

## MMSZ5221B~MMSZ5262B

### SURFACE MOUNT SILICON ZENER DIODES

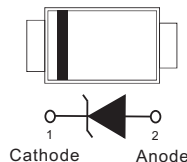
**VOLTAGE** 2.4 to 51 Volt **POWER** 500 mWatt

#### FEATURES

- Planar Die construction
- 500mW Power Dissipation
- Ideally Suited for Automated Assembly Processes
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

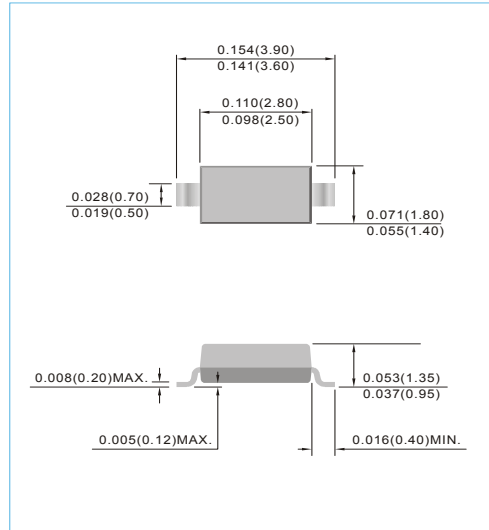
#### MECHANICAL DATA

- Case: SOD-123, Molded Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0003 ounce, 0.0103 gram



#### SOD-123

Unit : inch(mm)



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

| Parameter                                         | Symbol          | Value       | Units                       |
|---------------------------------------------------|-----------------|-------------|-----------------------------|
| Total Power Dissipation (Notes A)                 | $P_D$           | 500         | mW                          |
| Typical Thermal Resistance (Notes B)<br>(Notes A) | $R_{\theta JA}$ | 430<br>325  | $^{\circ}\text{C}/\text{W}$ |
| Operating Junction and Storage Temperature Range  | $T_J$           | -55 to +150 | $^{\circ}\text{C}$          |

NOTES : A. Mounted on 100cm<sup>2</sup>(1mm thick) copper areas.

