

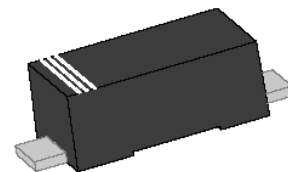


## Zener Diodes with Surge Current Specification: BZD55C Series

Rev.1.3

### FEATURE

- ✧ Silicon power zener diodes.
- ✧ Low zener impedance.
- ✧ 1000mW rating on FR-4 or FR-5 board.
- ✧ Voltage range includes breakdown voltages from 3.9V to 6.2V with  $\pm 5\%$  for BZD55C series.
- ✧ Low profile surface-mount package.
- ✧ Zener and surge current specification.
- ✧ For use in stabilizing and clamping circuits with high power rating.



SOD-123FL



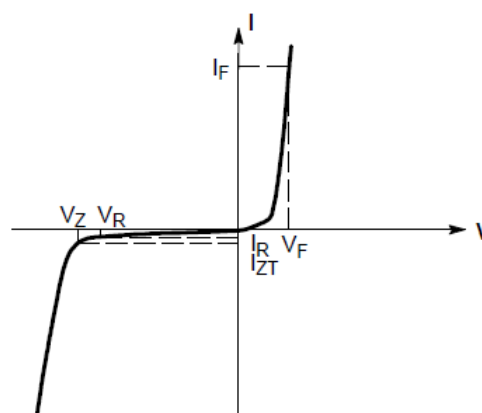
### ABSOLUTE MAXIMUM RATINGS AND THERMAL CHARACTERISTICS

| Parameter                                                | Symbol          | Max Value   | Unit |
|----------------------------------------------------------|-----------------|-------------|------|
| Total power dissipation @ 75°C                           | $P_D$           | 1000        | mW   |
| Thermal resistance junction to ambient (Note1)           | $R_{\theta JA}$ | 330         | °C/W |
| Junction temperature                                     | $T_j$           | 150         | °C   |
| Storage temperature range                                | $T_s$           | -55 to +150 | °C   |
| Operating temperature range                              | $T_{op}$        | -55 to +150 | °C   |
| Peak pulse power dissipation on 10/1000 $\mu$ s waveform | $P_{PP}$        | 100 to 150  | W    |

Note1: Device mounted on FR-4 PCB with minimum recommended pad layout

### ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ )

| Symbol   | Parameter                         |
|----------|-----------------------------------|
| $V_Z$    | Reverse zener voltage at $I_{zt}$ |
| $I_{zt}$ | Reverse current                   |
| $I_R$    | Reverse leakage current at $V_R$  |
| $V_R$    | Reverse voltage                   |
| $I_F$    | Forward current                   |
| $V_F$    | Forward voltage at $I_F$          |



Zener voltage regulator

**MARKING**



7T1: Device Marking Code

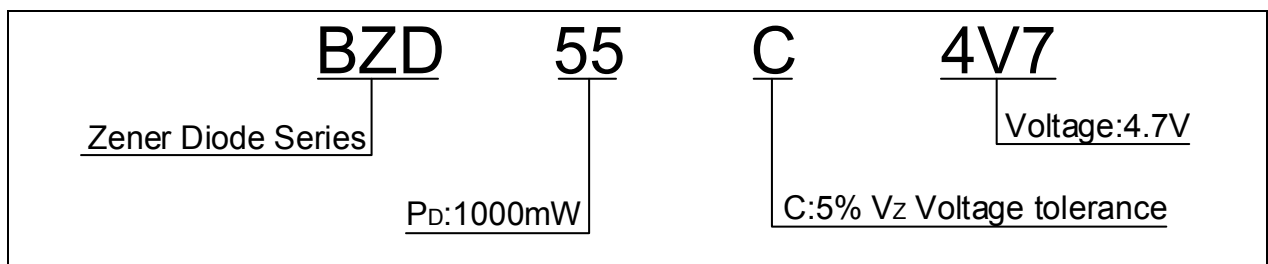
**BZD55C ELECTRICAL CHARACTERISTICS** (T<sub>A</sub>=25°C unless otherwise noted)

