

**CMSZ5221B THRU CMSZ5267B**

**SURFACE MOUNT  
SILICON ZENER DIODE  
275mW, 2.4 THRU 75 VOLTS  
5% TOLERANCE**

**SUPERmini™****SOT-323 CASE**• Device is **Halogen Free** by design**MAXIMUM RATINGS:** ( $T_A=25^\circ\text{C}$ )

Power Dissipation

Operating and Storage Junction Temperature

Thermal Resistance

**SYMBOL** $P_D$  $T_J, T_{stg}$  $\Theta_{JA}$ 

275

-65 to +150

455

**UNITS**

mW

 $^\circ\text{C}$  $^\circ\text{C/W}$ 

**MARKING CODE: SEE MARKING CODES ON  
ELECTRICAL CHARACTERISTICS TABLE**

**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$ )  $V_F=0.9\text{V MAX @ } I_F=10\text{mA}$  (for all types)

| TYPE      | ZENER VOLTAGE  |          |          | TEST<br>CURRENT<br>$I_{ZT}$ | MAXIMUM<br>ZENER<br>IMPEDANCE<br>$Z_{ZT} @ I_{ZT}$ | MAXIMUM<br>ZENER<br>IMPEDANCE |      | MAXIMUM<br>REVERSE<br>CURRENT |     | MAXIMUM<br>TEMPERATURE<br>COEFFICIENT<br>$\Theta V_Z$ | MARKING<br>CODE |
|-----------|----------------|----------|----------|-----------------------------|----------------------------------------------------|-------------------------------|------|-------------------------------|-----|-------------------------------------------------------|-----------------|
|           | $V_Z @ I_{ZT}$ |          |          |                             |                                                    | $Z_{ZK} @ I_{ZK}$             |      | $I_R @ V_R$                   |     |                                                       |                 |
|           | MIN<br>V       | NOM<br>V | MAX<br>V |                             |                                                    | $\Omega$                      | mA   | $\mu A$                       | V   |                                                       |                 |
| CMSZ5221B | 2.280          | 2.4      | 2.520    | 20                          | 30                                                 | 1200                          | 0.25 | 100                           | 1.0 | -0.085                                                | 8A1             |
| CMSZ5222B | 2.375          | 2.5      | 2.625    | 20                          | 30                                                 | 1250                          | 0.25 | 100                           | 1.0 | -0.085                                                | 8B1             |
| CMSZ5223B | 2.565          | 2.7      | 2.835    | 20                          | 30                                                 | 1300                          | 0.25 | 75                            | 1.0 | -0.080                                                | 8C1             |
| CMSZ5224B | 2.660          | 2.8      | 2.940    | 20                          | 30                                                 | 1400                          | 0.25 | 75                            | 1.0 | -0.080                                                | 8D1             |
| CMSZ5225B | 2.850          | 3.0      | 3.150    | 20                          | 29                                                 | 1600                          | 0.25 | 50                            | 1.0 | -0.075                                                | 8E1             |
| CMSZ5226B | 3.135          | 3.3      | 3.465    | 20                          | 28                                                 | 1600                          | 0.25 | 25                            | 1.0 | -0.070                                                | 8AC             |
| CMSZ5227B | 3.420          | 3.6      | 3.780    | 20                          | 24                                                 | 1700                          | 0.25 | 15                            | 1.0 | -0.065                                                | 8BC             |
| CMSZ5228B | 3.705          | 3.9      | 4.095    | 20                          | 23                                                 | 1900                          | 0.25 | 10                            | 1.0 | -0.060                                                | 8CC             |
| CMSZ5229B | 4.085          | 4.3      | 4.515    | 20                          | 22                                                 | 2000                          | 0.25 | 5.0                           | 1.0 | $\pm 0.055$                                           | 8DC             |
| CMSZ5230B | 4.465          | 4.7      | 4.935    | 20                          | 19                                                 | 1900                          | 0.25 | 5.0                           | 2.0 | $\pm 0.030$                                           | 8EC             |
| CMSZ5231B | 4.845          | 5.1      | 5.335    | 20                          | 17                                                 | 1600                          | 0.25 | 5.0                           | 2.0 | $\pm 0.030$                                           | 8FC             |
| CMSZ5232B | 5.320          | 5.6      | 5.880    | 20                          | 11                                                 | 1600                          | 0.25 | 5.0                           | 3.0 | +0.038                                                | 8GC             |
| CMSZ5233B | 5.700          | 6.0      | 6.300    | 20                          | 7.0                                                | 1600                          | 0.25 | 5.0                           | 3.5 | +0.038                                                | 8HC             |
| CMSZ5234B | 5.890          | 6.2      | 6.510    | 20                          | 7.0                                                | 1000                          | 0.25 | 3.0                           | 4.0 | +0.045                                                | 8JC             |
| CMSZ5235B | 6.460          | 6.8      | 7.140    | 20                          | 5.0                                                | 750                           | 0.25 | 3.0                           | 5.0 | +0.050                                                | 8KC             |
| CMSZ5236B | 7.125          | 7.5      | 7.875    | 20                          | 6.0                                                | 500                           | 0.25 | 3.0                           | 6.0 | +0.058                                                | 8LC             |
| CMSZ5237B | 7.790          | 8.2      | 8.610    | 20                          | 8.0                                                | 500                           | 0.25 | 3.0                           | 6.5 | +0.062                                                | 8MC             |
| CMSZ5238B | 8.265          | 8.7      | 9.135    | 20                          | 8.0                                                | 600                           | 0.25 | 3.0                           | 6.5 | +0.065                                                | 8NC             |
| CMSZ5239B | 8.645          | 9.1      | 9.555    | 20                          | 10                                                 | 600                           | 0.25 | 3.0                           | 7.0 | +0.068                                                | 8PC             |
| CMSZ5240B | 9.500          | 10       | 10.50    | 20                          | 17                                                 | 600                           | 0.25 | 3.0                           | 8.0 | +0.075                                                | 8QC             |
| CMSZ5241B | 10.45          | 11       | 11.55    | 20                          | 22                                                 | 600                           | 0.25 | 2.0                           | 8.4 | +0.076                                                | 8RC             |
| CMSZ5242B | 11.40          | 12       | 12.60    | 20                          | 30                                                 | 600                           | 0.25 | 1.0                           | 9.1 | +0.077                                                | 8SC             |
| CMSZ5243B | 12.35          | 13       | 13.65    | 9.5                         | 13                                                 | 600                           | 0.25 | 0.5                           | 9.9 | +0.079                                                | 8TC             |
| CMSZ5244B | 13.30          | 14       | 14.70    | 9.0                         | 15                                                 | 600                           | 0.25 | 0.1                           | 10  | +0.082                                                | 8UC             |

