

## Zener Diodes

## BZG03C - SERIES

### Features

- High reliability
- Voltage range 10 V to 270 V
- High surge current rating
- RoHS compliant with Halogen-free



### Mechanical Data

- Case: SMA molded plastic
- Molding compound, UL flammability classification rating 94V-0
- Polarity: Color band denotes cathode end

### Maximum Ratings (@T<sub>A</sub> = 25°C unless otherwise specified)

| Parameter  | Symbol           | Value      | Unit |
|--|------------------|------------|------|
| Power dissipation at T <sub>tp</sub> = 100°C                           | P <sub>tot</sub> | 3          | W    |
| Forward voltage @ I <sub>F</sub> = 500mA                               | V <sub>F</sub>   | 1.2        | V    |
| Maximum Thermal Resistance Junction to Ambient                         | R <sub>θJA</sub> | 150        | K/W  |
| Peak reverse power dissipation(non-repetitive)<br>tp=100μs square wave | P <sub>ZSM</sub> | 600        | W    |
| Junction temperature   | T <sub>J</sub>   | -55 ~ +150 | °C   |
| Storage temperature range  | T <sub>STG</sub> | -55 ~ +150 | °C   |

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**Electrical Characteristics** (@T<sub>A</sub> = 25°C unless otherwise specified)

| Type     | Device marking code | Zener voltage range V <sub>Z</sub> |     |      | Dynamic resistance |     |     | Temperature coefficient of zener |      | Reverse leakage current |     |                                  |   |
|----------|---------------------|------------------------------------|-----|------|--------------------|-----|-----|----------------------------------|------|-------------------------|-----|----------------------------------|---|
|          |                     |                                    |     |      |                    |     |     |                                  |      |                         |     | r <sub>ZJ</sub> @I <sub>ZT</sub> |   |
|          |                     | V                                  | V   | V    | Ω                  | Ω   | m A | %/K                              | %/K  |                         |     | uA                               | V |
|          |                     | Min                                | Typ | Max  | Typ                | Max |     | Typ                              | Max  |                         |     | Max                              |   |
| BZG03C10 | G10                 | 9.4                                | 10  | 10.6 | 2.0                | 4.0 | 50  | 0.05                             | 0.09 | 10                      | 7.5 |                                  |   |
| BZG03C11 | G11                 | 10.4                               | 11  | 11.6 | 4.0                | 7.0 | 50  | 0.05                             | 0.10 | 4.0                     | 8.2 |                                  |   |
| BZG03C12 | G12                 | 11.4                               | 12  | 12.7 | 4.0                | 7.0 | 50  | 0.05                             | 0.10 | 3.0                     | 9.1 |                                  |   |
| BZG03C13 | G13                 | 12.4                               | 13  | 14.1 | 5.0                | 10  | 50  | 0.05                             | 0.10 | 2.0                     | 10  |                                  |   |
| BZG03C15 | G15                 | 13.8                               | 15  | 15.6 | 5.0                | 10  | 50  | 0.05                             | 0.10 | 1.0                     | 11  |                                  |   |
| BZG03C16 | G16                 | 15.3                               | 16  | 17.1 | 6.0                | 15  | 25  | 0.06                             | 0.11 | 1.0                     | 12  |                                  |   |
| BZG03C18 | G18                 | 16.8                               | 18  | 19.1 | 6.0                | 15  | 25  | 0.06                             | 0.11 | 1.0                     | 13  |                                  |   |
| BZG03C20 | G20                 | 18.8                               | 20  | 21.2 | 6.0                | 15  | 25  | 0.06                             | 0.11 | 1.0                     | 15  |                                  |   |
| BZG03C22 | G22                 | 20.8                               | 22  | 23.3 | 6.0                | 15  | 25  | 0.06                             | 0.11 | 1.0                     | 16  |                                  |   |
| BZG03C24 | G24                 | 22.8                               | 24  | 25.6 | 7.0                | 15  | 25  | 0.06                             | 0.11 | 1.0                     | 18  |                                  |   |
| BZG03C27 | G27                 | 25.1                               | 27  | 28.9 | 7.0                | 15  | 25  | 0.06                             | 0.11 | 1.0                     | 20  |                                  |   |
| BZG03C30 | G30                 | 28                                 | 30  | 32   | 8.0                | 15  | 25  | 0.06                             | 0.11 | 1.0                     | 22  |                                  |   |
| BZG03C33 | G33                 | 31                                 | 33  | 35   | 8.0                | 15  | 25  | 0.06                             | 0.11 | 1.0                     | 24  |                                  |   |
| BZG03C36 | G36                 | 34                                 | 36  | 38   | 21                 | 40  | 10  | 0.06                             | 0.11 | 1.0                     | 27  |                                  |   |
| BZG03C39 | G39                 | 37                                 | 39  | 41   | 21                 | 40  | 10  | 0.06                             | 0.11 | 1.0                     | 30  |                                  |   |
| BZG03C43 | G43                 | 40                                 | 43  | 46   | 24                 | 45  | 10  | 0.07                             | 0.12 | 1.0                     | 33  |                                  |   |
| BZG03C47 | G47                 | 44                                 | 47  | 50   | 24                 | 45  | 10  | 0.07                             | 0.12 | 1.0                     | 36  |                                  |   |
| BZG03C51 | G51                 | 48                                 | 51  | 54   | 25                 | 60  | 10  | 0.07                             | 0.12 | 1.0                     | 39  |                                  |   |
| BZG03C56 | G56                 | 52                                 | 56  | 60   | 25                 | 60  | 10  | 0.07                             | 0.12 | 1.0                     | 43  |                                  |   |
| BZG03C62 | G62                 | 58                                 | 62  | 66   | 25                 | 80  | 10  | 0.08                             | 0.13 | 1.0                     | 47  |                                  |   |
| BZG03C68 | G68                 | 64                                 | 68  | 72   | 25                 | 80  | 10  | 0.08                             | 0.13 | 1.0                     | 51  |                                  |   |
| BZG03C75 | G75                 | 70                                 | 75  | 79   | 30                 | 100 | 10  | 0.08                             | 0.13 | 1.0                     | 56  |                                  |   |
| BZG03C82 | G82                 | 77                                 | 82  | 87   | 30                 | 100 | 10  | 0.08                             | 0.13 | 1.0                     | 62  |                                  |   |
| BZG03C91 | G91                 | 85                                 | 91  | 96   | 60                 | 200 | 5.0 | 0.09                             | 0.13 | 1.0                     | 68  |                                  |   |