Maximum V<sub>F</sub>=1.2V at I<sub>F</sub>=200mA

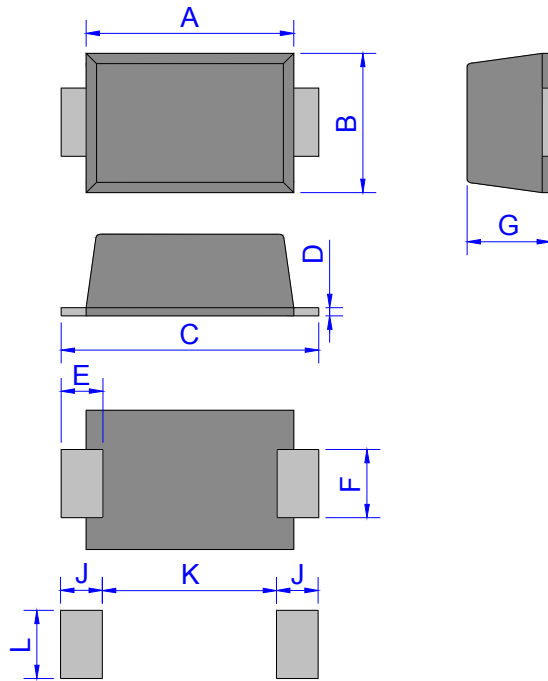
| Type number | Zener voltage range at I <sub>zt</sub> |             |             |                      | Maximum zener impedance |                     |                      | Maximum reverse leakage current |                        | Clamping voltage at I <sub>PP</sub> |                     | Marking code |
|-------------|----------------------------------------|-------------|-------------|----------------------|-------------------------|---------------------|----------------------|---------------------------------|------------------------|-------------------------------------|---------------------|--------------|
|             | Nom (Volts)                            | Min (Volts) | Max (Volts) | I <sub>zt</sub> (mA) | Z <sub>ZT</sub> (Ω)     | Z <sub>ZK</sub> (Ω) | I <sub>ZK</sub> (mA) | I <sub>R</sub> (μA)             | V <sub>R</sub> (Volts) | Max (Volts)                         | I <sub>PP</sub> (A) |              |
| BZD55C3V9   | 3.9                                    | 3.71        | 4.10        | 64                   | 20                      | 800                 | 1.0                  | 120                             | 1                      | 6.2                                 | 16.1                | 7P1          |
| BZD55C4V3   | 4.3                                    | 4.09        | 4.52        | 58                   | 20                      | 600                 | 1.0                  | 20                              | 1                      | 6.9                                 | 14.5                | 7Q1          |
| BZD55C4V7   | 4.7                                    | 4.47        | 4.94        | 53                   | 8                       | 600                 | 1.0                  | 10                              | 1                      | 7.6                                 | 19.7                | 7R1          |
| BZD55C5V1   | 5.1                                    | 4.85        | 5.36        | 49                   | 7                       | 500                 | 1.0                  | 5                               | 1                      | 8.3                                 | 18.1                | 7T1          |
| BZD55C5V6   | 5.6                                    | 5.32        | 5.88        | 45                   | 5                       | 500                 | 1.0                  | 5                               | 2                      | 8.9                                 | 16.9                | 7U1          |
| BZD55C6V2   | 6.2                                    | 5.89        | 6.51        | 41                   | 4                       | 500                 | 1.0                  | 5                               | 3                      | 9.9                                 | 15.2                | 7V1          |