B. Mounted on a FR4 PCB, single-sided copper, mini pad.



## MMSZ5221B~MMSZ5262B

| Part Number | Nominal Zener Voltage            |        |        | Max. Zener Impedance              |     |                                   |      | Max Reverse Leakage Current     |      | Marking Code |
|-------------|----------------------------------|--------|--------|-----------------------------------|-----|-----------------------------------|------|---------------------------------|------|--------------|
|             | V <sub>Z</sub> @ I <sub>ZT</sub> |        |        | Z <sub>VT</sub> @ I <sub>ZT</sub> |     | Z <sub>VK</sub> @ I <sub>ZK</sub> |      | I <sub>R</sub> @ V <sub>R</sub> |      |              |
|             | Nom. V                           | Min. V | Max. V | Ω                                 | mA  | Ω                                 | mA   | μA                              | V    |              |
| MMSZ5221B   | 2.4                              | 2.28   | 2.52   | 30                                | 20  | 1200                              | 0.25 | 100                             | 1    | C1           |
| MMSZ5222B   | 2.5                              | 2.38   | 2.63   | 30                                | 20  | 1250                              | 0.25 | 100                             | 1    | C2           |
| MMSZ5223B   | 2.7                              | 2.57   | 2.84   | 30                                | 20  | 1300                              | 0.25 | 75                              | 1    | C3           |
| MMSZ5224B   | 2.8                              | 2.66   | 2.94   | 30                                | 20  | 1400                              | 0.25 | 75                              | 1    | C4           |
| MMSZ5225B   | 3                                | 2.85   | 3.15   | 30                                | 20  | 1600                              | 0.25 | 50                              | 1    | C5           |
| MMSZ5226B   | 3.3                              | 3.14   | 3.47   | 28                                | 20  | 1600                              | 0.25 | 25                              | 1    | D1           |
| MMSZ5227B   | 3.6                              | 3.42   | 3.78   | 24                                | 20  | 1700                              | 0.25 | 15                              | 1    | D2           |
| MMSZ5228B   | 3.9                              | 3.71   | 4.1    | 23                                | 20  | 1900                              | 0.25 | 10                              | 1    | D3           |
| MMSZ5229B   | 4.3                              | 4.09   | 4.52   | 22                                | 20  | 2000                              | 0.25 | 5                               | 1    | D4           |
| MMSZ5230B   | 4.7                              | 4.47   | 4.94   | 19                                | 20  | 1900                              | 0.25 | 5                               | 2    | D5           |
| MMSZ5231B   | 5.1                              | 4.85   | 5.36   | 17                                | 20  | 1600                              | 0.25 | 5                               | 2    | E1           |
| MMSZ5232B   | 5.6                              | 5.32   | 5.88   | 11                                | 20  | 1600                              | 0.25 | 5                               | 3    | E2           |
| MMSZ5233B   | 6.0                              | 5.70   | 6.30   | 7                                 | 20  | 1600                              | 0.25 | 5                               | 3.5  | E3           |
| MMSZ5234B   | 6.2                              | 5.89   | 6.51   | 7                                 | 20  | 1000                              | 0.25 | 5                               | 4    | E4           |
| MMSZ5235B   | 6.8                              | 6.46   | 7.14   | 5                                 | 20  | 750                               | 0.25 | 3                               | 5    | E5           |
| MMSZ5236B   | 7.5                              | 7.13   | 7.88   | 6                                 | 20  | 500                               | 0.25 | 3                               | 6    | F1           |
| MMSZ5237B   | 8.2                              | 7.79   | 8.61   | 8                                 | 20  | 500                               | 0.25 | 3                               | 6    | F2           |
| MMSZ5238B   | 8.7                              | 8.27   | 9.14   | 8                                 | 20  | 600                               | 0.25 | 3                               | 6.5  | F3           |
| MMSZ5239B   | 9.1                              | 8.65   | 9.56   | 10                                | 20  | 600                               | 0.25 | 3                               | 6.5  | F4           |
| MMSZ5240B   | 10                               | 9.5    | 10.5   | 17                                | 20  | 600                               | 0.25 | 3                               | 8    | F5           |
| MMSZ5241B   | 11                               | 10.45  | 11.55  | 22                                | 20  | 600                               | 0.25 | 2                               | 8.4  | H1           |
| MMSZ5242B   | 12                               | 11.4   | 12.6   | 30                                | 20  | 600                               | 0.25 | 1                               | 9.1  | H2           |
| MMSZ5243B   | 13                               | 12.35  | 13.65  | 13                                | 9.5 | 600                               | 0.25 | 0.5                             | 9.9  | H3           |
| MMSZ5244B   | 14                               | 13.3   | 14.7   | 15                                | 9   | 600                               | 0.25 | 0.1                             | 10.5 | H4           |
| MMSZ5245B   | 15                               | 14.25  | 15.75  | 16                                | 8.5 | 600                               | 0.25 | 0.1                             | 11   | H5           |
| MMSZ5246B   | 16                               | 15.2   | 16.8   | 17                                | 7.8 | 600                               | 0.25 | 0.1                             | 12   | J1           |
| MMSZ5247B   | 17                               | 16.15  | 17.85  | 19                                | 7.5 | 600                               | 0.25 | 0.1                             | 13   | J2           |
| MMSZ5248B   | 18                               | 17.1   | 18.9   | 21                                | 7   | 600                               | 0.25 | 0.1                             | 14   | J3           |
| MMSZ5249B   | 19                               | 18.05  | 19.95  | 23                                | 6.6 | 600                               | 0.25 | 0.1                             | 14   | J4           |
| MMSZ5250B   | 20                               | 19     | 21     | 25                                | 6.2 | 600                               | 0.25 | 0.1                             | 15   | J5           |
| MMSZ5251B   | 22                               | 20.9   | 23.1   | 29                                | 5.6 | 600                               | 0.25 | 0.1                             | 17   | K1           |
| MMSZ5252B   | 24                               | 22.8   | 25.2   | 33                                | 5.2 | 600                               | 0.25 | 0.1                             | 18   | K2           |
| MMSZ5253B   | 25                               | 23.75  | 26.25  | 35                                | 5.0 | 600                               | 0.25 | 0.1                             | 19   | K3           |
| MMSZ5254B   | 27                               | 25.65  | 28.35  | 41                                | 5   | 600                               | 0.25 | 0.1                             | 21   | K4           |
| MMSZ5255B   | 28                               | 26.6   | 29.4   | 44                                | 4.5 | 600                               | 0.25 | 0.1                             | 21   | K5           |
| MMSZ5256B   | 30                               | 28.5   | 31.5   | 49                                | 4.2 | 600                               | 0.25 | 0.1                             | 23   | M1           |
| MMSZ5257B   | 33                               | 31.35  | 34.65  | 58                                | 3.8 | 700                               | 0.25 | 0.1                             | 25   | M2           |
| MMSZ5258B   | 36                               | 34.2   | 37.8   | 70                                | 3.4 | 700                               | 0.25 | 0.1                             | 27   | M3           |
| MMSZ5259B   | 39                               | 37.05  | 40.95  | 80                                | 3.2 | 800                               | 0.25 | 0.1                             | 30   | M4           |
| MMSZ5260B   | 43                               | 40.85  | 45.15  | 93                                | 3   | 900                               | 0.25 | 0.1                             | 33   | M5           |
| MMSZ5261B   | 47                               | 44.65  | 49.35  | 105                               | 2.7 | 1000                              | 0.25 | 0.1                             | 36   | N1           |
| MMSZ5262B   | 51                               | 48.45  | 53.55  | 125                               | 2.5 | 1100                              | 0.25 | 0.1                             | 39   | N2           |

