

**/ Descriptions**

SOD-123

Zener Diode in a SOD-123 Plastic Package.

**/ Features**

500mW

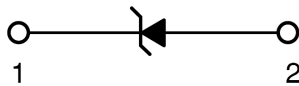
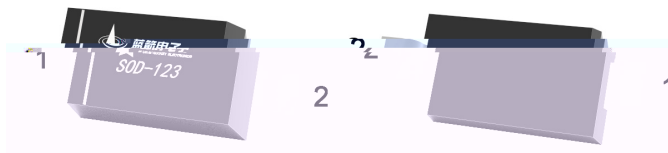
AEC-Q101

500mW power dissipation, medium current, automated assembly processes, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

**/ Applications**

2.4V-39V

2.4V to 39V wide zener voltage range applications, Meet the stringent requirements of automotive applications.

**/ Equivalent Circuit****/ Pinning**

PIN1:Cathode

PIN2:Anode

**/ Marking**

See Marking Instructions.

## / Absolute Maximum Ratings(Ta=25 )

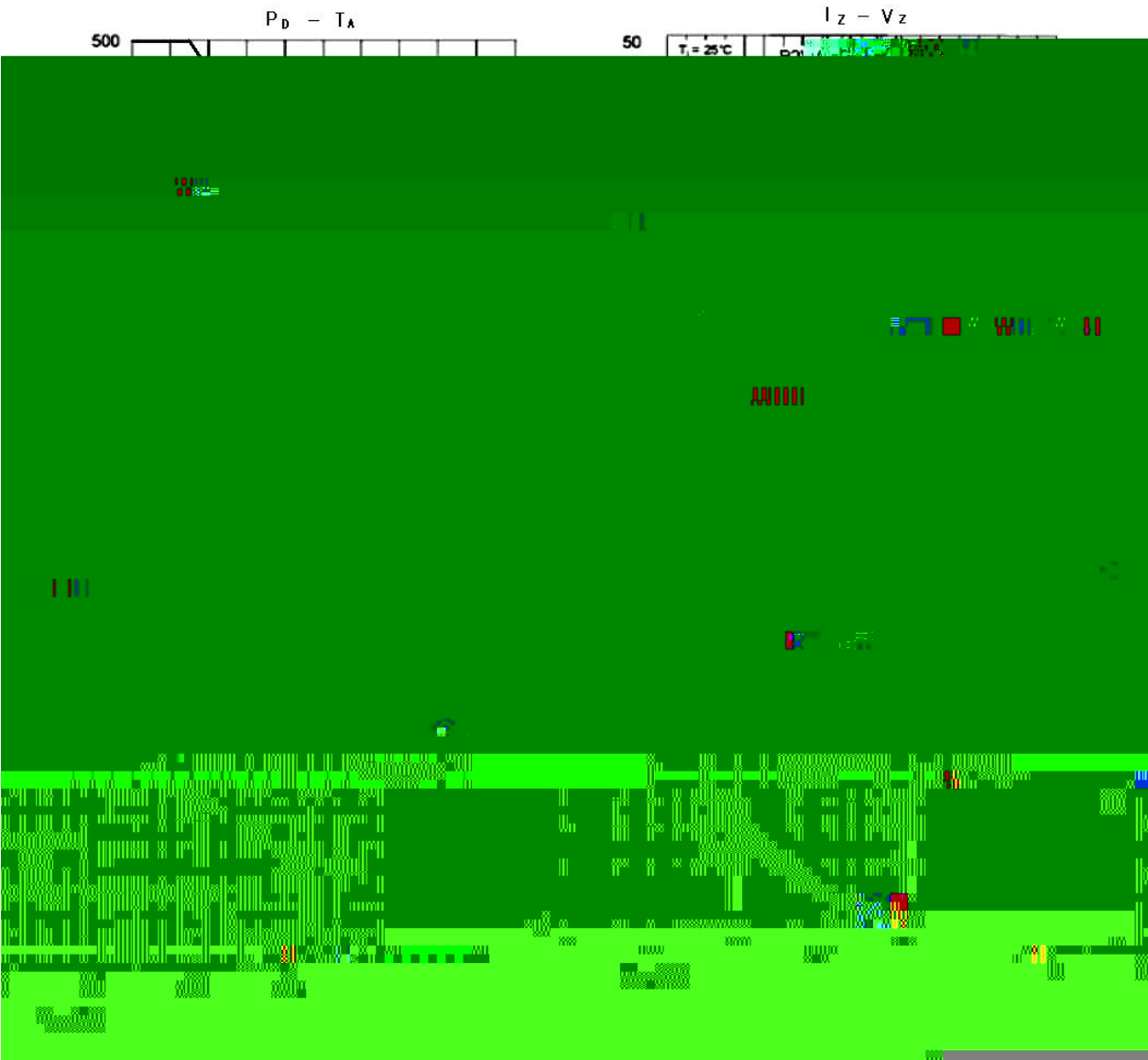
| Parameter                                              | Symbol          | Rating  | Unit                        |
|--------------------------------------------------------|-----------------|---------|-----------------------------|
| Forward Voltage (Note 2) $I_F=10\text{mA}$             | $V_F$           | 0.9     | V                           |
| Power Dissipation(Note 1)                              | $P_D$           | 500     | mW                          |
| Typical Thermal Resistance Junction to Ambient(Note 1) | $R_{\theta JA}$ | 305     | $^{\circ}\text{C}/\text{W}$ |
| Junction and Storage Temperature Range                 | $T_j, T_{stg}$  | -65 150 | $^{\circ}\text{C}$          |

