



Micro Commercial Components  
20736 Marilla Street Chatsworth  
CA 91311  
Phone: (818) 701-4933  
Fax: (818) 701-4933

**1N5221B  
THRU  
1N5267B**

**500 mW  
Zener Diode  
2.4 to 75 Volts**

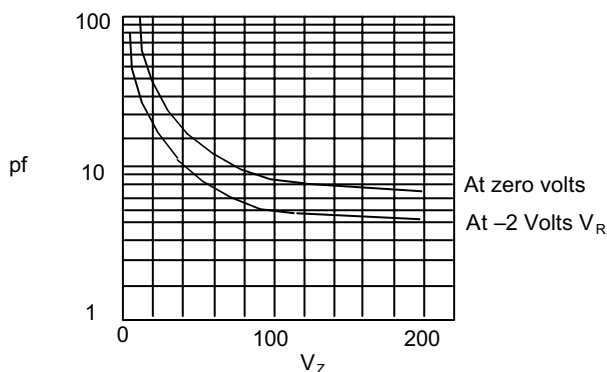
## Features

- Wide Voltage Range Available
- Glass Package
- High Temp Soldering: 260°C for 10 Seconds At Terminals
- Marking : Cathode band and type number
- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)
- Moisture Sensitivity: Level 1

## Maximum Ratings

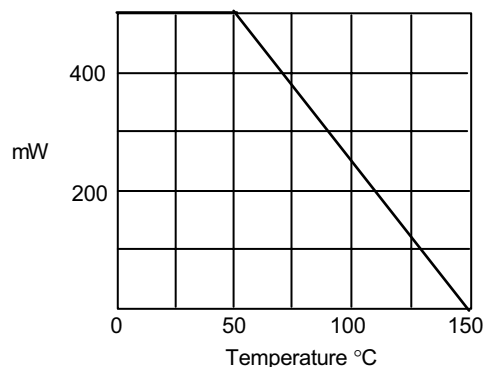
- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- 500 mWatt DC Power Dissipation
- Power Derating: 4.0mW/°C above 50°C
- Forward Voltage @ 200mA: 1.1 Volts

Figure 1 - Typical Capacitance



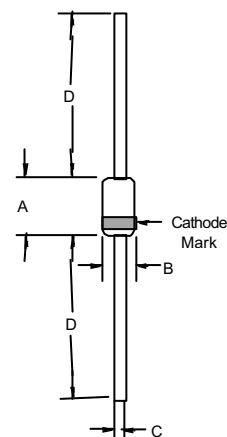
Typical Capacitance (pf) – versus – Zener voltage (V<sub>Z</sub>)

Figure 2 - Derating Curve



Power Dissipation (mW) - Versus - Temperature °C

**DO-35**



| DIMENSIONS |        |      |       |      |      |
|------------|--------|------|-------|------|------|
| DIM        | INCHES |      | MM    |      | NOTE |
|            | MIN    | MAX  | MIN   | MAX  |      |
| A          | ---    | .166 | ---   | 4.2  |      |
| B          | ---    | .079 | ---   | 2.00 |      |
| C          | ---    | .020 | ---   | .52  |      |
| D          | 1.000  | ---  | 25.40 | ---  |      |

Note: 1. Lead in Glass Exemption Applied, see EU Directive Annex 7(C)-I.