## MMSZ5221B~MMSZ5262B

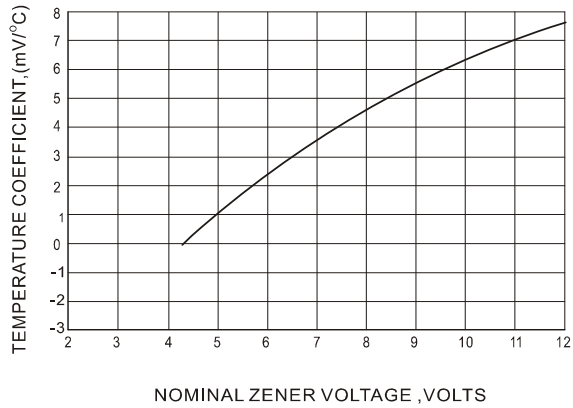


Fig.1 TEMPERATURE COEFFICIENTS

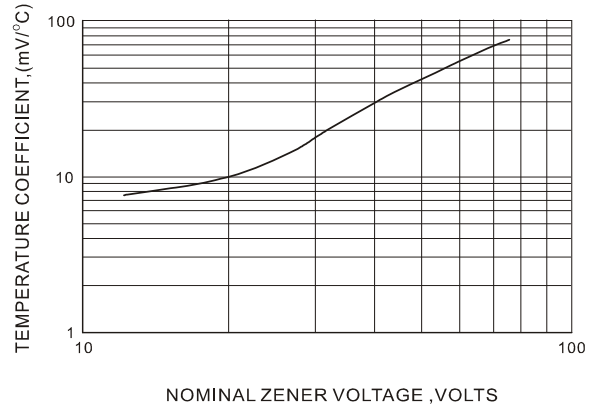


Fig.2 TEMPERATURE COEFFICIENTS

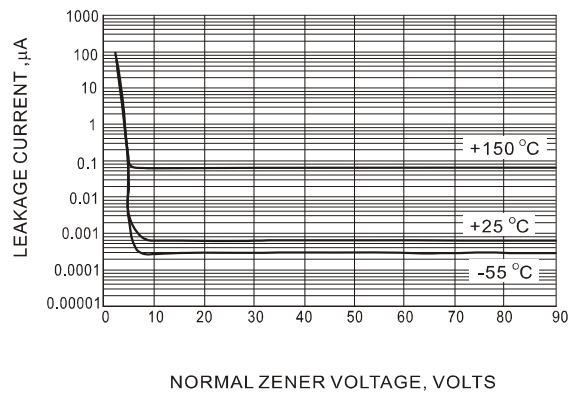


Fig.3 TYPICAL LEAKAGE CURRENT

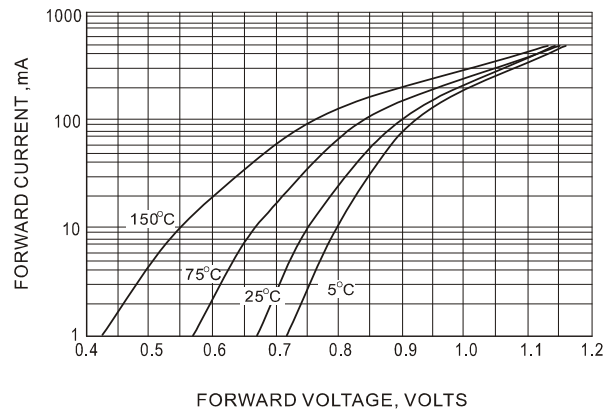


Fig.4 TYPICAL FORWARD VOLTAGE

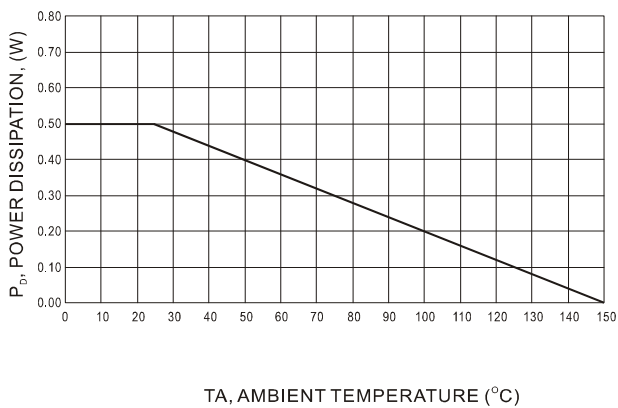


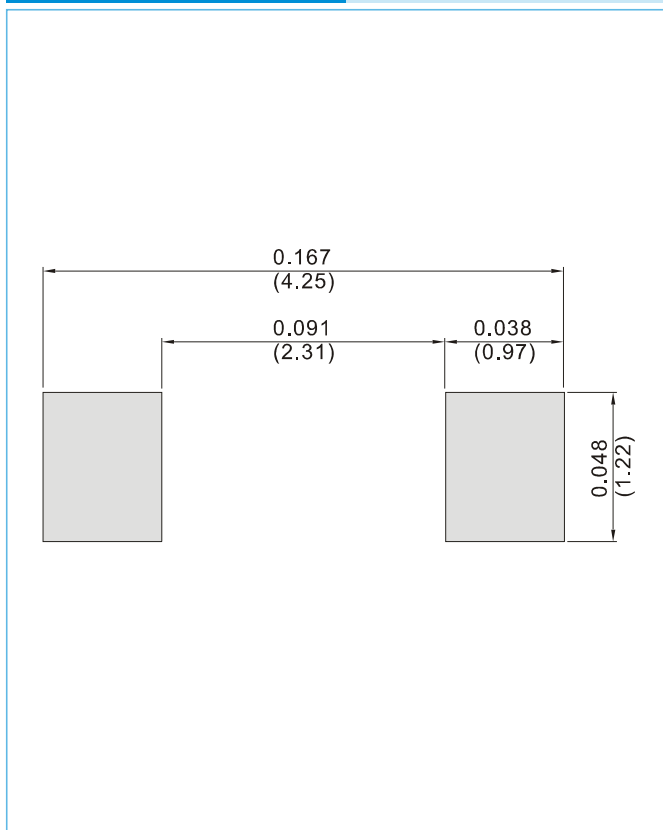
Fig.5 POWER DERATING CURVE

## MMSZ5221B~MMSZ5262B

### MOUNTING PAD LAYOUT

SOD-123

Unit : inch(mm)



### ORDER INFORMATION

- Packing information
  - T/R - 10K per 13" plastic Reel
  - T/R - 3K per 7" plastic Reel

## MMSZ5221B~MMSZ5262B

### Part No\_packing code\_Version

MMSZ5221B\_R1\_00001

MMSZ5221B\_R2\_00001

For example :

**RB500V-40\_R2\_00001**

Part No.

Serial number

Version code means HF

Packing size code means 13"

Packing type means T/R

| Packing Code <b>XX</b>               |                      |                                  |                      | Version Code <b>XXXXX</b> |                      |                                       |
|--------------------------------------|----------------------|----------------------------------|----------------------|---------------------------|----------------------|---------------------------------------|
| Packing type                         | 1 <sup>st</sup> Code | Packing size code                | 2 <sup>nd</sup> Code | HF or RoHS                | 1 <sup>st</sup> Code | 2 <sup>nd</sup> ~5 <sup>th</sup> Code |
| Tape and Ammunition Box (T/B)        | <b>A</b>             | N/A                              | <b>0</b>             | HF                        | <b>0</b>             | serial number                         |
| Tape and Reel (T/R)                  | <b>R</b>             | 7"                               | <b>1</b>             | RoHS                      | <b>1</b>             | serial number                         |
