




**SPECIFICATION SHEET**

|   |  |  |
|---|--|--|
| <b>SPECIFICATION SHEET NO.</b>          | Q1226-MMSZ5226BS00G1   |  |
| <b>DATE</b>                             | Dec. 26, 2023  |  |
| <b>REVISION</b>                         | A0   | Updated With Most Recent Data - Official First Release |
| <b>DESCRIPTION AND MAIN PARAMETRICS</b> | <p>SMD Zener Diodes, MMSZ series, Case SOD-123, 2 Pads<br/> MMSZ5226B Type,<br/> Voltage - Zener (Nom) (Vz): 3.3V, Power Dissipation: 0.5 Watts<br/> Junction temperature: +150°C<br/> Package in Tape/Reel, 3000pcs/Reel<br/> RoHS/RoHS III compliant, RoHS Annex III lead Exemption<br/> (Exempt per RoHS EU 2015/863)</p> |  |
| <b>CUSTOMER</b>                         |  |  |
| <b>CUSTOMER PART NO.</b>                |  |  |
| <b>CROSS REF. PART NO.</b>              |  |  |
| <b>ORIGINAL MFG/PART NO.</b>            | MDD Diodes/MMSZ5226B   |  |
| <b>PART CODE</b>                        | MMSZ5226BS00G1   |  |

|                         |   |  |
|-------------------------|---|--|
| <b>VENDOR APPROVE</b>   |   |  |
| Issued/Checked/Approved |    |  |
|                         |  |  |
| DATE: Dec. 26, 2023     |   |  |

|                         |  |
|-------------------------|--|
| <b>CUSTOMER APPROVE</b> |  |
|                         |  |
| DATE:                   |  |

**SMD ZENER DIODES CASE SOD-123 MMSZ SERIES**

**MAIN FEATURE**

- Small Plastic Package Suitable For Surface Mounted Design.
- Wide Zener Reverse Voltage Range 2.4V To 43V.
- Glass Passivated Junction
- Tolerance Approximately  $\pm 5\%$
- 0.5W Max. Peak Pulse Power
- High Temperature Soldering Guaranteed: 260°C/10 Seconds At Terminals
- RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863)
- Cross Main Competitor Parts In Market



**APPLICATION**

- For SMD Application

**PART CODE GUIDE**

**RFQ**  
Request For Quotation

| MMSZ | 5226B | S | 00G1 |
|------|-------|---|------|
| 1    | 2     | 3 | 4    |

1. MMSZ: SMD Zener Diodes, MMSZ series Code, Package Case SOD-123
2. 5226B: Specification code for Voltage - Zener (Nom) (Vz): 3.3V
3. S: Package Code, Tape/Reel
4. 00G1: Internal Control Code Or Special Parameters Code, Letter A~Z Or Digits (1-9); Blank: N/A

**ELECTRICAL CHARACTERISTICS**

See Page 5 ~ Page 6 For Different Part Code

**HOW TO ORDER**

Please indicate part code and send us your RFQ by E-mail, [sales@nextgencomponent.com](mailto:sales@nextgencomponent.com)

**SMD ZENER DIODES CASE SOD-123 MMSZ SERIES**

**DIMENSION** - Unit: Inch/mm

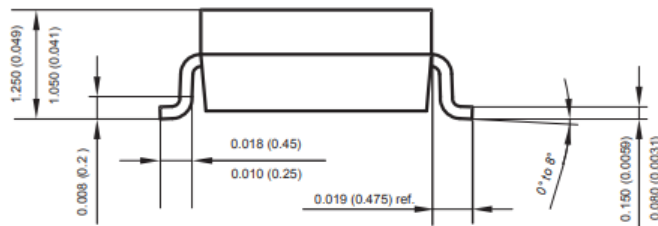
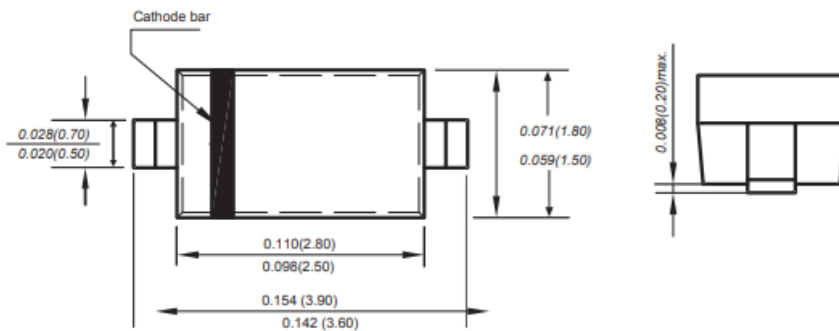
Image for reference