# 1N5221B thru 1N5267B

## ELECTRICAL CHARACTERISTICS @25°C

| MCC<br>PART<br>NUMBER | NOMINAL ZENER<br>VOLTAGE $V_Z$ @ $I_{ZT}$<br><br>VOLTS | TEST<br>CURRENT $I_{ZT}$<br><br>mA | MAXIMUM ZENER IMPEDANCE<br>'B' SUFFIX ONLY |                                     | MAXIMUM REVERSE<br>LEAKAGE CURRENT |       | MAX. ZENER VOLTAGE<br>TEMP COEFFICIENT 'B'<br>SUFFIX ONLY<br>% / °C |
|-----------------------|--------------------------------------------------------|------------------------------------|--------------------------------------------|-------------------------------------|------------------------------------|-------|---------------------------------------------------------------------|
|                       |                                                        |                                    | $Z_{ZT}$ @ $I_{ZT}$                        | $Z_{ZK}$ @ $I_{ZK} = 0.25\text{mA}$ | $I_R$ @ $V_R$                      |       |                                                                     |
|                       |                                                        |                                    | OHMS                                       | OHMS                                | μA                                 | VOLTS |                                                                     |
| 1N5221B               | 2.4                                                    | 20                                 | 30                                         | 1200                                | 100                                | 1.0   | -0.085                                                              |
| 1N5222B               | 2.5                                                    | 20                                 | 30                                         | 1250                                | 100                                | 1.0   | -0.085                                                              |
| 1N5223B               | 2.7                                                    | 20                                 | 30                                         | 1300                                | 75                                 | 1.0   | -0.080                                                              |
| 1N5224B               | 2.8                                                    | 20                                 | 30                                         | 1400                                | 75                                 | 1.0   | -0.080                                                              |
| 1N5225B               | 3.0                                                    | 20                                 | 29                                         | 1600                                | 50                                 | 1.0   | -0.075                                                              |
| 1N5226B               | 3.3                                                    | 20                                 | 28                                         | 1600                                | 25                                 | 1.0   | -0.070                                                              |
| 1N5227B               | 3.6                                                    | 20                                 | 24                                         | 1700                                | 15                                 | 1.0   | -0.065                                                              |
| 1N5228B               | 3.9                                                    | 20                                 | 23                                         | 1900                                | 10                                 | 1.0   | -0.060                                                              |
| 1N5229B               | 4.3                                                    | 20                                 | 22                                         | 2000                                | 5.0                                | 1.0   | ±0.055                                                              |
| 1N5230B               | 4.7                                                    | 20                                 | 19                                         | 1900                                | 5.0                                | 2.0   | ±0.030                                                              |
| 1N5231B               | 5.1                                                    | 20                                 | 17                                         | 1600                                | 5.0                                | 2.0   | ±0.030                                                              |
| 1N5232B               | 5.6                                                    | 20                                 | 11                                         | 1600                                | 5.0                                | 3.0   | +0.038                                                              |
| 1N5233B               | 6.0                                                    | 20                                 | 7.0                                        | 1600                                | 5.0                                | 3.5   | +0.038                                                              |
| 1N5234B               | 6.2                                                    | 20                                 | 7.0                                        | 1000                                | 5.0                                | 4.0   | +0.045                                                              |
| 1N5235B               | 6.8                                                    | 20                                 | 5.0                                        | 750                                 | 3.0                                | 5.0   | +0.050                                                              |
| 1N5236B               | 7.5                                                    | 20                                 | 6.0                                        | 500                                 | 3.0                                | 6.0   | +0.058                                                              |
| 1N5237B               | 8.2                                                    | 20                                 | 8.0                                        | 500                                 | 3.0                                | 6.5   | +0.062                                                              |
| 1N5238B               | 8.7                                                    | 20                                 | 8.0                                        | 600                                 | 3.0                                | 6.5   | +0.065                                                              |
| 1N5239B               | 9.1                                                    | 20                                 | 10                                         | 600                                 | 3.0                                | 7.0   | +0.068                                                              |
| 1N5240B               | 10                                                     | 20                                 | 17                                         | 600                                 | 3.0                                | 8.0   | +0.075                                                              |
| 1N5241B               | 11                                                     | 20                                 | 22                                         | 600                                 | 2.0                                | 8.4   | +0.076                                                              |