| Bulk Packing (B/P)                   | <b>B</b>             | 13"                              | <b>2</b>             |                           |                      |                                       |
| Tube Packing (T/P)                   | <b>T</b>             | 26mm                             | <b>X</b>             |                           |                      |                                       |
| Tape and Reel (Right Oriented) (TRR) | <b>S</b>             | 52mm                             | <b>Y</b>             |                           |                      |                                       |
| Tape and Reel (Left Oriented) (TRL)  | <b>L</b>             | PANASERT T/B CATHODE UP (PBCU)   | <b>U</b>             |                           |                      |                                       |
| FORMING                              | <b>F</b>             | PANASERT T/B CATHODE DOWN (PBCD) | <b>D</b>             |                           |                      |                                       |



## **MMSZ5221B~MMSZ5262B**

---

### **Disclaimer**

- Reproducing and modifying information of the document is prohibited without permission from Panjit International Inc..
- Panjit International Inc. reserves the rights to make changes of the content herein the document anytime without notification. Please refer to our website for the latest document.
- Panjit International Inc. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Panjit International Inc. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Panjit International Inc. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Panjit International Inc. for any damages resulting from such improper use or sale.
- Since Panjit uses lot number as the tracking base, please provide the lot number for tracking when complaining.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Panjit:

[MMSZ5253B\\_R1\\_00001](#) [MMSZ5253B\\_R1\\_10001](#) [MMSZ5253B\\_R2\\_00001](#) [MMSZ5253B\\_R2\\_10001](#)