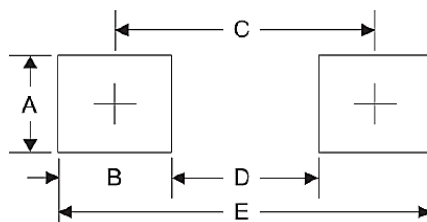
**Marking:** Standard

- See Marking Code
- List at Page 5~ Page 6

**Case Dimension:**  
SOD-123



**Recommend Pad Layout**



| SYMBOL | UNIT (INCH) | UNIT (MM) |
|--------|-------------|-----------|
| A      | 0.047       | 1.20      |
| B      | 0.047       | 1.20      |
| C      | 0.126       | 3.20      |
| D      | 0.079       | 2.00      |
| E      | 0.173       | 4.40      |

**SMD ZENER DIODES CASE SOD-123 MMSZ SERIES**

**MECHANICAL DATA**

| CASE                                    | TERMINALS                                     | POLARITY                              | MOUNTING POSITION | MARKING                                     | WEIGHT PER PIECE             |
|---|---|---------------------------------------|-------------------|---|------------------------------|
| JEDEC SOD-123<br>molded plastic<br>body | Solderable per<br>MIL-STD-750,<br>Method 2026 | Polarity symbol<br>marking on<br>body | ANY               | See Marking<br>Code List<br>(Page 5~Page 6) | 0.00056 ounce<br>0.016 grams |

**MAX. RATING & CHARACTERISTICS** - Ratings at 25°C Ambient Temperature Unless Otherwise Specified.

| PARAMETER                                   | SYMBOLS          | VALUE      | UNITS |
|---|------------------|------------|-------|
| Forward Voltage @ I <sub>F</sub> =10mA      | V <sub>F</sub>   | 0.9        | V     |
| Power Dissipation                           | P <sub>d</sub>   | 0.5        | W     |
| Thermal resistance, junction to ambient air | R <sub>θJA</sub> | 350        | °C/W  |
| Junction Temperature                        | T <sub>J</sub>   | +150       | °C    |
| Storage Temperature Range                   | T <sub>stg</sub> | -65 ~ +150 | °C    |

Notes

1. Device mounted on ceramic PCB; 7.6 mm x 9.4 mm x 0.87 mm with pad areas 25 mm<sup>2</sup>.
2. Tested with pulses, T<sub>p</sub> ≤ 1.0ms.

