener Voltage 12V |
| L0S001 | Internal Control Code | Letter or Digits (A~Z, a~z or 0~9) |
| XX | Special/Custom Parameters Code | Letter or Digits (A~Z, a~z or 0~9) for Special Parametric;<br>Blank: N/A |

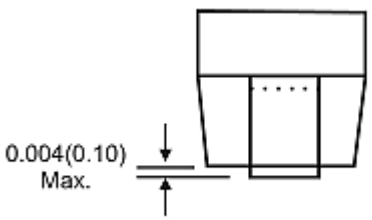
DIMENSION - - Unit: Inch (mm), Case SOD-123 Outline

Top View

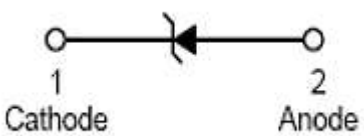



Side View




Equivalent Circuit

## MECHANICAL CHARACTERISTICS

| CASE | TERMINALS | POLARITY | MOUNTING POSITION | MARKING |
|---|---|---|---|---|
| JEDEC SOD-123 Molded Plastic Body | Solderable per MIL-STD-750, Method 2026 | Polarity Symbol Marking On Body | Any | See Page 6 ~ Page 7 |

## MAX. RATING - $T_A$=25°C unless otherwise specified, For Reference Only

| PARAMETER | SYMBOLS | VALUE | UNITS |
|---|---|---|---|
| Forward Voltage @ $I_F$ =10mA | $V_F$ | 0.9 | V |
| Power Dissipation | $P_D$ | 500 | mW |
| Thermal Resistance From Junction To Ambient Air | $R_{\theta JA}$ | 305 | °C/W |
| Junction Temperature Range | $T_J$ | 150 | °C |
| Storage Temperature Range | $T_{stg}$ | -65 ~ +150 | °C |

Notes

1. The Zener voltage ($V_Z$) is tested under pulse condition of 10ms..
2. The device numbers listed have a standard tolerance on the nominal Zener voltage of ±2%.
3. The Zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having a rms value equal to 10% of the dc Zener current ($I_{ZT}$ or $I_{ZK}$) is superimposed to $I_{ZT}$ or $I_{ZK}$.
4. These ratings are limiting values above which the serviceability of the diodes may be impaired.

