

TOSHIBA ZENER DIODE SILICON DIFFUSED TYPE

# 1AZ6.8~1AZ330

CONSTANT VOLTAGE REGULATION

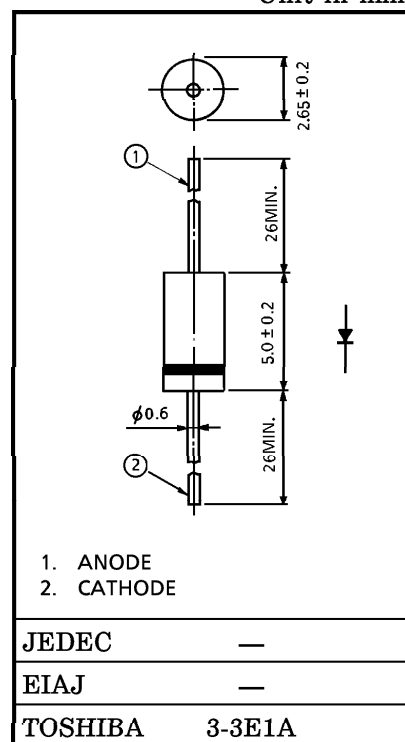
TRANSIENT SUPPRESSORS

- Average Power Dissipation :  $P=1.0W$
- Zener Voltage :  $V_Z=6.8\sim330V$
- Withstand Hard Environment
- Plastic Mold Package
- Can be used for an automatic mounting machine

MAXIMUM RATINGS ( $T_a = 25^\circ C$ )

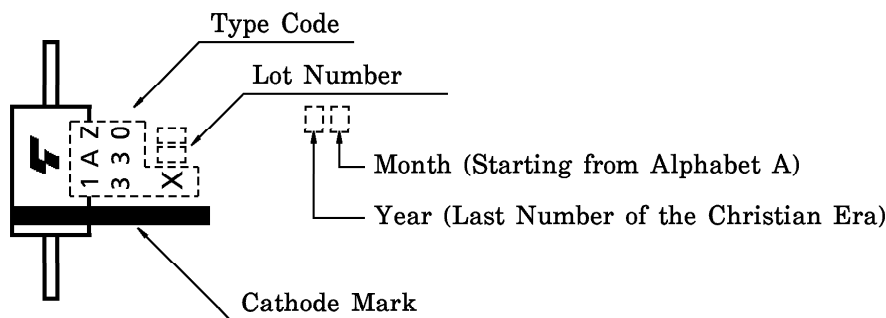
| CHARACTERISTIC            | SYMBOL    | RATING         | UNIT       |
|---------------------------|-----------|----------------|------------|
| Power Dissipation         | P         | 1.0            | W          |
| Junction Temperature      | $T_j$     | $-40 \sim 150$ | $^\circ C$ |
| Storage Temperature Range | $T_{stg}$ | $-40 \sim 150$ | $^\circ C$ |

Unit in mm



Weight : 0.23g

MARKING



Color : Silver

961001EAA1

- TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.