**SMD ZENER DIODES CASE SOD-123 MMSZ SERIES**
**ELECTRICAL CHARACTERISTICS - Ta = 25°C**

| Part Code             | Zener Voltage Range<br>Vz @ IZT |             |             | Test<br>Current<br>IZT<br>(mA) | Max. Reverse<br>Leakage<br>Current |                | Max.<br>Zener Impedance |                               | Marking<br>Code |
|-----------------------|---------------------------------|-------------|-------------|--------------------------------|------------------------------------|----------------|-------------------------|-------------------------------|-----------------|
|                       | Nom.<br>(V)                     | Min.<br>(V) | Max.<br>(V) |                                | IR<br>(µA)                         | @<br>VR<br>(V) | ZzT@<br>IZT<br>(Ω)      | Zzk@<br>Izk=0.25<br>mA<br>(Ω) |                 |
| MMSZ5221BS00C1        | 2.4                             | 2.28        | 2.52        | 20                             | 100                                | 1.0            | 30                      | 1200                          | C1              |
| MMSZ5223BS00C3        | 2.7                             | 2.57        | 2.84        | 20                             | 75                                 | 1.0            | 30                      | 1300                          | C3              |
| MMSZ5225BS00C5        | 3.0                             | 2.85        | 3.15        | 20                             | 50                                 | 1.0            | 30                      | 1600                          | C5              |
| <b>MMSZ5226BS00G1</b> | <b>3.3</b>                      | <b>3.14</b> | <b>3.47</b> | <b>20</b>                      | <b>25</b>                          | <b>1.0</b>     | <b>28</b>               | <b>1600</b>                   | <b>G1</b>       |
| MMSZ5227BS00G2        | 3.6                             | 3.42        | 3.78        | 20                             | 15                                 | 1.0            | 24                      | 1700                          | G2              |
| MMSZ5228BS00G3        | 3.9                             | 3.71        | 4.10        | 20                             | 10                                 | 1.0            | 23                      | 1900                          | G3              |
| MMSZ5229BS00G4        | 4.3                             | 4.09        | 4.52        | 20                             | 5.0                                | 1.0            | 22                      | 2000                          | G4              |
| MMSZ5230BS00G5        | 4.7                             | 4.47        | 4.94        | 20                             | 5.0                                | 2.0            | 19                      | 1900                          | G5              |
| MMSZ5231BS00E1        | 5.1                             | 4.85        | 5.36        | 20                             | 5.0                                | 2.0            | 17                      | 1600                          | E1              |
| MMSZ5232BS00E2        | 5.6                             | 5.32        | 5.88        | 20                             | 5.0                                | 3.0            | 11                      | 1600                          | E2              |
| MMSZ5233BS00E3        | 6.0                             | 5.70        | 6.30        | 20                             | 5.0                                | 3.5            | 7                       | 1600                          | E3              |
| MMSZ5234BS00E4        | 6.2                             | 5.89        | 6.51        | 20                             | 5.0                                | 4.0            | 7                       | 1000                          | E4              |
| MMSZ5235BS00E5        | 6.8                             | 6.46        | 7.14        | 20                             | 3.0                                | 5.0            | 5                       | 750                           | E5              |
| MMSZ5236BS00F1        | 7.5                             | 7.13        | 7.88        | 20                             | 3.0                                | 6.0            | 6                       | 500                           | F1              |
| MMSZ5237BS00F2        | 8.2                             | 7.79        | 8.61        | 20                             | 3.0                                | 6.5            | 8                       | 500                           | F2              |
| MMSZ5238BS00F3        | 8.7                             | 8.27        | 9.14        | 20                             | 3.0                                | 6.5            | 8                       | 600                           | F3              |
| MMSZ5239BS00F4        | 9.1                             | 8.65        | 9.56        | 20                             | 3.0                                | 7.0            | 10                      | 600                           | F4              |
| MMSZ5240BS00F5        | 10                              | 9.50        | 10.50       | 20                             | 3.0                                | 8.0            | 17                      | 600                           | F5              |
| MMSZ5241BS00H1        | 11                              | 10.45       | 11.55       | 20                             | 2.0                                | 8.4            | 22                      | 600                           | H1              |
| MMSZ5242BS00H2        | 12                              | 11.40       | 12.60       | 20                             | 1.0                                | 9.1            | 30                      | 600                           | H2              |

