

# BZD27C3V6P~BZD27C75P

## VOLTAGE REGULATOR DIODES

**VOLTAGE** 3.6 to 75 Volt **POWER** 1 W

**SOD-123FL**

Unit : inch(mm)

### FEATURES

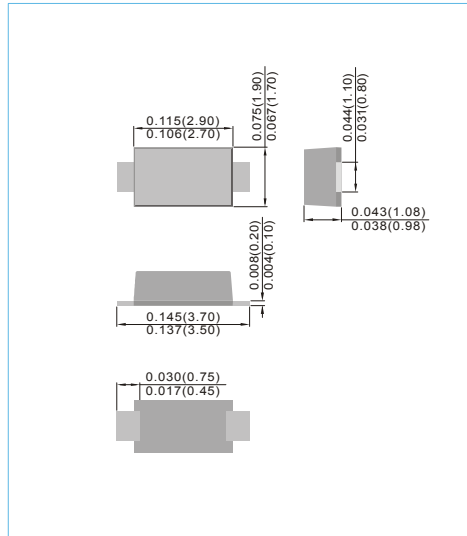
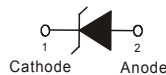
- Silicon Planar Zener Diode
- Low profile surface-mount package
- Zener and surge current specification
- Low leakage current
- Excellent stability
- High temperature soldering : 260°C/10 sec. at terminals
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. . (Halogen Free)

### MECHANICAL DATA

Case: SOD-123FL

Terminals : Solderable per MIL-STD-750,Method 2026

Approx Weight: 0.0006 ounce, 0.017 gram



## ABSOLUTE MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

| Parameter                                   | Test condition                                                                                      | Symbol                 | Value             | Units |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------|-------------------|-------|
| Power dissipation                           | $T_L=80^{\circ}\text{C}$<br>$T_A=25^{\circ}\text{C}$                                                | $P_{TOT}$<br>$P_{TOT}$ | 2.3<br>1 (note 1) | W     |
| Non-repetitive peak pulse power dissipation | 100 $\mu\text{s}$ square pulse(note 2)<br>10/1000 $\mu\text{s}$ waveform (BZD27-C7V5P to BZD27-75P) | $P_{ZSM}$<br>$P_{RSM}$ | 300<br>150        | W     |

## THERMAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ , unless otherwise noted)

| Parameter                                      | Symbol          | Value        | Unit               |
|------------------------------------------------|-----------------|--------------|--------------------|
| Typical thermal resistance junction to ambient | $R_{\theta JA}$ | 180          | K/W                |
| Typical thermal resistance junction to lead    | $R_{\theta JL}$ | 30           | K/W                |
| Maximum junction temperature                   | $T_J$           | 150          | $^{\circ}\text{C}$ |
| Storage temperature range                      | $T_S$           | -55 to + 150 | $^{\circ}\text{C}$ |

## ELECTRICAL CHARACTERISTICS

| Parameter       | Test condition    | Symbol | Min | Typ | Max | Units |
|-----------------|-------------------|--------|-----|-----|-----|-------|
| Forward voltage | $I_F=0.2\text{A}$ | $V_F$  | -   | -   | 1.2 | V     |

### NOTES :

1. Mounted on epoxy-glass PCB with 3X3 mm Cu pads ( $\geq 40\mu\text{m}$  thick)
2.  $T_J=25^{\circ}\text{C}$  prior to surge



