# BZG03C Series

Zener Diodes



**$V_Z$ : 3.3 -- 270 V**

**POWER DISSIPATION: 3.0 W**

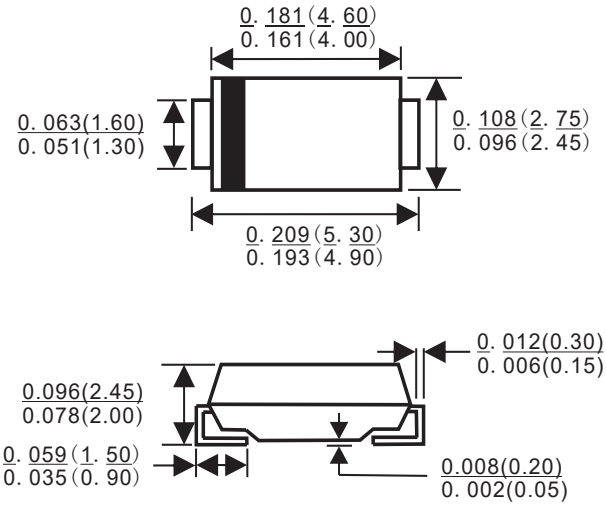
## Features

- ◇ High reliability
- ◇ Voltage range 3.3 V to 270 V
- ◇ Fits onto 5 mm SMD footpads
- ◇ Wave and reflow solderable
  Glass passivated junction

## Mechanical Data

- ◇ Case:JEDEC DO-214AC(SMA)
- ◇ Polarity: Color band denotes cathods end
- ◇ Weight: 0.002 ounces, 0.064 grams
- ◇ Mounting position: any

**DO-214AC(SMA)**




Dimensions in inches and(millimeters)

## Maximum Ratings and Thermal Characteristics

($T_A$=25℃ unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Power dissipation at $T_{tp}$=100℃ | $P_{tot}$ | 3.0 | W |
| Forward voltage @$I_F$=500mA | $V_F$ | 1.2 | V |
| Maximum thermal resistance junction to ambient | $R_{\theta JA}$ | 150 | K/W |
| Peak reverse power dissipation(non-repetitive) tp=100μs square wave | $P_{ZSM}$ | 600 | W |
| Junction temperature | $T_J$ | -65 to +150 | ℃ |
| Storage temperature range | $T_{STG}$ | -65 to +150 | ℃ |