| 1N5242B               | 12                                                     | 20                                 | 30                                         | 600                                 | 1.0                                | 9.1   | +0.077                                                              |
| 1N5243B               | 13                                                     | 9.5                                | 13                                         | 600                                 | 0.5                                | 9.9   | +0.079                                                              |
| 1N5244B               | 14                                                     | 9.0                                | 15                                         | 600                                 | 0.1                                | 10    | +0.082                                                              |
| 1N5245B               | 15                                                     | 8.5                                | 16                                         | 600                                 | 0.1                                | 11    | +0.082                                                              |
| 1N5246B               | 16                                                     | 7.8                                | 17                                         | 600                                 | 0.1                                | 12    | +0.083                                                              |
| 1N5247B               | 17                                                     | 7.4                                | 19                                         | 600                                 | 0.1                                | 13    | +0.084                                                              |
| 1N5248B               | 18                                                     | 7.0                                | 21                                         | 600                                 | 0.1                                | 14    | +0.085                                                              |
| 1N5249B               | 19                                                     | 6.6                                | 23                                         | 600                                 | 0.1                                | 14    | +0.086                                                              |
| 1N5250B               | 20                                                     | 6.2                                | 25                                         | 600                                 | 0.1                                | 15    | +0.086                                                              |
| 1N5251B               | 22                                                     | 5.6                                | 29                                         | 600                                 | 0.1                                | 17    | +0.087                                                              |
| 1N5252B               | 24                                                     | 5.2                                | 33                                         | 600                                 | 0.1                                | 18    | +0.088                                                              |
| 1N5253B               | 25                                                     | 5.0                                | 35                                         | 600                                 | 0.1                                | 19    | +0.089                                                              |
| 1N5254B               | 27                                                     | 4.6                                | 41                                         | 600                                 | 0.1                                | 21    | +0.090                                                              |
| 1N5255B               | 28                                                     | 4.5                                | 44                                         | 600                                 | 0.1                                | 21    | +0.091                                                              |
| 1N5256B               | 30                                                     | 4.2                                | 49                                         | 600                                 | 0.1                                | 23    | +0.091                                                              |
| 1N5257B               | 33                                                     | 3.8                                | 58                                         | 700                                 | 0.1                                | 25    | +0.092                                                              |
| 1N5258B               | 36                                                     | 3.4                                | 70                                         | 700                                 | 0.1                                | 27    | +0.093                                                              |
| 1N5259B               | 39                                                     | 3.2                                | 80                                         | 800                                 | 0.1                                | 30    | +0.094                                                              |
| 1N5260B               | 43                                                     | 3.0                                | 93                                         | 900                                 | 0.1                                | 33    | +0.095                                                              |
| 1N5261B               | 47                                                     | 2.7                                | 105                                        | 1000                                | 0.1                                | 36    | +0.095                                                              |
| 1N5262B               | 51                                                     | 2.5                                | 125                                        | 1100                                | 0.1                                | 39    | +0.096                                                              |
| 1N5263B               | 56                                                     | 2.2                                | 150                                        | 1300                                | 0.1                                | 43    | +0.096                                                              |
| 1N5264B               | 60                                                     | 2.1                                | 170                                        | 1400                                | 0.1                                | 46    | +0.097                                                              |
| 1N5265B               | 62                                                     | 2.0                                | 185                                        | 1400                                | 0.1                                | 47    | +0.097                                                              |
| 1N5266B               | 68                                                     | 1.8                                | 230                                        | 1600                                | 0.1                                | 52    | +0.097                                                              |
| 1N5267B               | 75                                                     | 1.7                                | 270                                        | 1700                                | 0.1                                | 56    | +0.098                                                              |