## BZD27C3V6P~BZD27C75P

| Part Number | Nominal Zener Voltage           |        |        | Max. Zener Impedance             |     |                                  |      | Max Reverse Leakage Current    |     | Marking Code |
|-------------|---------------------------------|--------|--------|----------------------------------|-----|----------------------------------|------|--------------------------------|-----|--------------|
|             | V <sub>Z</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> |     |              |
|             | Nom. V                          | Min. V | Max. V | Ω                                | mA  | Ω                                | mA   | μA                             | V   |              |
| BZD27C3V6P  | 3.6                             | 3.42   | 3.78   | 8                                | 100 | 400                              | 1    | 100                            | 1   | 3V6          |
| BZD27C3V9P  | 3.9                             | 3.71   | 4.10   | 8                                | 100 | 400                              | 1    | 50                             | 1   | 3V9          |
| BZD27C4V3P  | 4.3                             | 4.09   | 4.52   | 7                                | 100 | 400                              | 1    | 25                             | 1   | 4V3          |
| BZD27C4V7P  | 4.7                             | 4.47   | 4.94   | 7                                | 100 | 500                              | 1    | 10                             | 1   | 4V7          |
| BZD27C5V1P  | 5.1                             | 4.85   | 5.36   | 6                                | 100 | 550                              | 1    | 5                              | 1   | 5V1          |
| BZD27C5V6P  | 5.6                             | 5.32   | 5.88   | 4                                | 100 | 600                              | 1    | 10                             | 2   | 5V6          |
| BZD27C6V0P  | 6.0                             | 5.70   | 6.30   | 3                                | 100 | 600                              | 1    | 8                              | 2   | 6V1          |
| BZD27C6V2P  | 6.2                             | 5.89   | 6.51   | 3                                | 100 | 700                              | 1    | 5                              | 2   | 6V2          |
| BZD27C6V8P  | 6.8                             | 6.46   | 7.14   | 3                                | 100 | 700                              | 1    | 10                             | 3   | 6V8          |
| BZD27C7V5P  | 7.5                             | 7.13   | 7.88   | 2                                | 100 | 700                              | 0.5  | 50                             | 3   | 7V5          |
| BZD27C8V2P  | 8.2                             | 7.79   | 8.61   | 2                                | 100 | 700                              | 0.5  | 10                             | 3   | 8V2          |
| BZD27C8V7P  | 8.7                             | 8.27   | 9.14   | 3                                | 50  | 700                              | 0.5  | 10                             | 4   | 8V7          |
| BZD27C9V1P  | 9.1                             | 8.65   | 9.56   | 4                                | 50  | 700                              | 0.5  | 10                             | 5   | 9V1          |
| BZD27C10P   | 10                              | 9.50   | 10.50  | 4                                | 50  | 700                              | 0.25 | 7                              | 7.5 | 10P          |
| BZD27C11P   | 11                              | 10.45  | 11.55  | 7                                | 50  | 700                              | 0.25 | 4                              | 8.2 | 11P          |
| BZD27C12P   | 12                              | 11.40  | 12.60  | 7                                | 50  | 700                              | 0.25 | 3                              | 9.1 | 12P          |
| BZD27C13P   | 13                              | 12.35  | 13.65  | 10                               | 50  | 700                              | 0.25 | 2                              | 10  | 13P          |
| BZD27C14P   | 14                              | 13.30  | 14.70  | 10                               | 50  | 700                              | 0.25 | 2                              | 11  | 14P          |
| BZD27C15P   | 15                              | 14.25  | 15.75  | 10                               | 50  | 700                              | 0.25 | 1                              | 11  | 15P          |
| BZD27C16P   | 16                              | 15.20  | 16.80  | 15                               | 25  | 700                              | 0.25 | 1                              | 12  | 16P          |
| BZD27C17P   | 17                              | 16.15  | 17.85  | 15                               | 25  | 750                              | 0.25 | 1                              | 13  | 17P          |
| BZD27C18P   | 18                              | 17.10  | 18.90  | 15                               | 25  | 750                              | 0.25 | 1                              | 13  | 18P          |
| BZD27C19P   | 19                              | 18.05  | 19.95  | 15                               | 25  | 750                              | 0.25 | 1                              | 14  | 19P          |
| BZD27C20P   | 20                              | 19.00  | 21.0   | 15                               | 25  | 750                              | 0.25 | 1                              | 15  | 20P          |
| BZD27C22P   | 22                              | 20.90  | 23.10  | 15                               | 25  | 750                              | 0.25 | 1                              | 16  | 22P          |
| BZD27C24P   | 24                              | 22.80  | 25.20  | 15                               | 25  | 750                              | 0.25 | 1                              | 18  | 24P          |
| BZD27C25P   | 25                              | 23.75  | 26.25  | 15                               | 25  | 750                              | 0.25 | 1                              | 19  | 25P          |
| BZD27C27P   | 27                              | 25.65  | 28.35  | 15                               | 25  | 1000                             | 0.25 | 1                              | 20  | 27P          |
| BZD27C28P   | 28                              | 26.60  | 29.40  | 15                               | 25  | 1000                             | 0.25 | 1                              | 21  | 28P          |
| BZD27C30P   | 30                              | 28.50  | 31.50  | 15                               | 25  | 1000                             | 0.25 | 1                              | 22  | 30P          |
| BZD27C33P   | 33                              | 31.35  | 34.65  | 15                               | 25  | 1000                             | 0.25 | 1                              | 24  | 33P          |
| BZD27C36P   | 36                              | 34.20  | 37.80  | 40                               | 10  | 1000                             | 0.25 | 1                              | 27  | 36P          |
| BZD27C39P   | 39                              | 37.05  | 40.95  | 40                               | 10  | 1000                             | 0.25 | 1                              | 30  | 39P          |
| BZD27C43P   | 43                              | 40.85  | 45.15  | 45                               | 10  | 1500                             | 0.25 | 1                              | 33  | 43P          |
| BZD27C47P   | 47                              | 44.65  | 49.35  | 45                               | 10  | 1500                             | 0.25 | 1                              | 36  | 47P          |
| BZD27C51P   | 51                              | 48.45  | 53.55  | 60                               | 10  | 1500                             | 0.25 | 1                              | 39  | 51P          |
| BZD27C56P   | 56                              | 53.2   | 58.8   | 60                               | 10  | 2000                             | 0.25 | 1                              | 43  | 56P          |
| BZD27C62P   | 62                              | 58.9   | 65.1   | 80                               | 10  | 2000                             | 0.25 | 1                              | 47  | 62P          |
| BZD72C68P   | 68                              | 64.6   | 71.4   | 80                               | 10  | 2000                             | 0.25 | 1                              | 51  | 68P          |
| BZD27C75P   | 75                              | 71.25  | 78.75  | 100                              | 10  | 2000                             | 0.25 | 1                              | 56  | 75P          |