ELECTRICAL CHARACTERISTICS - Ta=25°C unless otherwise specified

| Part Code | Zener Voltage Range | | | | Max. Zener Impedance | | | Max. Reverse Current | | Marking |
|---|---|---|---|---|---|---|---|---|---|---|
| | Vz @ Izt | | | Izt | Zzt @ Izt | Zzk @ Izk | Izk | Ir | @ Vr | |
| | Nom (V) | Min (V) | Max (V) | mA | Ω | | mA | μA | V | |
| BZT52B2V4LS001 | 2.4 | 2.35 | 2.45 | 5 | 94 | 564 | 1 | 45 | 1 | 2WX |
| BZT52B2V7LS001 | 2.7 | 2.65 | 2.75 | 5 | 94 | 564 | 1 | 18 | 1 | 2W1 |
| BZT52B3V0LS001 | 3.0 | 2.94 | 3.06 | 5 | 89 | 564 | 1 | 9 | 1 | 2W2 |
| BZT52B3V3LS001 | 3.3 | 3.23 | 3.37 | 5 | 89 | 564 | 1 | 4.5 | 1 | 2W3 |
| BZT52B3V6LS001 | 3.6 | 3.53 | 3.67 | 5 | 84 | 564 | 1 | 4.5 | 1 | 2W4 |
| BZT52B3V9LS001 | 3.9 | 3.82 | 3.98 | 5 | 84 | 564 | 1 | 2.7 | 1 | 2W5 |
| BZT52B4V3LS001 | 4.3 | 4.21 | 4.39 | 5 | 84 | 564 | 1 | 2.7 | 1 | 2W6 |
| BZT52B4V7LS001 | 4.7 | 4.61 | 4.79 | 5 | 75 | 564 | 1 | 2.7 | 2 | 2W7 |
| BZT52B5V1LS001 | 5.1 | 5.00 | 5.20 | 5 | 56 | 470 | 1 | 1.8 | 2 | 2W8 |
| BZT52B5V6LS001 | 5.6 | 5.49 | 5.71 | 5 | 37 | 451 | 1 | 0.9 | 2 | 2W9 |
| BZT52B6V2LS001 | 6.2 | 6.08 | 6.32 | 5 | 9 | 376 | 1 | 2.7 | 4 | 2WA |
| BZT52B6V8LS001 | 6.8 | 6.66 | 6.94 | 5 | 14 | 141 | 1 | 1.8 | 4 | 2WB |
| BZT52B7V5LS001 | 7.5 | 7.35 | 7.65 | 5 | 14 | 75 | 1 | 0.9 | 5 | 2WC |
| BZT52B8V2LS001 | 8.2 | 8.04 | 8.36 | 5 | 14 | 75 | 1 | 0.63 | 5 | 2WD |
| BZT52B9V1LS001 | 9.1 | 8.92 | 9.28 | 5 | 14 | 94 | 1 | 0.45 | 6 | 2WE |
| BZT52B10L0S001 | 10 | 9.80 | 10.20 | 5 | 18 | 141 | 1 | 0.18 | 7 | 2WF |
| BZT52B11L0S001 | 11 | 10.78 | 11.22 | 5 | 18 | 141 | 1 | 0.09 | 8 | 2WG |
| BZT52B12L0S001 | 12 | 11.76 | 12.24 | 5 | 23 | 141 | 1 | 0.09 | 8 | 2WH |
| BZT52B13L0S001 | 13 | 12.74 | 13.26 | 5 | 28 | 160 | 1 | 0.09 | 8 | 2WI |
| BZT52B15L0S001 | 15 | 14.70 | 15.30 | 5 | 28 | 188 | 1 | 0.045 | 10.5 | 2WJ |

ELECTRICAL CHARACTERISTICS - Ta=25°C unless otherwise specified

| Part Code | Zener Voltage Range | | | | Max. Zener Impedance | | | Max. Reverse Current | | Marking |
|---|---|---|---|---|---|---|---|---|---|---|
| | Vz @ Izt | | | Izt | Zzt @ Izt | Zzk @ Izk | Izk | Ir | @ Vr | |
| | Nom (V) | Min (V) | Max (V) | mA | Ω | | mA | µA | V | |
| BZT52B16L0S001 | 16 | 15.68 | 16.32 | 5 | 37 | 188 | 1 | 0.045 | 11.2 | 2WK |
| BZT52B18L0S001 | 18 | 17.64 | 18.36 | 5 | 42 | 212 | 1 | 0.045 | 12.6 | 2WL |
| BZT52B20L0S001 | 20 | 19.60 | 20.40 | 5 | 51 | 212 | 1 | 0.045 | 14.0 | 2WM |
| BZT52B22L0S001 | 22 | 21.56 | 22.44 | 5 | 51 | 235 | 1 | 0.045 | 15.4 | 2WN |
| BZT52B24L0S001 | 24 | 23.52 | 24.48 | 5 | 65 | 235 | 1 | 0.045 | 16.8 | 2WO |
| BZT52B27L0S001 | 27 | 26.46 | 27.54 | 2 | 75 | 282 | 0.5 | 0.045 | 18.9 | 2WP |
| BZT52B30L0S001 | 30 | 29.40 | 30.60 | 2 | 75 | 282 | 0.5 | 0.045 | 21.0 | 2WQ |
| BZT52B33L0S001 | 33 | 32.34 | 33.66 | 2 | 75 | 306 | 0.5 | 0.045 | 23.0 | 2WR |
| BZT52B36L0S001 | 36 | 35.28 | 36.72 | 2 | 84 | 329 | 0.5 | 0.045 | 25.2 | 2WS |
| BZT52B39L0S001 | 39 | 38.22 | 39.78 | 2 | 122 | 329 | 0.5 | 0.045 | 27.3 | 2WT |
| BZT52B43L0S001 | 43 | 42.14 | 43.86 | 2 | 141 | 353 | 0.5 | 0.045 | 30.1 | 2WU |
| BZT52B47L0S001 | 47 | 46.06 | 47.94 | 2 | 160 | 375 | 0.5 | 0.045 | 35.0 | 2WV |
| BZT52B51L0S001 | 51 | 50.00 | 52.00 | 2 | 180 | 400 | 0.5 | 0.045 | 35.7 | 2WW |
| BZT52B56L0S001 | 56 | 54.90 | 57.10 | 2 | 200 | 425 | 0.5 | 0.045 | 39.2 | X2 |
| BZT52B62L0S001 | 62 | 60.80 | 63.20 | 2 | 215 | 450 | 0.5 | 0.045 | 43.4 | X3 |
| BZT52B68L0S001 | 68 | 66.64 | 69.36 | 2 | 240 | 475 | 0.5 | 0.045 | 47.6 | X4 |
| BZT52B75L0S001 | 75 | 73.50 | 76.50 | 2 | 255 | 500 | 0.5 | 0.045 | 52.5 | X5 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