## Zener Diodes

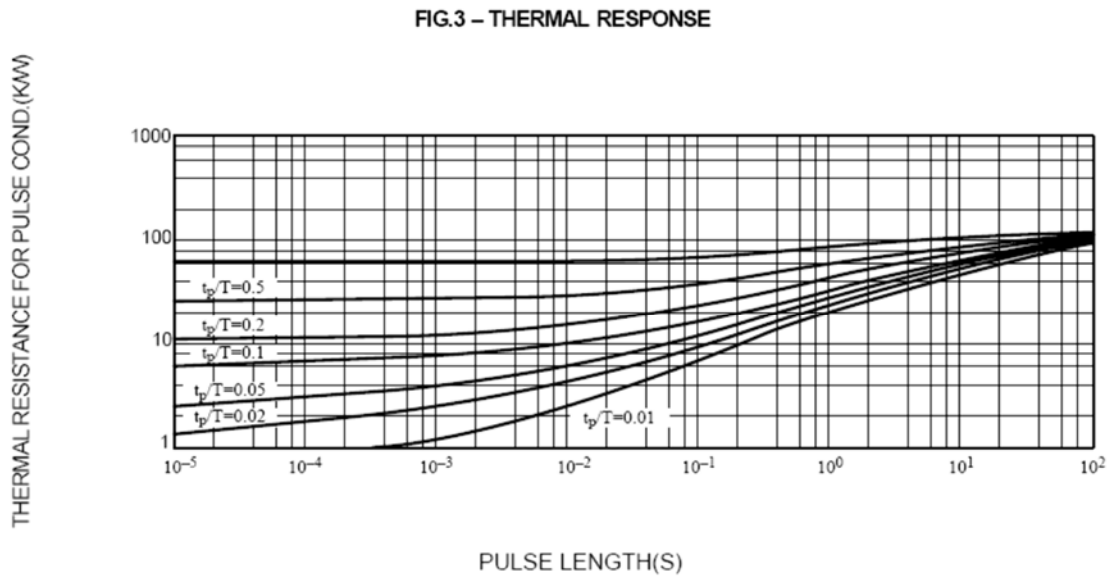
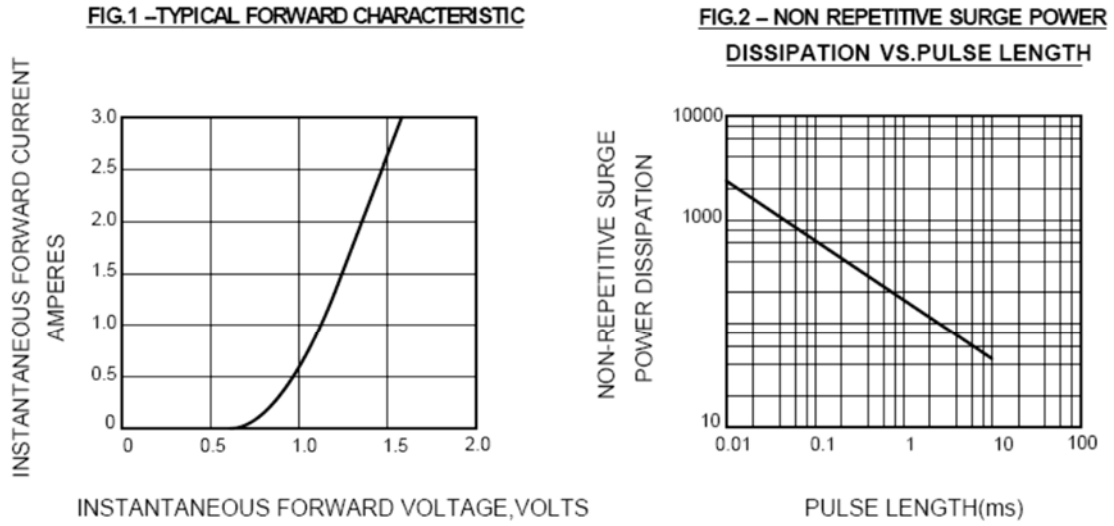
## BZG03C - SERIES

| Type      | Device marking code | Zener voltage range<br>$V_z$ |     |     | Dynamic resistance |          |     | Temperature coefficient of zener |      | Reverse leakage current |     |
|-----------|---------------------|------------------------------|-----|-----|--------------------|----------|-----|----------------------------------|------|-------------------------|-----|
|           |                     |                              |     |     |                    |          |     | $r_{zj}@I_{zT}$                  |      |                         |     |
|           |                     | V                            | V   | V   | $\Omega$           | $\Omega$ | m A | %/K                              | %/K  | $\mu$ A                 | V   |
|           |                     | Min                          | Typ | Max | Typ                | Max      |     | Typ                              | Max  | Max                     |     |
| BZG03C100 | G100                | 94                           | 100 | 106 | 60                 | 200      | 5.0 | 0.09                             | 0.13 | 1.0                     | 75  |
| BZG03C110 | G110                | 104                          | 110 | 116 | 80                 | 250      | 5.0 | 0.09                             | 0.13 | 1.0                     | 82  |
| BZG03C120 | G120                | 114                          | 120 | 127 | 80                 | 250      | 5.0 | 0.09                             | 0.13 | 1.0                     | 91  |