Notes: Zener voltage tolerance of standard BZD55C series is ±5%

**ORDERING INFORMATION**



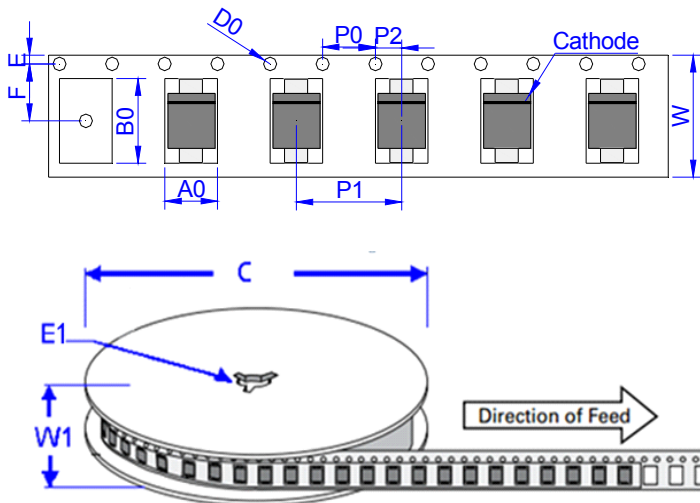
**PACKAGE MECHANICAL DATA**



SOD-123FL

| Ref. | Dimensions  |      |        |       |
|------|-------------|------|--------|-------|
|      | Millimeters |      | Inches |       |
|      | Min.        | Max. | Min.   | Max.  |
| A    | 2.60        | 3.00 | 0.102  | 0.118 |
| B    | 1.60        | 2.00 | 0.063  | 0.079 |
| C    | 3.45        | 3.95 | 0.136  | 0.156 |
| D    | 0.10        | 0.25 | 0.004  | 0.01  |
| E    | 0.3         | 0.9  | 0.012  | 0.035 |
| F    | 0.80        | 1.20 | 0.031  | 0.047 |
| G    | 0.70        | 1.00 | 0.028  | 0.039 |
| J    | 1.30        |      | 0.051  |       |
| K    |             | 1.70 |        | 0.067 |
| L    | 1.30        |      | 0.051  |       |

**TAPE AND REEL SPECIFICATION-SOD-123FL**



| Ref. | Dimensions  |               |
|------|-------------|---------------|
|      | Millimeters | Inches        |
| A0   | 1.95 ± 0.3  | 0.077± 0.012  |
| B0   | 3.95 ± 0.3  | 0.156 ± 0.012 |
| C    | 178         | 7.0           |
| D0   | 1.55 ± 0.1  | 0.061 ± 0.004 |
| E    | 1.75 ± 0.2  | 0.069 ± 0.008 |
| E1   | 13.3 ± 0.3  | 0.524± 0.012  |
| F    | 3.50 ± 0.2  | 0.138 ± 0.008 |
| P0   | 4.00 ± 0.2  | 0.157 ± 0.008 |
| P1   | 4.00 ± 0.2  | 0.157 ± 0.008 |
| P2   | 2.00 ± 0.2  | 0.079 ± 0.008 |
| W    | 8.0± 0.2    | 0.315 ± 0.008 |
| W1   | 11.5 ± 1.0  | 0.453 ± 0.039 |

| PART No.      | UNIT WEIGHT (g/PCS) typ. | REEL (PCS) | PER CARTON (PCS) | DESCRIPTION      |
|---------------|--------------------------|------------|------------------|------------------|
| BZD55C Series | 0.0144                   | 3000       | 150,000          | 7 inch reel pack |

**RATINGS AND CHARACTERISTICS CURVES** ( $T_A=25^{\circ}\text{C}$ , unless otherwise noted)

Fig.1 Power dissipation vs lead temperature

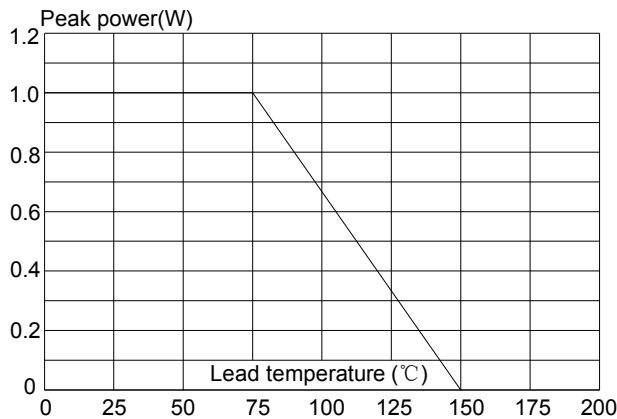
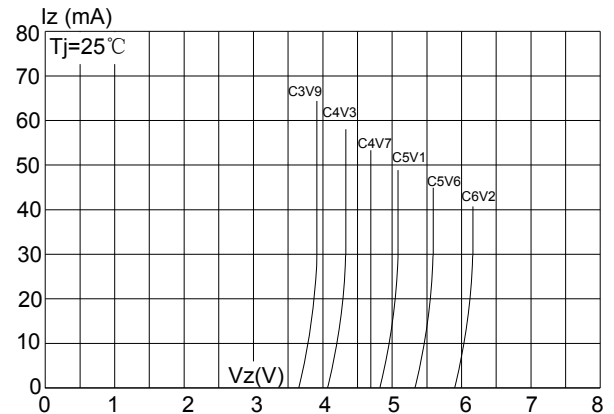


Fig.2 Zener breakdown characteristics




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