TYPICAL CHARACTERISTICS CURVES- For Reference Only, Ta=25℃ Unless Otherwise Specified.

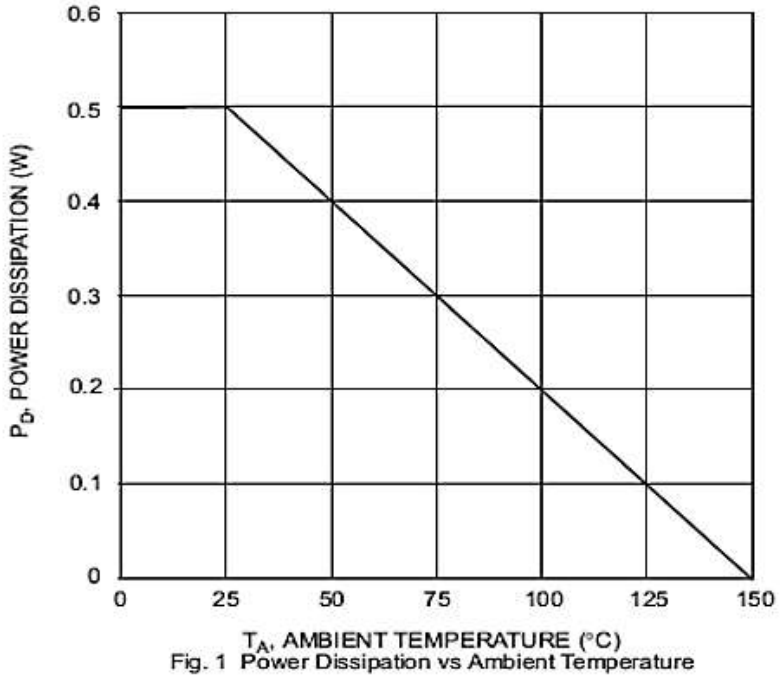


Fig. 1 Power Dissipation vs Ambient Temperature

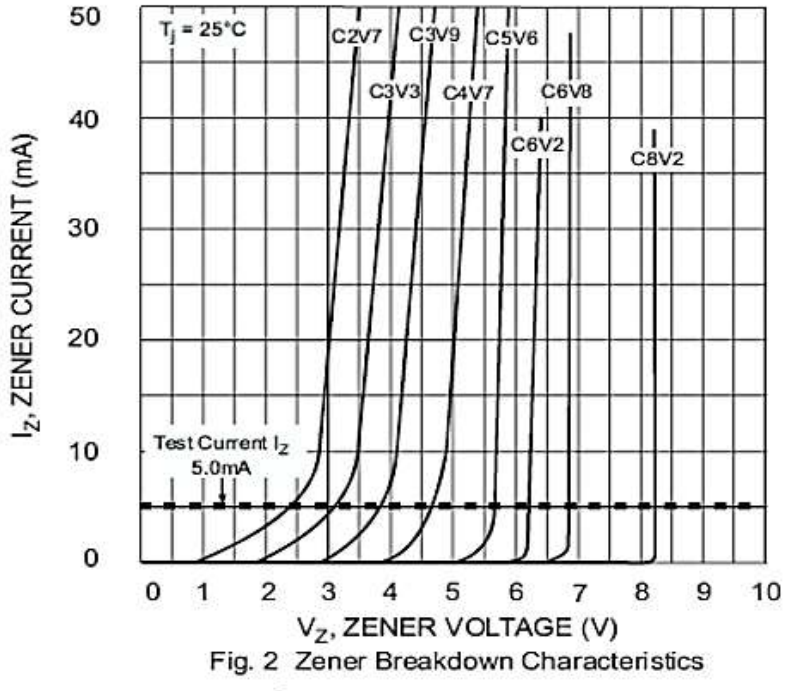


Fig. 2 Zener Breakdown Characteristics