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Typical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise specified)

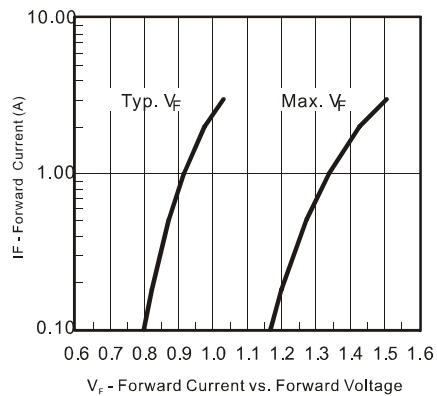


Figure1. Forward Current vs. Forward Voltage

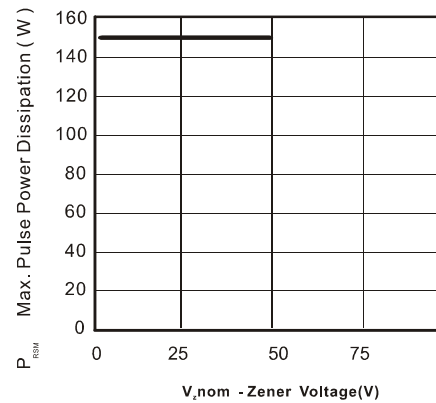


Figure4. Maximum Pulse Power Dissipation vs. Zener Voltage

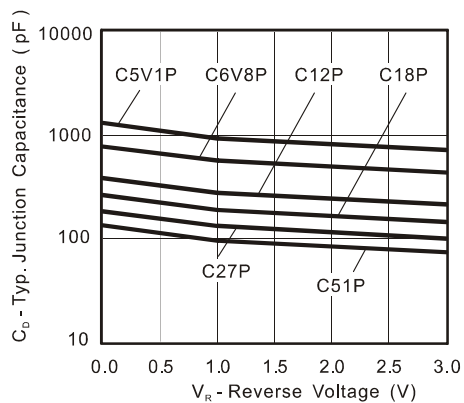


Figure2. Typ. Diode Capacitance vs. Reverse Voltage

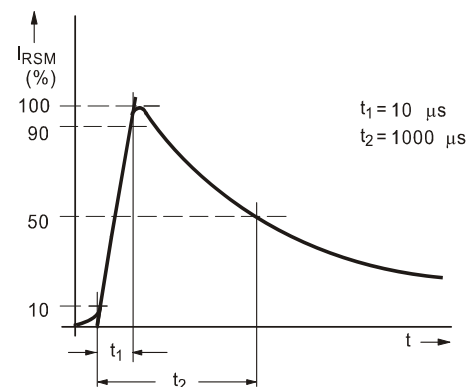


Figure5. Non-Repetitive Peak Reverse Current Pulse Definition

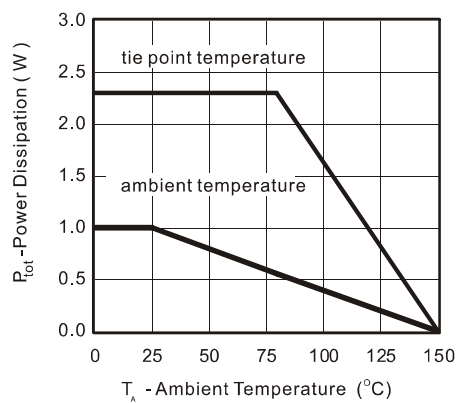


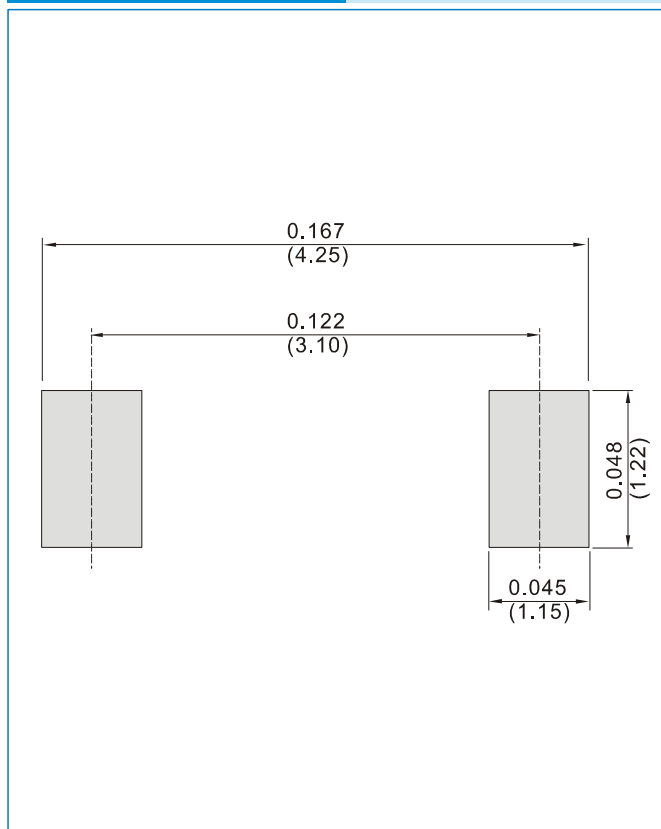
Figure3. Power Dissipation vs. Ambient Temperature

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## MOUNTING PAD LAYOUT

SOD-123FL

Unit : inch(mm)



## ORDER INFORMATION

- Packing information
  - T/R - 10K per 13" plastic Reel
  - T/R - 3K per 7" plastic Reel



## BZD27C3V6P~BZD27C75P

### Part No\_packing code\_Version

BZD27C3V6P\_R1\_00001

BZD27C3V6P\_R2\_00001

For example :

**RB500V-40\_R2\_00001**

Part No.

Serial number

Version code means HF

Packing size code means 13"

Packing type means T/R

| Packing Code <b>XX</b>               |                      |                                  |                      | Version Code <b>XXXXX</b> |                      |                                       |
|--------------------------------------|----------------------|----------------------------------|----------------------|---------------------------|----------------------|---------------------------------------|