| BZG03C130 | G130                | 124                          | 130 | 141 | 110                | 300      | 5.0 | 0.09                             | 0.13 | 1.0                     | 100 |
| BZG03C150 | G150                | 138                          | 150 | 156 | 130                | 300      | 5.0 | 0.09                             | 0.13 | 1.0                     | 110 |
| BZG03C160 | G160                | 158                          | 160 | 171 | 150                | 350      | 5.0 | 0.09                             | 0.13 | 1.0                     | 120 |
| BZG03C180 | G180                | 168                          | 180 | 191 | 180                | 400      | 5.0 | 0.09                             | 0.13 | 1.0                     | 130 |
| BZG03C200 | G200                | 188                          | 200 | 212 | 200                | 500      | 5.0 | 0.09                             | 0.13 | 1.0                     | 150 |
| BZG03C220 | G220                | 208                          | 220 | 233 | 350                | 750      | 2.0 | 0.09                             | 0.13 | 1.0                     | 160 |
| BZG03C240 | G240                | 228                          | 240 | 256 | 400                | 850      | 2.0 | 0.09                             | 0.13 | 1.0                     | 180 |
| BZG03C270 | G270                | 251                          | 270 | 289 | 450                | 1000     | 2.0 | 0.09                             | 0.13 | 1.0                     | 200 |

