

# CMZ5919BPQ THRU CMZ5945BPQ

**SURFACE MOUNT SILICON  
AUTOMOTIVE ZENER DIODES  
3.0 WATT, 5.6 THRU 68 VOLT  
±5% TOLERANCE**



www.centrasemi.com

## DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMZ5913BPQ series surface mount silicon Zener diodes are highly reliable components designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications. Manufactured and qualified to AEC-Q101.

## MARKING: SEE MARKING CODE ON ELECTRICAL CHARACTERISTIC TABLE



**SMB CASE**

## FEATURES:

- High reliability
- “C” bend construction provides strain relief when mounted on pc board

## MAXIMUM RATINGS: (T<sub>A</sub>=25°C)

Power Dissipation (T<sub>L</sub>=75°C)

Power Dissipation (Note 1)

Operating and Storage Junction Temperature

Thermal Resistance

Thermal Resistance (Note 1)

Note 1: Mounted on 2 inch square FR-4 PCB with minimum recommended SMB copper pad area.

## SYMBOL

|                                   |             |
|-----------------------------------|-------------|
| P <sub>D</sub>                    | 3.0         |
| P <sub>D</sub>                    | 1.0         |
| T <sub>J</sub> , T <sub>stg</sub> | -65 to +150 |
| θ <sub>JL</sub>                   | 25          |
| θ <sub>JA</sub>                   | 125         |

## UNITS

|      |
|------|
| W    |
| W    |
| °C   |
| °C/W |
| °C/W |

## ELECTRICAL CHARACTERISTICS: (T<sub>A</sub>=25°C) V<sub>F</sub>=1.5V MAX @ I<sub>F</sub>=200mA (for all types)

| TYPE       | ZENER VOLTAGE<br>V <sub>Z</sub> @ I <sub>ZT</sub> |     |       | TEST CURRENT    | MAXIMUM ZENER IMPEDANCE           |                                   |                                 | MAXIMUM REVERSE CURRENT |                 | MAXIMUM ZENER CURRENT<br>(T <sub>L</sub> = 75°C) | MARKING CODE |
|------------|---------------------------------------------------|-----|-------|-----------------|-----------------------------------|-----------------------------------|---------------------------------|-------------------------|-----------------|--------------------------------------------------|--------------|
|            | MIN                                               | NOM | MAX   | 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> |                         | I <sub>ZM</sub> |                                                  |              |
|            | V                                                 | V   | V     | mA              | Ω                                 | Ω                                 | μA                              | V                       | mA              |                                                  |              |
| CMZ5919BPQ | 5.320                                             | 5.6 | 5.880 | 66.9            | 2.0                               | 250                               | 1.0                             | 5.0                     | 3.0             | 267                                              | C5919BP      |
| CMZ5920BPQ | 5.890                                             | 6.2 | 6.510 | 60.5            | 2.0                               | 200                               | 1.0                             | 5.0                     | 4.0             | 241                                              | C5920BP      |
| CMZ5921BPQ | 6.460                                             | 6.8 | 7.140 | 55.1            | 2.5                               | 200                               | 1.0                             | 5.0                     | 5.2             | 221                                              | C5921BP      |
| CMZ5922BPQ | 7.125                                             | 7.5 | 7.875 | 50.0            | 3.0                               | 400                               | 0.5                             | 5.0                     | 6.0             | 200                                              | C5922BP      |
| CMZ5923BPQ | 7.790                                             | 8.2 | 8.610 | 45.7            | 3.5                               | 400                               | 0.5                             | 5.0                     | 6.5             | 183                                              | C5923BP      |
| CMZ5924BPQ | 8.645                                             | 9.1 | 9.555 | 41.2            | 4.0                               | 500                               | 0.5                             | 5.0                     | 7.0             | 165                                              | C5924BP      |
| CMZ5925BPQ | 9.500                                             | 10  | 10.50 | 37.5            | 4.5                               | 500                               | 0.25                            | 5.0                     | 8.0             | 150                                              | C5925BP      |
| CMZ5926BPQ | 10.45                                             | 11  | 11.55 | 34.1            | 5.5                               | 550                               | 0.25                            | 1.0                     | 8.4             | 136                                              | C5926BP      |
| CMZ5927BPQ | 11.40                                             | 12  | 12.60 | 31.2            | 6.5                               | 550                               | 0.25                            | 1.0                     | 9.1             | 125                                              | C5927BP      |
| CMZ5928BPQ | 12.35                                             | 13  | 13.65 | 28.8            | 7.0                               | 550                               | 0.25                            | 1.0                     | 9.9             | 115                                              | C5928BP      |
| CMZ5929BPQ | 14.25                                             | 15  | 15.75 | 25.0            | 9.0                               | 600                               | 0.25                            | 1.0                     | 11.4            | 100                                              | C5929BP      |
| CMZ5930BPQ | 15.20                                             | 16  | 16.80 | 23.4            | 10                                | 600                               | 0.25                            | 1.0                     | 12.2            | 94                                               | C5930BP      |
| CMZ5931BPQ | 17.10                                             | 18  | 18.90 | 20.8            | 12                                | 650                               | 0.25                            | 1.0                     | 13.7            | 83                                               | C5931BP      |
| CMZ5932BPQ | 19.00                                             | 20  | 21.00 | 18.7            | 14                                | 650                               | 0.25                            | 1.0                     | 15.2            | 75                                               | C5932BP      |
| CMZ5933BPQ | 20.90                                             | 22  | 23.10 | 17.0            | 17.5                              | 650                               | 0.25                            | 1.0                     | 16.7            | 68                                               | C5933BP      |
| CMZ5934BPQ | 22.80                                             | 24  | 25.20 | 15.6            | 19                                | 700                               | 0.25                            | 1.0                     | 18.2            | 63                                               | C5934BP      |
| CMZ5935BPQ | 25.65                                             | 27  | 28.35 | 13.9            | 23                                | 700                               | 0.25                            | 1.0                     | 20.6            | 56                                               | C5935BP      |