## / Electrical Characteristics(Ta=25 )

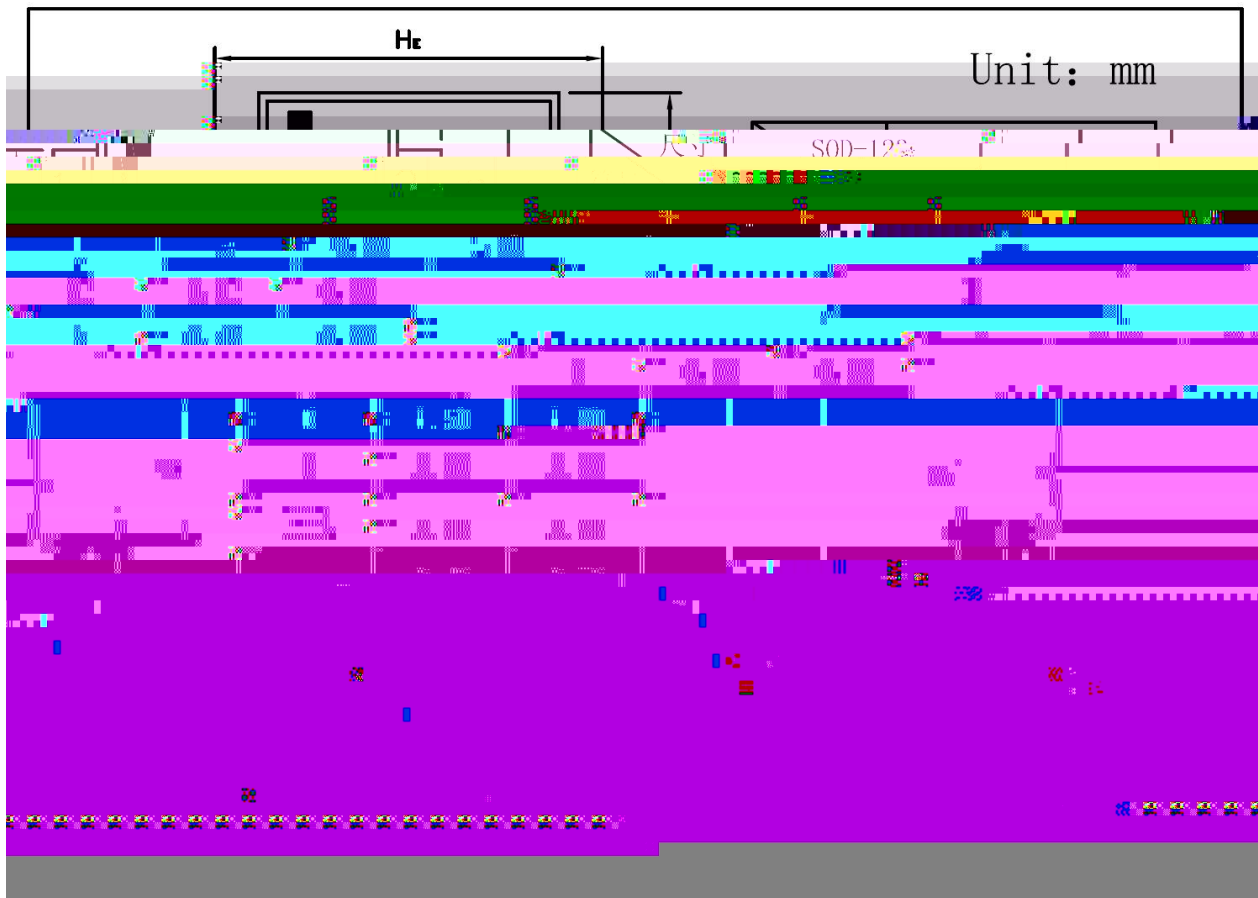
| Type Number  | Marking Code | Zener Voltage Range |         |         |          | Maximum Zener Impedance |                   |          | Maximum Reverse Current |         |
|--------------|--------------|---------------------|---------|---------|----------|-------------------------|-------------------|----------|-------------------------|---------|
|              |              | $V_Z @ I_{ZT}$      |         |         | $I_{ZT}$ | $Z_{ZT} @ I_{ZT}$       | $Z_{ZK} @ I_{ZK}$ | $I_{ZK}$ | $I_R$                   | @ $V_R$ |
|              |              | Nom (V)             | Min (V) | Max (V) | mA       | $\Omega$                |                   | mA       | $\mu\text{A}$           | V       |
| BRBZT52B2V4Q | Q0Z          | 2.4                 | 2.35    | 2.45    | 5        | 94                      | 564               | 1        | 45                      | 1       |
| BRBZT52B2V7Q | Q1Z          | 2.7                 | 2.65    | 2.75    | 5        | 94                      | 564               | 1        | 18                      | 1       |
| BRBZT52B3V0Q | Q2Z          | 3.0                 | 2.94    | 3.06    | 5        | 89                      | 564               | 1        | 9                       | 1       |
| BRBZT52B3V3Q | Q3Z          | 3.3                 | 3.23    | 3.37    | 5        | 89                      | 564               | 1        | 4.5                     | 1       |
| BRBZT52B3V6Q | Q4Z          | 3.6                 | 3.53    | 3.67    | 5        | 84                      | 564               | 1        | 4.5                     | 1       |
| BRBZT52B3V9Q | Q5Z          | 3.9                 | 3.82    | 3.96    | 5        | 84                      | 564               | 1        | 2.7                     | 1       |