R5 (12-December 2012)



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**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMSZ5221B series silicon Zener diode is a high quality voltage regulator for use in industrial, commercial, entertainment and computer applications.

# CMSZ5221B THRU CMSZ5267B

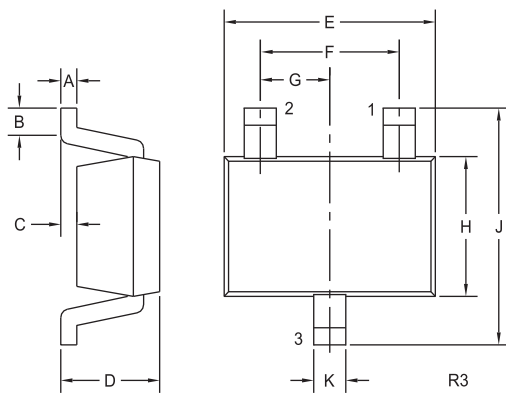
**SURFACE MOUNT  
SILICON ZENER DIODE  
275mW, 2.4 THRU 75 VOLTS  
5% TOLERANCE**



**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^{\circ}\text{C}$ )  $V_F=0.9\text{V MAX @ } I_F=10\text{mA}$  (for all types)

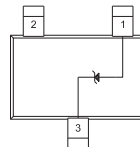
| TYPE      | ZENER VOLTAGE                    |          |          | TEST<br>CURRENT | MAXIMUM<br>ZENER<br>IMPEDANCE | MAXIMUM<br>ZENER<br>IMPEDANCE |                                   | MAXIMUM<br>REVERSE<br>CURRENT     |                                 | MAXIMUM<br>TEMPERATURE<br>COEFFICIENT | MARKING<br>CODE |
|-----------|----------------------------------|----------|----------|-----------------|-------------------------------|-------------------------------|-----------------------------------|-----------------------------------|---------------------------------|---------------------------------------|-----------------|
|           | V <sub>Z</sub> @ I <sub>ZT</sub> |          |          |                 |                               | I <sub>ZT</sub>               | Z <sub>ZT</sub> @ I <sub>ZT</sub> | Z <sub>ZK</sub> @ I <sub>ZK</sub> | I <sub>R</sub> @ V <sub>R</sub> |                                       |                 |
|           | MIN<br>V                         | NOM<br>V | MAX<br>V |                 |                               | mA                            | Ω                                 | Ω                                 | mA                              | μA                                    |                 |
| CMSZ5245B | 14.25                            | 15       | 15.75    | 8.5             | 16                            | 600                           | 0.25                              | 0.1                               | 11                              | +0.082                                | 8VC             |
| CMSZ5246B | 15.20                            | 16       | 16.80    | 7.8             | 17                            | 600                           | 0.25                              | 0.1                               | 12                              | +0.083                                | 8WC             |
| CMSZ5247B | 16.15                            | 17       | 17.85    | 7.4             | 19                            | 600                           | 0.25                              | 0.1                               | 13                              | +0.084                                | 8XC             |
| CMSZ5248B | 17.10                            | 18       | 18.90    | 7.0             | 21                            | 600                           | 0.25                              | 0.1                               | 14                              | +0.085                                | 8YC             |
| CMSZ5249B | 18.05                            | 19       | 19.95    | 6.6             | 23                            | 600                           | 0.25                              | 0.1                               | 14                              | +0.086                                | 8ZC             |
| CMSZ5250B | 19                               | 20       | 21       | 6.2             | 25                            | 600                           | 0.25                              | 0.1                               | 15                              | +0.086                                | 1A8             |
| CMSZ5251B | 20.90                            | 22       | 23.10    | 5.6             | 29                            | 600                           | 0.25                              | 0.1                               | 17                              | +0.087                                | 1B8             |
| CMSZ5252B | 22.80                            | 24       | 25.20    | 5.2             | 33                            | 600                           | 0.25                              | 0.1                               | 18                              | +0.088                                | 1C8             |
| CMSZ5253B | 23.75                            | 25       | 26.25    | 5.0             | 35                            | 600                           | 0.25                              | 0.1                               | 19                              | +0.089                                | 1D8             |
| CMSZ5254B | 25.65                            | 27       | 28.35    | 4.6             | 41                            | 600                           | 0.25                              | 0.1                               | 21                              | +0.090                                | 1E8             |