NOTE 1: suffix "B" = 5% tolerance on nominal Zener voltage, suffix "C" signifies 2%.

NOTE 2: The electrical characteristics are measured after allowing the device to stabilize for 20 seconds.

NOTE 3: Temperature coefficient ( $\alpha_{VZ}$ ). Test conditions for temperature coefficient are as follows:

a.  $I_{ZT} = 7.5\text{mA}$ ,  $T_1 = 25^\circ\text{C}$ ,  $T_2 = 125^\circ\text{C}$  (1N5221 thru 1N5242)

b.  $I_{ZT} = \text{Rated } I_{ZT}$ ,  $T_1 = 25^\circ\text{C}$ ,  $T_2 = 125^\circ\text{C}$  (1N5243 thru 1N5267)

Device to be temperature stabilized with current applied prior to reading breakdown voltage at the specified ambient temperature.

# 1N5221B thru 1N5267B

Figure 1  
Zener Voltage versus Zener Current –  $V_Z = 1$  thru 16 Volts

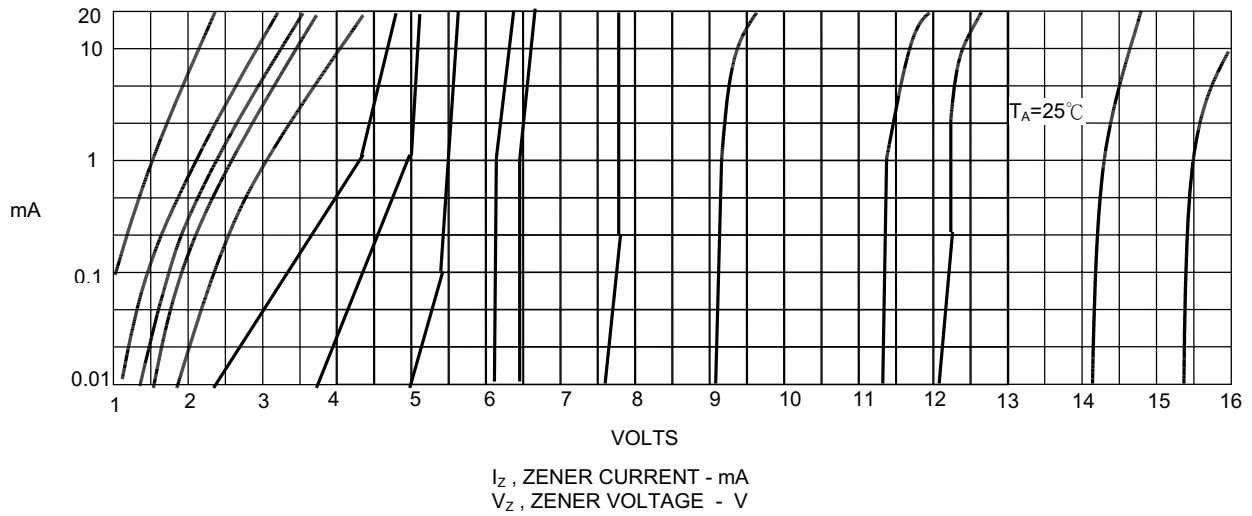
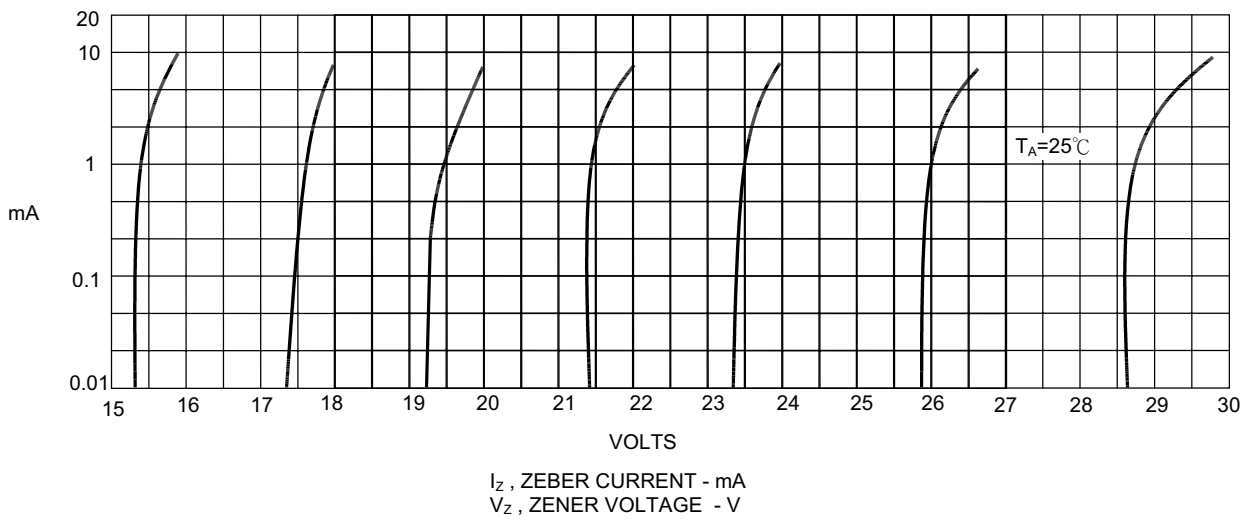