| BRBZT52B4V3Q | Q6Z          | 4.3                 | 4.21    | 4.39    | 5        | 84                      | 564               | 1        | 2.7                     | 1       |
| BRBZT52B4V7Q | Q7Z          | 4.7                 | 4.61    | 4.79    | 5        | 75                      | 564               | 1        | 2.7                     | 2       |
| BRBZT52B5V1Q | Q8Z          | 5.1                 | 5.00    | 5.20    | 5        | 56                      | 470               | 1        | 1.8                     | 2       |
| BRBZT52B5V6Q | Q9Z          | 5.6                 | 5.49    | 5.71    | 5        | 27                      | 451               | 1        | 0.9                     | 2       |
| BRBZT52B6V2Q | QAZ          | 6.2                 | 6.08    | 6.32    | 5        | 9                       | 376               | 1        | 2.7                     | 4       |
| BRBZT52B6V8Q | QBZ          | 6.8                 | 6.66    | 6.94    | 5        | 14                      | 141               | 1        | 1.8                     | 4       |
| BRBZT52B7V5Q | QCZ          | 7.5                 | 7.35    | 7.65    | 5        | 14                      | 75                | 1        | 0.9                     | 5       |
| BRBZT52B8V2Q | QDZ          | 8.2                 | 8.04    | 8.36    | 5        | 14                      | 75                | 1        | 0.63                    | 5       |
| BRBZT52B9V1Q | QEZ          | 9.1                 | 8.92    | 9.28    | 5        | 14                      | 94                | 1        | 0.45                    | 6       |
| BRBZT52B10Q  | QFZ          | 10                  | 9.80    | 10.20   | 5        | 18                      | 141               | 1        | 0.18                    | 7       |
| BRBZT52B11Q  | QGZ          | 11                  | 10.78   | 11.22   | 5        | 18                      | 141               | 1        | 0.09                    | 8       |