TYPICAL CHARACTERISTICS CURVES- For Reference Only, Ta=25℃ Unless Otherwise Specified.

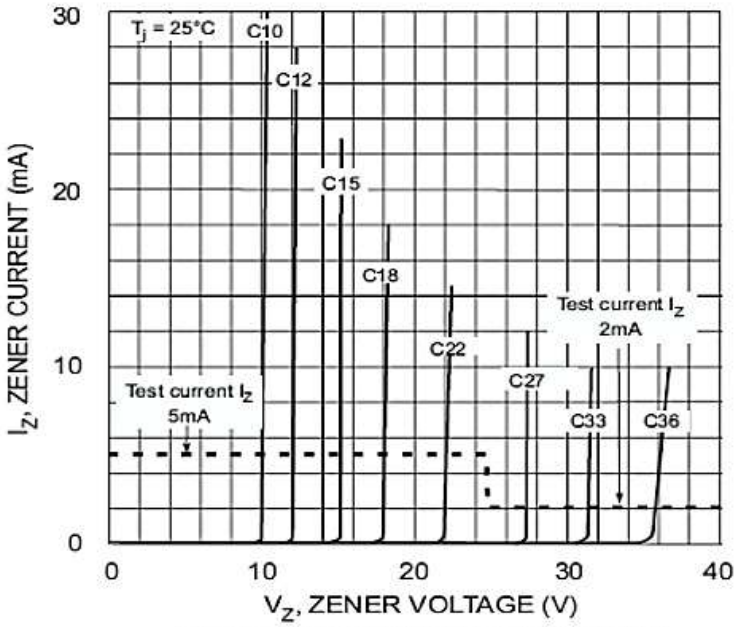



Fig. 3 Zener Breakdown Characteristics

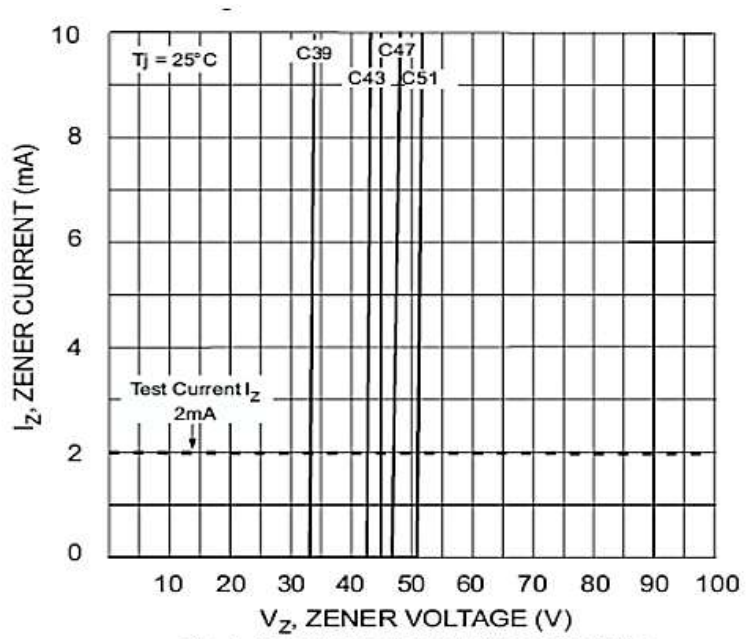



Fig. 4 Zener Breakdown Characteristics

TYPICAL CHARACTERISTICS CURVES- For Reference Only, Ta=25℃ Unless Otherwise Specified.