| CMSZ5255B | 26.60                            | 28       | 29.40    | 4.5             | 44                            | 600                           | 0.25                              | 0.1                               | 21                              | +0.091                                | 1F8             |
| CMSZ5256B | 28.50                            | 30       | 31.50    | 4.2             | 49                            | 600                           | 0.25                              | 0.1                               | 23                              | +0.091                                | 1G8             |
| CMSZ5257B | 31.35                            | 33       | 34.65    | 3.8             | 58                            | 700                           | 0.25                              | 0.1                               | 25                              | +0.092                                | 1H8             |
| CMSZ5258B | 34.20                            | 36       | 37.80    | 3.4             | 70                            | 700                           | 0.25                              | 0.1                               | 27                              | +0.093                                | 1J8             |
| CMSZ5259B | 37.05                            | 39       | 40.95    | 3.2             | 80                            | 800                           | 0.25                              | 0.1                               | 30                              | +0.094                                | 1K8             |
| CMSZ5260B | 40.85                            | 43       | 45.15    | 3.0             | 93                            | 900                           | 0.25                              | 0.1                               | 33                              | +0.095                                | 1L8             |
| CMSZ5261B | 44.65                            | 47       | 49.35    | 2.7             | 105                           | 1000                          | 0.25                              | 0.1                               | 36                              | +0.095                                | 1M8             |
| CMSZ5262B | 48.45                            | 51       | 53.55    | 2.5             | 125                           | 1100                          | 0.25                              | 0.1                               | 39                              | +0.096                                | 1N8             |
| CMSZ5263B | 53.20                            | 56       | 58.80    | 2.2             | 150                           | 1300                          | 0.25                              | 0.1                               | 43                              | +0.096                                | 1P8             |
| CMSZ5264B | 57.00                            | 60       | 63.00    | 2.1             | 170                           | 1400                          | 0.25                              | 0.1                               | 46                              | +0.097                                | 1R8             |
| CMSZ5265B | 58.90                            | 62       | 65.10    | 2.0             | 185                           | 1400                          | 0.25                              | 0.1                               | 47                              | +0.097                                | 1S8             |
| CMSZ5266B | 64.60                            | 68       | 71.40    | 1.8             | 230                           | 1600                          | 0.25                              | 0.1                               | 52                              | +0.097                                | 1T8             |
| CMSZ5267B | 71.25                            | 75       | 78.75    | 1.7             | 270                           | 1700                          | 0.25                              | 0.1                               | 56                              | +0.098                                | 1U8             |

## SOT-323 CASE - MECHANICAL OUTLINE



| DIMENSIONS |        |       |             |      |
|------------|--------|-------|-------------|------|
| SYMBOL     | INCHES |       | MILLIMETERS |      |
|            | MIN    | MAX   | MIN         | MAX  |
| A          | 0.002  | 0.008 | 0.05        | 0.20 |
| B          | 0.004  | -     | 0.10        | -    |
| C          | -      | 0.004 | -           | 0.10 |
| D          | 0.031  | 0.043 | 0.80        | 1.10 |
| E          | 0.071  | 0.087 | 1.80        | 2.20 |
| F          | 0.051  |       | 1.30        |      |
| G          | 0.026  |       | 0.65        |      |
| H          | 0.045  | 0.053 | 1.15        | 1.35 |
| J          | 0.079  | 0.087 | 2.00        | 2.20 |
| K          | 0.008  | 0.016 | 0.20        | 0.40 |

SOT-323 (REV: R3)



**LEAD CODE:**  
1) Anode  
2) No Connection  
3) Cathode

R5 (12-December 2012)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### CONTACT US

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