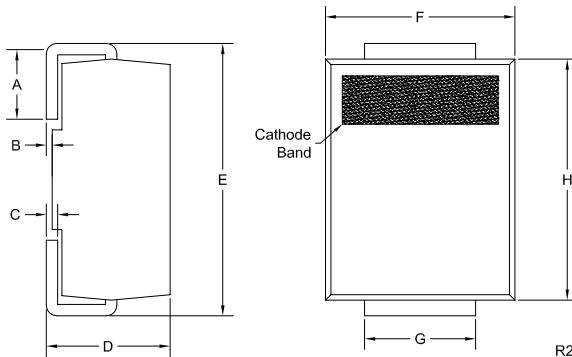
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**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^{\circ}\text{C}$ )  $V_F=1.5\text{V MAX @ } I_F=200\text{mA}$  (for all types)

| TYPE       | ZENER VOLTAGE<br>V <sub>Z</sub> @ I <sub>ZT</sub> |     |       | TEST CURRENT    | MAXIMUM ZENER IMPEDANCE           |                                   |                                 | MAXIMUM REVERSE CURRENT |                 | MAXIMUM ZENER CURRENT<br>(T <sub>L</sub> =75°C) | MARKING CODE |
|------------|---------------------------------------------------|-----|-------|-----------------|-----------------------------------|-----------------------------------|---------------------------------|-------------------------|-----------------|-------------------------------------------------|--------------|
|            | MIN                                               | NOM | MAX   | 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> |                         | I <sub>ZM</sub> |                                                 |              |
|            | V                                                 | V   | V     | mA              | Ω                                 | Ω                                 | μA                              | V                       | mA              |                                                 |              |
|            |                                                   |     |       |                 |                                   |                                   |                                 |                         |                 |                                                 |              |
| CMZ5936BPQ | 28.50                                             | 30  | 31.50 | 12.5            | 26                                | 750                               | 0.25                            | 1.0                     | 22.8            | 50                                              | C5936BP      |
| CMZ5937BPQ | 31.35                                             | 33  | 34.65 | 11.4            | 33                                | 800                               | 0.25                            | 1.0                     | 25.1            | 45                                              | C5937BP      |
| CMZ5938BPQ | 34.20                                             | 36  | 37.80 | 10.4            | 38                                | 850                               | 0.25                            | 1.0                     | 27.4            | 42                                              | C5938BP      |
| CMZ5939BPQ | 37.05                                             | 39  | 40.95 | 9.6             | 45                                | 900                               | 0.25                            | 1.0                     | 29.7            | 38                                              | C5939BP      |
| CMZ5940BPQ | 40.85                                             | 43  | 45.15 | 8.7             | 53                                | 950                               | 0.25                            | 1.0                     | 32.7            | 35                                              | C5940BP      |
| CMZ5941BPQ | 44.65                                             | 47  | 49.35 | 8.0             | 67                                | 1000                              | 0.25                            | 1.0                     | 35.8            | 32                                              | C5941BP      |
| CMZ5942BPQ | 48.45                                             | 51  | 53.55 | 7.3             | 70                                | 1100                              | 0.25                            | 1.0                     | 38.8            | 29                                              | C5942BP      |
| CMZ5943BPQ | 53.20                                             | 56  | 58.80 | 6.7             | 86                                | 1300                              | 0.25                            | 1.0                     | 42.6            | 27                                              | C5943BP      |
| CMZ5944BPQ | 58.90                                             | 62  | 65.10 | 6.0             | 100                               | 1500                              | 0.25                            | 1.0                     | 47.1            | 24                                              | C5944BP      |
| CMZ5945BPQ | 64.60                                             | 68  | 71.40 | 5.5             | 120                               | 1700                              | 0.25                            | 1.0                     | 51.7            | 22                                              | C5945BP      |

**SMB CASE - MECHANICAL OUTLINE**

| DIMENSIONS |        |       |             |      |
|------------|--------|-------|-------------|------|
| SYMBOL     | INCHES |       | MILLIMETERS |      |
|            | MIN    | MAX   | MIN         | MAX  |
| A          | 0.030  | 0.060 | 0.76        | 1.52 |
| B          | 0.000  | 0.008 | 0.00        | 0.20 |
| C          | 0.006  | 0.012 | 0.15        | 0.30 |
| D          | 0.086  | 0.096 | 2.18        | 2.44 |
| E          | 0.200  | 0.220 | 5.08        | 5.59 |
| F          | 0.130  | 0.150 | 3.30        | 3.81 |
| G          | 0.077  | 0.083 | 1.96        | 2.11 |
| H          | 0.160  | 0.191 | 4.06        | 4.85 |

SMB (REV: R2)

R1 (11-March 2025)

## 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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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

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