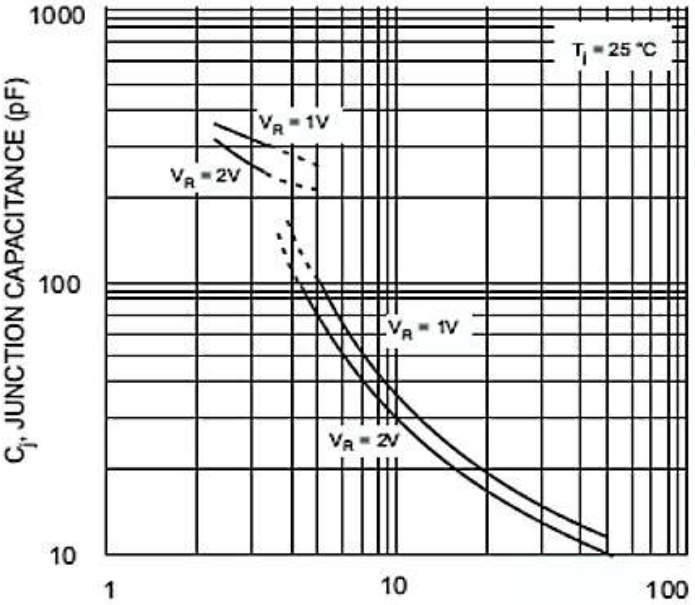
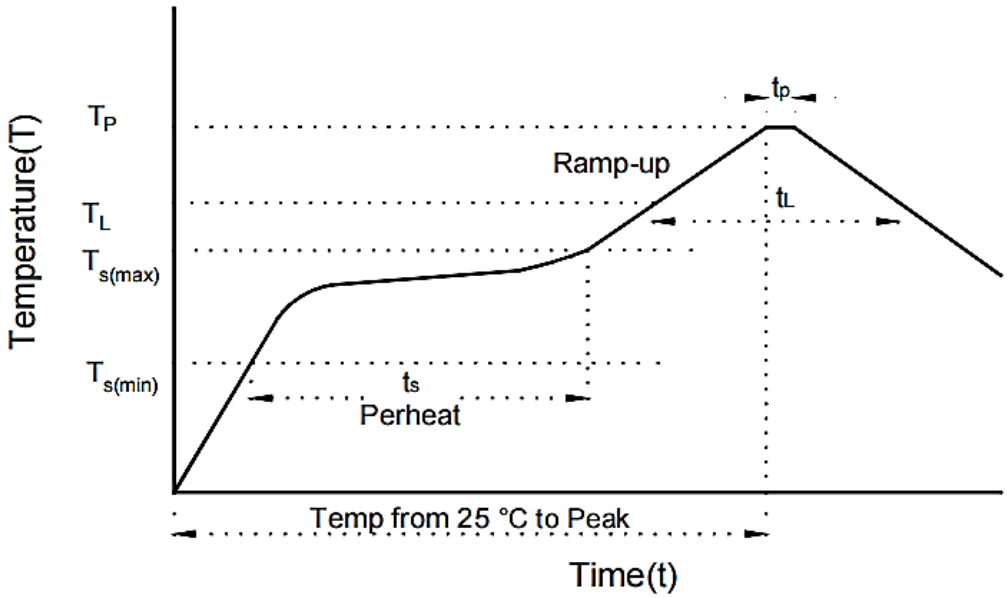