# BZG03CSeries

Zener Diodes

## ELECTRICAL CHARACTERISTICS($T_A$=25℃)

| Type | Device marking code | Zener voltage range $V_Z$ | | | Dynamic resistance | | | Temperature coefficient of zener voltage | | Reverse leakage current $I_R$@$V_R$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | $r_{zj}$@$I_{ZT}$ | | $I_{ZT}$ | TK$_{VZ}$@$I_{ZT}$ | | | |
| | | V | V | V | Ω | Ω | m A | %/K | %/K | μ A | V |
| | | Min. | Typ. | Max. | Typ. | Max. | | Typ. | Max. | Max. | |
| BZG03C3V3 | G3V3 | 3.1 | 3.3 | 3.5 | 10.0 | 20 | 100 | 0.05 | 0.09 | 40 | 1 |
| BZG03C3V6 | G3V6 | 3.4 | 3.6 | 3.8 | 10.0 | 20 | 100 | 0.05 | 0.09 | 30 | 1 |
| BZG03C3V9 | G3V9 | 3.7 | 3.9 | 4.1 | 7.0 | 15 | 100 | 0.05 | 0.09 | 20 | 1 |
| BZG03C4V3 | G4V3 | 4 | 4.3 | 4.6 | 6.0 | 13 | 100 | 0.05 | 0.09 | 10 | 1 |
| BZG03C4V7 | G4V7 | 4.4 | 4.7 | 5 | 6.0 | 13 | 100 | 0.05 | 0.09 | 10 | 1 |
| BZG03C5V1 | G5V1 | 4.8 | 5.1 | 5.4 | 5.0 | 10 | 100 | 0.05 | 0.09 | 10 | 1.5 |
| BZG03C5V6 | G5V6 | 5.2 | 5.6 | 6 | 4 | 7 | 100 | 0.05 | 0.09 | 10 | 2 |
| BZG03C6V2 | G6V2 | 5.8 | 6.2 | 6.6 | 2.0 | 4 | 100 | 0.05 | 0.09 | 10 | 3 |
| BZG03C6V8 | G6V8 | 6.4 | 6.8 | 7.2 | 2.0 | 3.5 | 100 | 0.05 | 0.09 | 10 | 4 |
| BZG03C7V5 | G7V5 | 7 | 7.5 | 7.9 | 2.0 | 3 | 100 | 0.05 | 0.09 | 10 | 4.5 |
| BZG03C8V2 | G8V2 | 7.7 | 8.2 | 8.7 | 3.0 | 5 | 50 | 0.05 | 0.09 | 10 | 6.2 |
| BZG03C9V1 | G9V1 | 8.5 | 9.1 | 9.6 | 3.0 | 5 | 50 | 0.05 | 0.09 | 10 | 6.8 |
| 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 | 0.09 | 0.13 | 1.0 | 68 |
| BZG03C100 | G100 | 94 | 100 | 106 | 60 | 200 | 5 | 0.09 | 0.13 | 1.0 | 75 |
| BZG03C110 | G110 | 104 | 110 | 116 | 80 | 250 | 5 | 0.09 | 0.13 | 1.0 | 82 |
| BZG03C120 | G120 | 114 | 120 | 127 | 80 | 250 | 5 | 0.09 | 0.13 | 1.0 | 91 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BZG03C130 | G130 | 124 | 130 | 141 | 110 | 300 | 5 | 0.09 | 0.13 | 1.0 | 100 |
| BZG03C150 | G150 | 138 | 150 | 156 | 130 | 300 | 5 | 0.09 | 0.13 | 1.0 | 110 |
| BZG03C160 | G160 | 153 | 160 | 171 | 150 | 350 | 5 | 0.09 | 0.13 | 1.0 | 120 |
| BZG03C180 | LGE N2 | 168 | 180 | 191 | 180 | 400 | 5 | 0.09 | 0.13 | 1.0 | 130 |
| BZG03C200 | G200 | 188 | 200 | 212 | 200 | 500 | 5 | 0.09 | 0.13 | 1.0 | 150 |
| BZG03C220 | G220 | 208 | 220 | 233 | 350 | 750 | 2 | 0.09 | 0.13 | 1.0 | 160 |
| BZG03C240 | G240 | 228 | 240 | 256 | 400 | 850 | 2 | 0.09 | 0.13 | 1.0 | 180 |
| BZG03C270 | G270 | 251 | 270 | 289 | 450 | 1000 | 2 | 0.09 | 0.13 | 1.0 | 200 |