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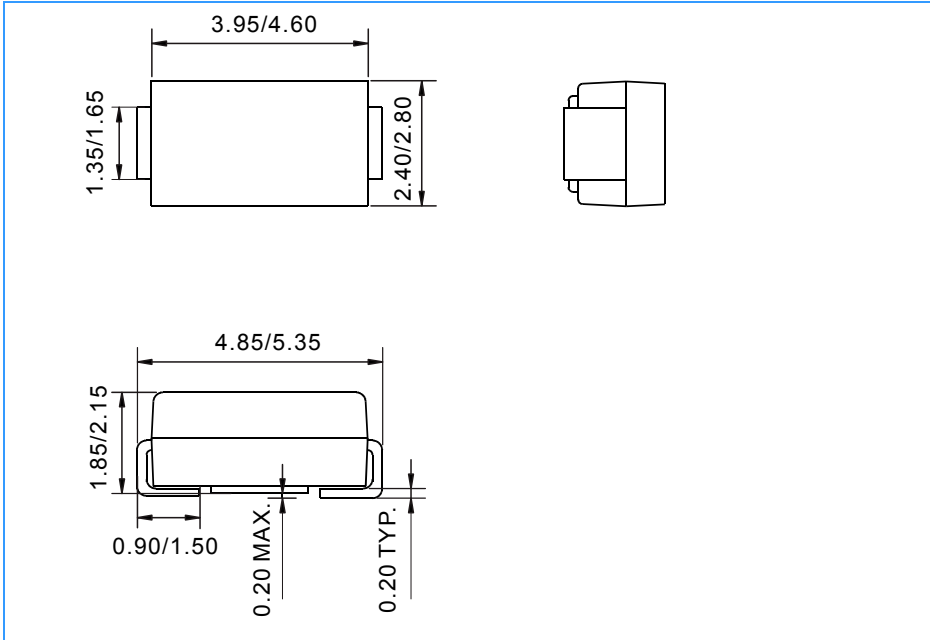
## Ratings and Characteristic Curves (@ $T_A=25^\circ\text{C}$ unless otherwise noted)



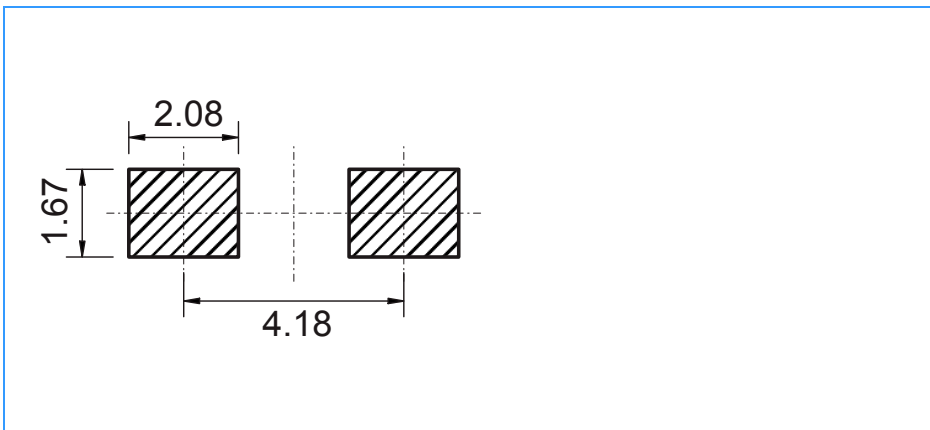
## Zener Diodes

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### Package Outline Dimensions (Unit: mm)



### Mounting Pad Layout (Unit: mm)



### Ordering Information

| Part Number     | Package | Shipping Quantity  |
|-----------------|---------|--------------------|
| BZG03C - SERIES | SMA     | 5000 / Tape & Reel |