Figure 2  
Zener Voltage versus Zener Current –  $V_Z = 15$  thru 30 Volts



# 1N5221B thru 1N5267B

Figure 3  
Zener Voltage versus Zener Current –  $V_z = 30$  thru 75 Volts

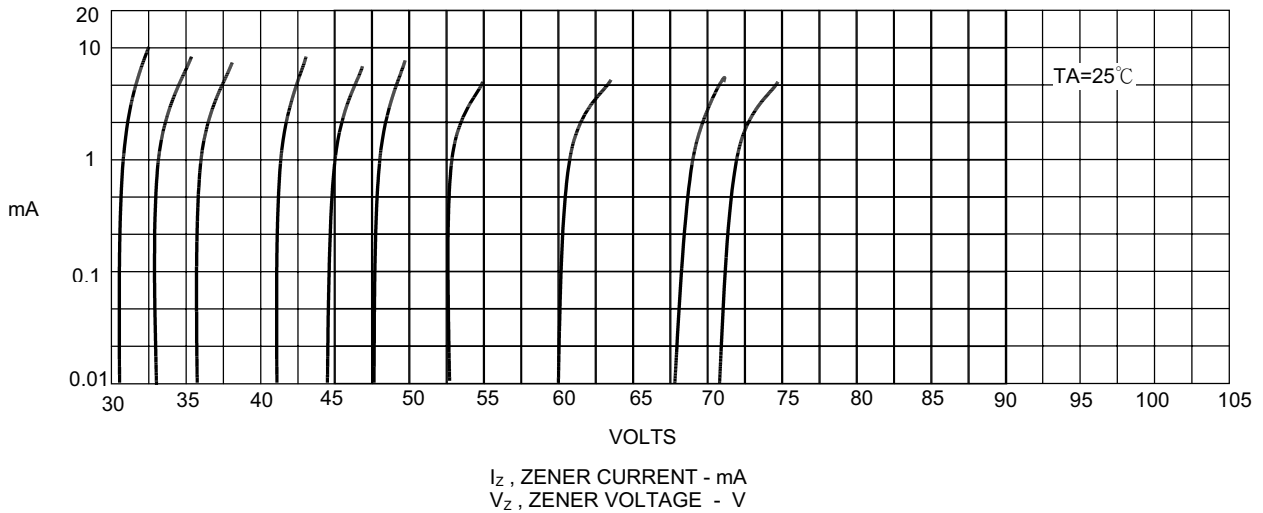
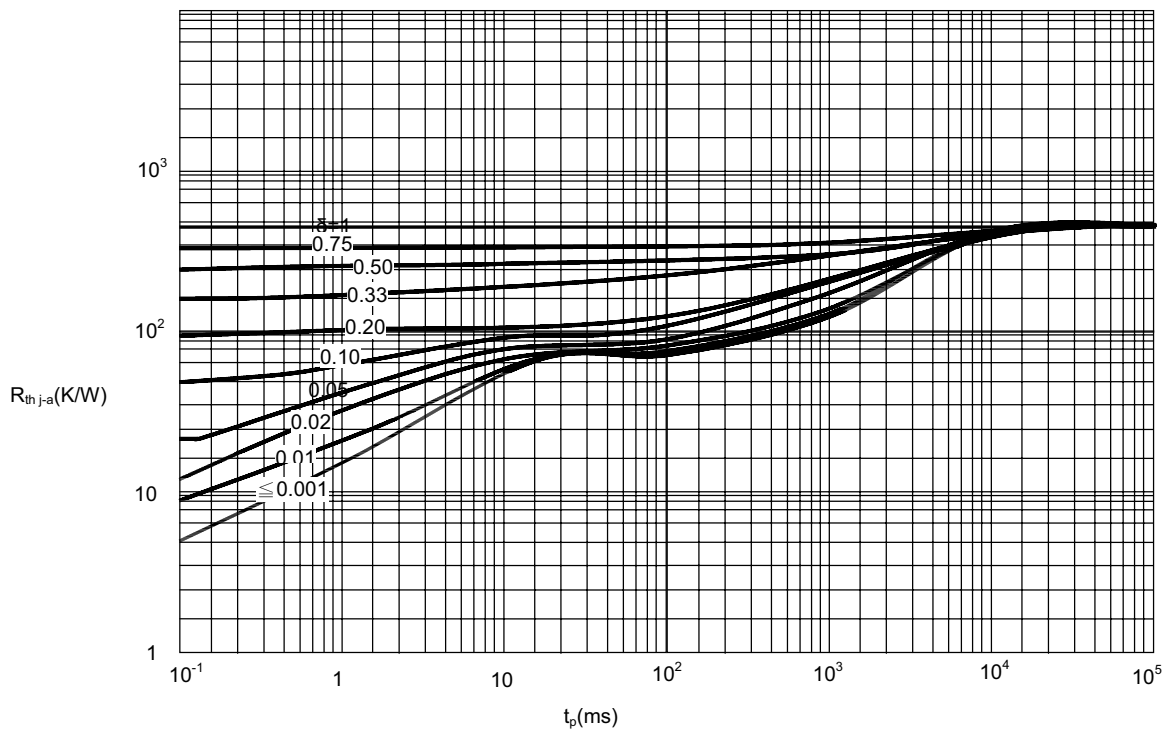


Figure 4  
Thermal resistance from junction to ambient as a function of pulse duration



## Ordering Information :

| Device         | Packing                      |
|----------------|------------------------------|
| Part Number-TP | Tape&Reel: 10Kpcs/Reel       |
| Part Number-AP | Ammo Packing: 5Kpcs/Ammo Box |
| Part Number-BP | Bulk: 100Kpcs/Carton         |

### \*\*\*IMPORTANT NOTICE\*\*\*

**Micro Commercial Components Corp.** reserves the right to make changes without further notice to any product herein to make corrections, modifications , enhancements , improvements , or other changes . **Micro Commercial Components Corp .** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights ,nor the rights of others . The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp .** and all the companies whose products are represented on our website, harmless against all damages.

### \*\*\*LIFE SUPPORT\*\*\*

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

### \*\*\*CUSTOMER AWARENESS\*\*\*

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9