| Packing type                         | 1 <sup>st</sup> Code | Packing size code                | 2 <sup>nd</sup> Code | HF or RoHS                | 1 <sup>st</sup> Code | 2 <sup>nd</sup> ~5 <sup>th</sup> Code |
| Tape and Ammunition Box (T/B)        | <b>A</b>             | N/A                              | <b>0</b>             | <b>HF</b>                 | <b>0</b>             | serial number                         |
| Tape and Reel (T/R)                  | <b>R</b>             | 7"                               | <b>1</b>             | <b>RoHS</b>               | <b>1</b>             | serial number                         |
| Bulk Packing (B/P)                   | <b>B</b>             | 13"                              | <b>2</b>             |                           |                      |                                       |
| Tube Packing (T/P)                   | <b>T</b>             | 26mm                             | <b>X</b>             |                           |                      |                                       |
| Tape and Reel (Right Oriented) (TRR) | <b>S</b>             | 52mm                             | <b>Y</b>             |                           |                      |                                       |
| Tape and Reel (Left Oriented) (TRL)  | <b>L</b>             | PANASERT T/B CATHODE UP (PBCU)   | <b>U</b>             |                           |                      |                                       |
| FORMING                              | <b>F</b>             | PANASERT T/B CATHODE DOWN (PBCD) | <b>D</b>             |                           |                      |                                       |



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