**SMD ZENER DIODES CASE SOD-123 MMSZ SERIES**
**ELECTRICAL CHARACTERISTICS - Ta = 25°C**

| Part Code      | Zener Voltage Range<br>Vz @ IZT |             |             | Test<br>Current<br>IZT<br>(mA) | Max. Reverse<br>Leakage<br>Current |                | Max.<br>Zener Impedance |                               | Marking<br>Code |
|----------------|---------------------------------|-------------|-------------|--------------------------------|------------------------------------|----------------|-------------------------|-------------------------------|-----------------|
|                | Nom.<br>(V)                     | Min.<br>(V) | Max.<br>(V) |                                | IR<br>(µA)                         | @<br>VR<br>(V) | ZzT@<br>IZT<br>(Ω)      | Zzk@<br>Izk=0.25<br>mA<br>(Ω) |                 |
| MMSZ5243BS00H3 | 13                              | 12.35       | 13.65       | 9.5                            | 0.5                                | 9.9            | 13                      | 600                           | H3              |
| MMSZ5245BS00H5 | 15                              | 14.25       | 15.75       | 8.5                            | 0.1                                | 11             | 16                      | 600                           | H5              |
| MMSZ5246BS00J1 | 16                              | 15.20       | 16.80       | 7.8                            | 0.1                                | 12             | 17                      | 600                           | J1              |
| MMSZ5248BS00J3 | 18                              | 17.10       | 18.90       | 7.0                            | 0.1                                | 14             | 21                      | 600                           | J3              |
| MMSZ5250BS00J5 | 20                              | 19.00       | 21.00       | 6.2                            | 0.1                                | 15             | 25                      | 600                           | J5              |
| MMSZ5251BS00K1 | 22                              | 20.90       | 23.10       | 5.6                            | 0.1                                | 17             | 29                      | 600                           | K1              |
| MMSZ5252BS00K2 | 24                              | 22.80       | 25.20       | 5.2                            | 0.1                                | 18             | 33                      | 600                           | K2              |
| MMSZ5254BS00K4 | 27                              | 25.65       | 28.35       | 5.0                            | 0.1                                | 21             | 41                      | 600                           | K4              |
| MMSZ5255BS00K5 | 28                              | 26.60       | 29.40       | 4.5                            | 0.1                                | 21             | 44                      | 600                           | K5              |
| MMSZ5256BS00M1 | 30                              | 28.50       | 31.5        | 4.2                            | 0.1                                | 23             | 49                      | 600                           | M1              |
| MMSZ5257BS00M2 | 33                              | 31.35       | 34.65       | 3.8                            | 0.1                                | 25             | 58                      | 700                           | M2              |
| MMSZ5258BS00M3 | 36                              | 34.20       | 37.80       | 3.4                            | 0.1                                | 27             | 70                      | 700                           | M3              |
| MMSZ5259BS00M4 | 39                              | 37.05       | 40.95       | 3.2                            | 0.1                                | 30             | 80                      | 800                           | M4              |
| MMSZ5260BS00M5 | 43                              | 40.85       | 45.15       | 3.0                            | 0.1                                | 33             | 93                      | 900                           | M5              |