**BRBZT52BXXXQ**

/ Electrical Characteristic Curve

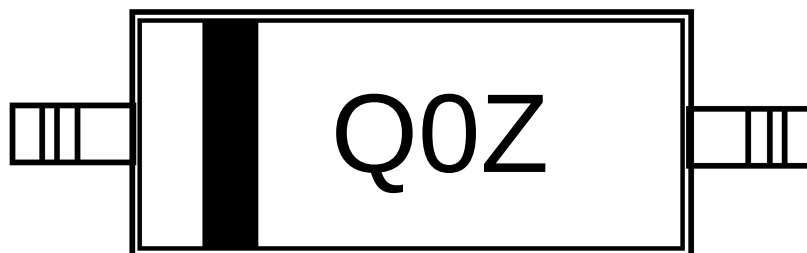


## / Package Dimensions





/ Marking Instructions



Q

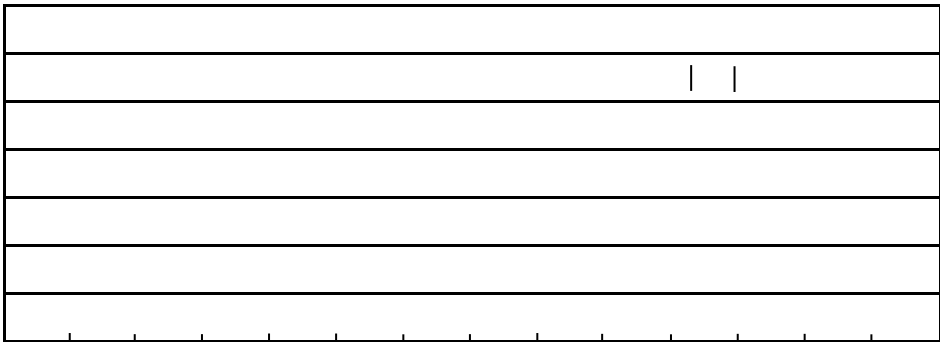
0Z

Note:

Q: Automobile halogen-free product Code

0Z: Product Type Code

(     ) / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- 1

150 200

60 120sec;

1.Preheating:150~200 , Time:60~120sec.
- 2

255±5

5±0.5sec;

2.Peak Temp.:255±5 , Duration:5±0.5sec.
- 3

2 10

/sec.

3.Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260±5

10±1 sec.

Temp.:260±5

Time:10±1 sec

/ Packaging SPEC.

/ REEL

| Package Type | Units |    |        |   |         | Dimension (unit mm <sup>3</sup> ) |             |             |
|--------------|-------|----|--------|---|---------|-----------------------------------|-------------|-------------|
|              |       |    |        |   |         |                                   |             |             |
| SOD-123      | 3,000 | 10 | 30,000 | 6 | 180,000 | 7 ×8                              | 180×120×180 | 390×385×205 |

/ Notices