## Ratings AND Charactieristic Curves

**FIG.1 –TYPICAL FORWARD CHARACTERISTIC**

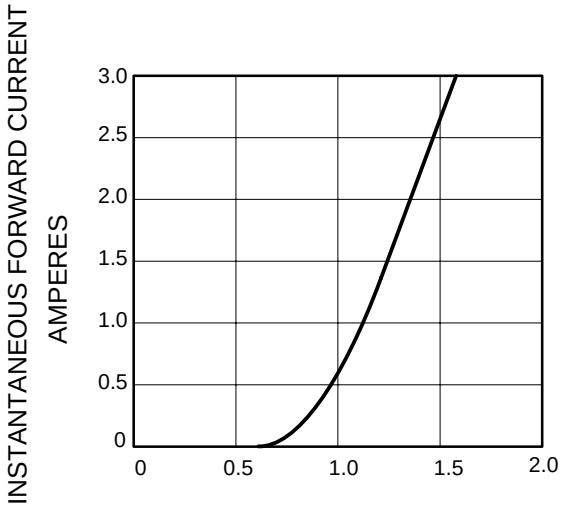



**FIG.2 – NON REPETITIVE SURGE POWER DISSIPATION VS.PULSE LENGTH**

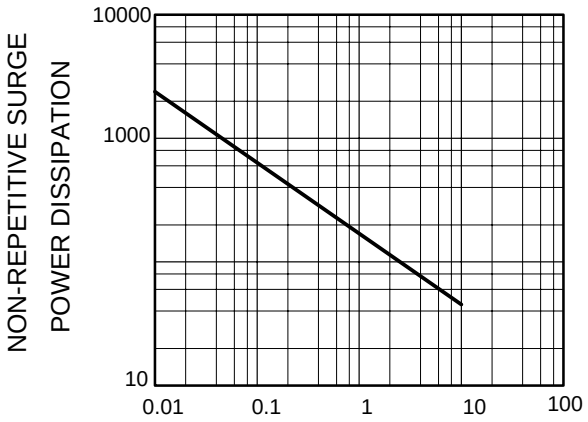
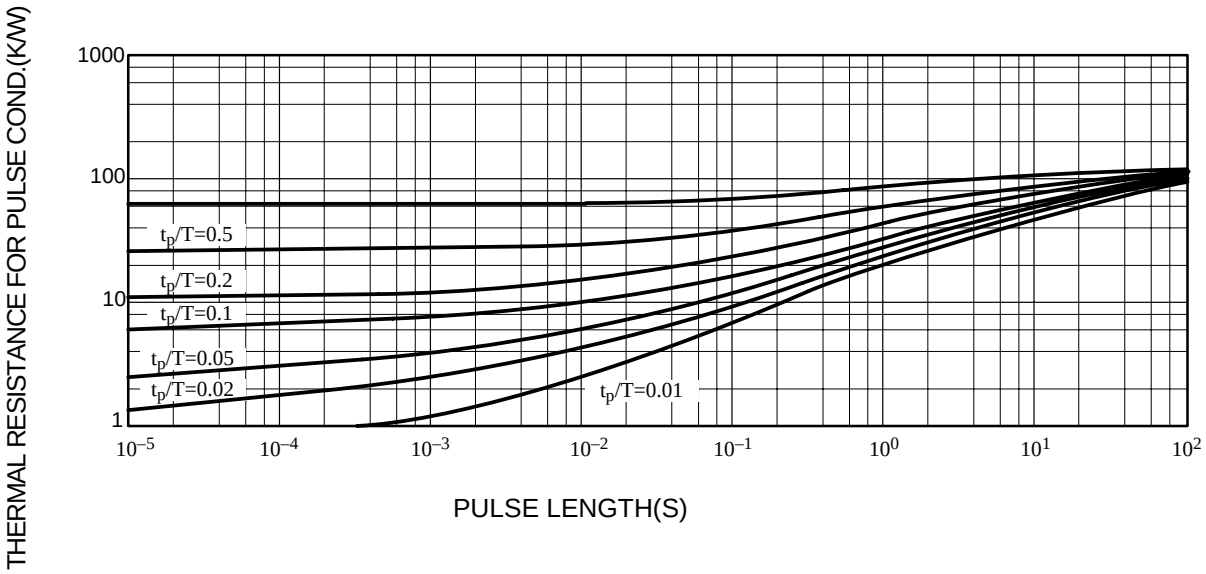



**FIG.3 THERMAL RESPONSE**




| PACKAGE | SPQ/PCS | CARTON SPQ/PCS | CARTON SIZE/CM | CARTON GW/KG | CARTON NW/KG |
|---|---|---|---|---|---|
| SMA | 5000/REEL | 80000 | 36X30.6X31 | 12.00 | 11.00 |