**SMD ZENER DIODES CASE SOD-123 MMSZ SERIES**

**RATINGS AND CHARACTERISTIC CURVES** (For Reference Only) -  $T_a = 25^\circ\text{C}$  Unless Otherwise Specified

Figure 1. Power Dissipation vs Ambient Temperature Curve

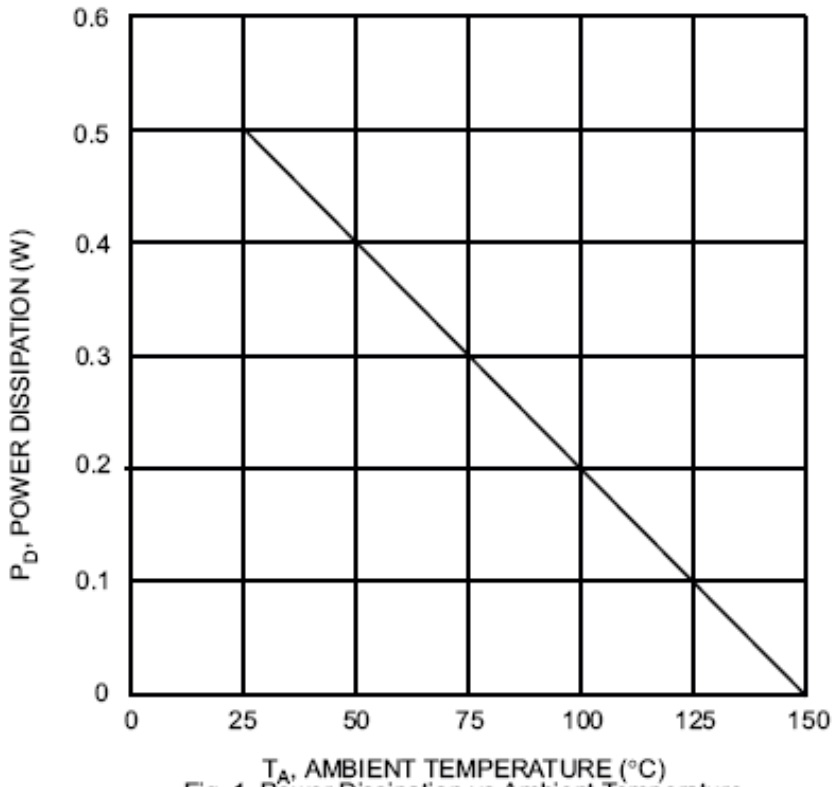


Fig. 1 Power Dissipation vs Ambient Temperature

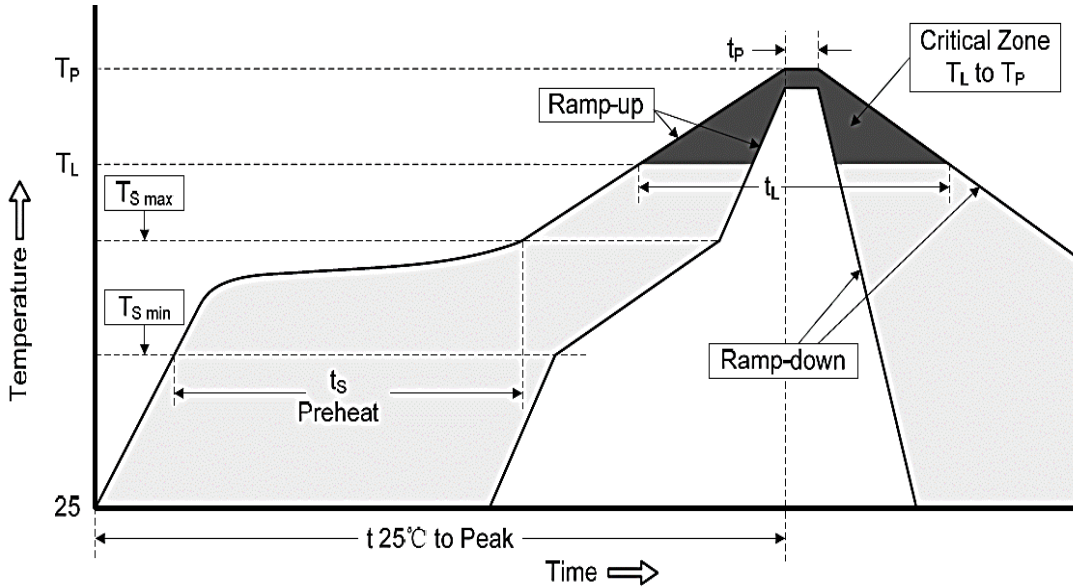
**SMD ZENER DIODES CASE SOD-123 MMSZ SERIES**
**RELIABILITY**

| NUMBER | EXPERIMENT ITEMS                   | EXPERIMENT METHOD AND CONDITIONS   | REFERENCE DOCUMENTS             |
|--------|------------------------------------|--|---------------------------------|
| 1      | Solder Resistance Test             | Test 260°C± 5°C for 10 ± 2 sec.<br>Immerse body into solder 1/16" ± 1/32"                                      | MIL-STD-750D<br>METHOD-2031.2   |
| 2      | Solderability Test                 | 230°C ±5°C for 5 sec.  | MIL-STD-750D<br>METHOD-2026.1 0 |
| 3      | Pull Test                          | 1 kg in axial lead direction for 10 sec.   | MIL-STD-750D<br>METHOD-2036.4   |
| 4      | Bend Test                          | 0.5Kg Weight Applied To Each Lead,<br>Bending Arcs 90 °C ± 5 °C For 3 Times                                    | MIL-STD-750D<br>METHOD-2036.4   |
| 5      | High Temperature Reverse Bias Test | TA=100°C for 1000 Hours at VR=80%<br>Rated VR  | MIL-STD-750D<br>METHOD-1038.4   |
| 6      | Forward Operation Life Test        | TA=25°C Rated Average Rectified<br>Current   | MIL-STD-750D<br>METHOD-1027.3   |
| 7      | Intermittent Operation Life Test   | On state: 5 min with rated IRMS Power<br>Off state: 5 min with Cool Forced Air.<br>On and off for 1000 cycles. | MIL-STD-750D<br>METHOD-1036.3   |
| 8      | Pressure Cooker Test               | 15 PSIG, TA=121°C, 4 hours   | MIL-S-19500<br>APPENIOXC        |
| 9      | Temperature Cycling Test           | -55°C~+125°C; 30 Minutes For Dwelled<br>Time 5 minutes for transferred time.<br>Total: 10 cycles.              | MIL-STD-750D<br>METHOD-1051.7   |
| 10     | Thermal Shock Test                 | 0°C for 5 minutes., 100°C for 5minutes,<br>Total: 10 cycles  | MIL-STD-750D<br>METHOD-1056.7   |
| 11     | Forward Surge Test                 | 8.3ms Single Sale Sine-wave One Surge.   | MIL-STD-750D<br>METHOD-4066.4   |
| 12     | Humidity Test                      | TA=65°C, RH=98% for 1000 hours.  | MIL-STD-750D<br>METHOD-1021.3   |
| 13     | High Temperature Storage life Test | 150°C for 1000 Hours   | MIL-STD-750D<br>METHOD-1031.5   |