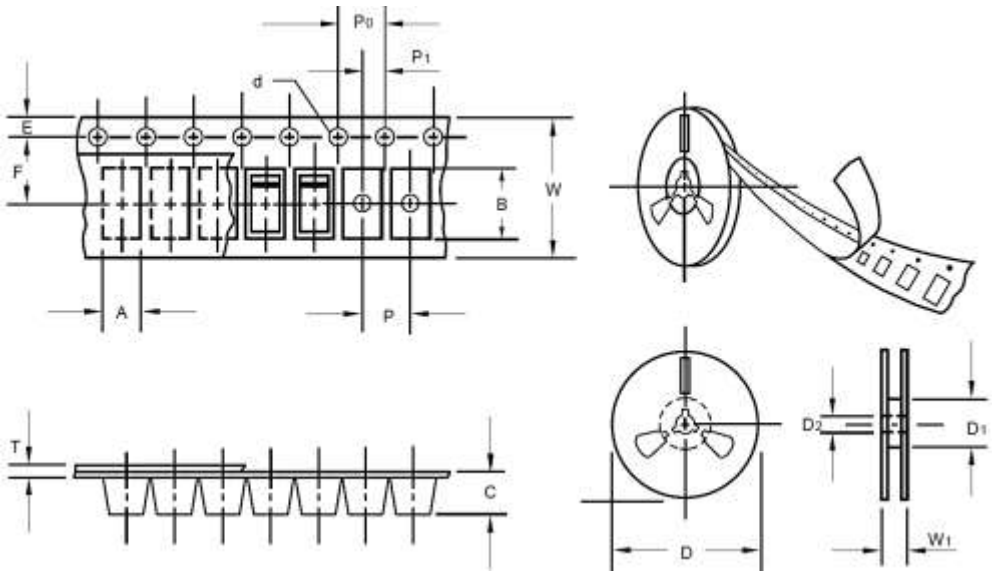

Fig. 5 Junction Capacitance vs Nominal Zener Voltage

## SUGGESTED REFLOW PROFILE - For Reference Only




| PROFILE FEATURE | | PB-FREE ASSEMBLY |
|---|---|---|
| Average Ramp-up Rate ($T_L$ Max to $T_p$) | | 3°C/second Max |
| Preheat | Temperature Min ($T_s$ Min.) | 150°C |
| | Temperature Max ($T_s$ Max.) | 200°C |
| | Time ($t_s$ Min. to $t_s$ Max.) | 60 ~ 180 seconds |
| Time maintained above | Temperature ($T_L$) | 217°C |
| | Time ($t_L$) | 60 ~ 150 seconds |
| Peak/Classification Temperature ($T_p$) | | 260 °C |
| Time within 5°C of actual Peak Temperature ($t_p$) | | 10 seconds Max. |
| Ramp-down Rate | | 6 °C /Second Max. |
| Time 25 °C to Peak Temperature | | 8 Minutes Max. |
| Suggest reflow times | | 3 Times Max. |

TAPE/REEL - Unit: mm, All Devices are packed in accordance with EIA standard RS-481-A and specifications




| ITEM | SYMBOL | TOLERANCE | CASE SOD-123 |
|---|---|---|---|
| Carrier width | A | 0.1 | 2.10 |
| Carrier Length | B | 0.1 | 4.00 |
| Carrier Depth | C | 0.1 | 1.60 |
| Sprocket hole | d | 0.05 | 1.55 |
| 13”Reel outside diameter | - | - | - |
| 13”Reel inner diameter | - | - | - |
| 7”Reel outside diameter | D | 2.0 | 178.00 |
| 7”Reel inner diameter | D1 | Min. | 50.00 |
| Feed hole diameter | D2 | 0.5 | 13.00 |
| Sprocket hole position | E | 0.1 | 1.75 |
| Punch hole position | F | 0.1 | 3.50 |
| Punch hole pitch | P | 0.1 | 4.00 |
| Sprocket hole pitch | P0 | 0.1 | 4.00 |
| Embossment center | P1 | 0.1 | 2.00 |
| Overall tape thickness | T | 0.1 | 0.25 |
| Tape width | W | 0.3 | 8.15 |
| Reel width | W1 | 1.0 | 10.50 |
| MPQ/Reel | 3000pcs/Reel | | |

## IMPORTANT NOTES AND DISCLAIMER

1. ROHS COMPLIANCE: The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained can be obtained at Download Center.
2. REACH COMPLIANCE: REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained can be obtained at Download Center.
3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
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