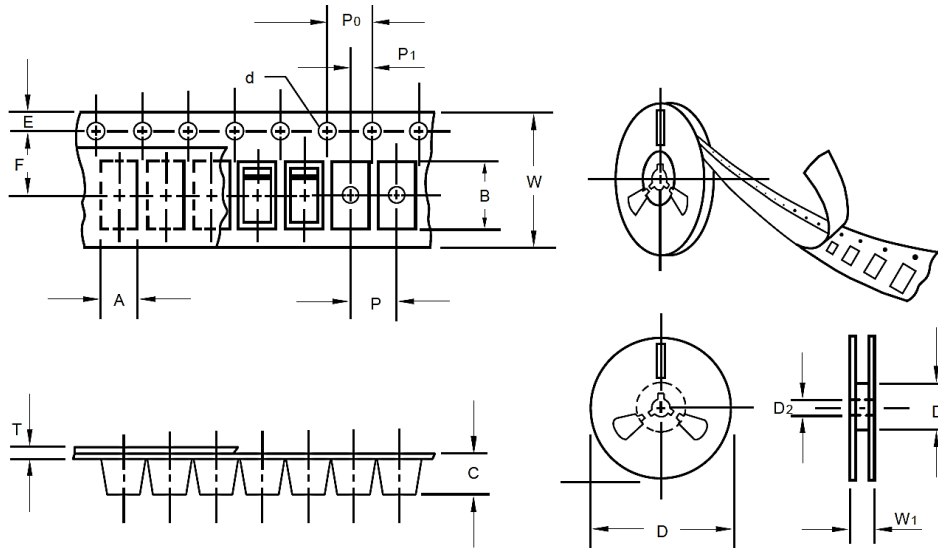


**SMD ZENER DIODES CASE SOD-123 MMSZ SERIES**

**SUGGESTED REFLOW PROFILE - For Reference Only**



| PROFILE FEATURE                                 |                           | PB-FREE ASSEMBLY  |
|---|---------------------------|-------------------|
| Average Ramp-up Rate (Ts Max to Tp)             |                           | 3°C/second Max    |
| Preheat   | Temperature Min (Ts Min.) | 150°C             |
|   | Temperature Max (Ts Max.) | 200°C             |
|   | Time (ts Min. to ts Max.) | 60 ~ 180 seconds  |
| Time maintained above                           | Temperature (Tl)          | 217°C             |
|   | Time (tl)                 | 60 ~ 150 seconds  |
| Peak/Classification Temperature (Tp)            |                           | 260 °C            |
| Time within 5°C of actual Peak Temperature (tp) |                           | 20 ~ 40 seconds   |
| Ramp-down rate                                  |                           | 6 °C /Second Max. |
| Time 25 °C to Peak Temperature                  |                           | 8 minutes Max.    |
| Suggest reflow times                            |                           | 3 Times Max.      |

**SMD ZENER DIODES CASE SOD-123 MMSZ SERIES**
**TAPE/REEL (Unit: mm) - All Devices are packed in accordance with EIA standard RS-481-A.**


| 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        |
| Component Spacing         | 4.0    |           |              |
| Qty. Per Reel (pcs)       | 3000   |           |              |

## SMD ZENER DIODES CASE SOD-123 MMSZ SERIES

### 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 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 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.
4. NextGen Component, Inc (*NextGen*) reserves the right to make changes to this document and its products and specifications at any time without notice. Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.
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8. *NextGen* requires that customers first obtain an RMA (Returned Merchandise Authorization) number prior to returning any products. Returns must be made within 30 days of the date of invoice, be in the original packaging, unused and like-new condition. At the time of quoting or purchasing, a product may say that it is

Non-Cancelable/ Non-Returnable (NCNR). These products are not returnable and not refundable.