| TYPE *       | ZENER CHARACTERISTICS |      |      |                                          |                             | TEMPERATURE<br>COEFFICIENT<br>OF ZENER<br>VOLTAGE<br>$\alpha_T$ (mV / °C) |      | FORWARD<br>VOLTAGE |                                          | REVERSE<br>CURRENT |                                          |
|--------------|-----------------------|------|------|------------------------------------------|-----------------------------|---------------------------------------------------------------------------|------|--------------------|------------------------------------------|--------------------|------------------------------------------|
|              | ZENER VOLTAGE         |      |      | ZENER<br>IMPEDANCE<br>$r_d$ ( $\Omega$ ) | MEASURE-<br>MENT<br>CURRENT |                                                                           |      | $V_F$ (V)          | MEASURE-<br>MENT<br>CURRENT<br>$I_F$ (A) | $I_R$ ( $\mu A$ )  | MEASURE-<br>MENT<br>VOLTAGE<br>$V_R$ (V) |
|              | $V_Z$ (V)             |      |      |                                          |                             |                                                                           |      |                    |                                          |                    |                                          |
|              | MIN.                  | TYP. | MAX. | MAX.                                     | $I_Z$ (mA)                  | TYP.                                                                      | MAX. | MAX.               |                                          | MAX.               |                                          |
| 1AZ6.8       | 6.2                   | 6.8  | 7.4  | 60                                       | 10                          | 3                                                                         | 4    | 1.2                | 0.2                                      | 10                 | 3.0                                      |
| 1AZ7.5       | 6.8                   | 7.5  | 8.3  | 30                                       | 10                          | 4                                                                         | 5    | 1.2                | 0.2                                      | 10                 | 4.5                                      |
| 1AZ8.2       | 7.4                   | 8.2  | 9.1  | 30                                       | 10                          | 4                                                                         | 6    | 1.2                | 0.2                                      | 10                 | 4.9                                      |
| 1AZ9.1       | 8.2                   | 9.1  | 10.1 | 30                                       | 10                          | 5                                                                         | 8    | 1.2                | 0.2                                      | 10                 | 5.5                                      |
| 1AZ10        | 9.0                   | 10   | 11.0 | 30                                       | 10                          | 6                                                                         | 9    | 1.2                | 0.2                                      | 10                 | 6.0                                      |
| 1AZ11        | 9.9                   | 11   | 12.1 | 30                                       | 10                          | 7                                                                         | 11   | 1.2                | 0.2                                      | 10                 | 7.0                                      |
| 1AZ12        | 10.8                  | 12   | 13.2 | 30                                       | 10                          | 8                                                                         | 13   | 1.2                | 0.2                                      | 10                 | 8.0                                      |
| 1AZ13        | 11.7                  | 13   | 14.3 | 30                                       | 10                          | 9                                                                         | 14   | 1.2                | 0.2                                      | 10                 | 9.0                                      |
| 1AZ15        | 13.5                  | 15   | 16.5 | 30                                       | 10                          | 11                                                                        | 17   | 1.2                | 0.2                                      | 10                 | 10.0                                     |
| 1AZ16        | 14.4                  | 16   | 17.6 | 30                                       | 10                          | 12                                                                        | 19   | 1.2                | 0.2                                      | 10                 | 11.0                                     |
| 1AZ18        | 16.2                  | 18   | 19.8 | 30                                       | 10                          | 14                                                                        | 23   | 1.2                | 0.2                                      | 10                 | 13.0                                     |
| 1AZ20        | 18.0                  | 20   | 22.0 | 30                                       | 10                          | 16                                                                        | 26   | 1.2                | 0.2                                      | 10                 | 14.0                                     |
| 1AZ22        | 19.8                  | 22   | 24.2 | 30                                       | 10                          | 18                                                                        | 28   | 1.2                | 0.2                                      | 10                 | 16.0                                     |
| 1AZ24        | 21.6                  | 24   | 26.4 | 30                                       | 10                          | 20                                                                        | 32   | 1.2                | 0.2                                      | 10                 | 17.0                                     |
| 1AZ27        | 24.3                  | 27   | 29.7 | 30                                       | 10                          | 23                                                                        | 36   | 1.2                | 0.2                                      | 10                 | 19.0                                     |
| 1AZ30        | 27.0                  | 30   | 33.0 | 30                                       | 10                          | 25                                                                        | 40   | 1.2                | 0.2                                      | 10                 | 21.0                                     |
| 1AZ33        | 29.7                  | 33   | 36.3 | 30                                       | 10                          | 26                                                                        | 41   | 1.2                | 0.2                                      | 10                 | 26.4                                     |
| 1AZ36        | 32.4                  | 36   | 39.6 | 30                                       | 9                           | 28                                                                        | 45   | 1.2                | 0.2                                      | 10                 | 28.8                                     |
| 1AZ47        | 42.3                  | 47   | 51.7 | 65                                       | 6                           | 38                                                                        | 60   | 1.2                | 0.2                                      | 10                 | 37.6                                     |
| 1AZ51        | 45.9                  | 51   | 56.1 | 65                                       | 6                           | 43                                                                        | 68   | 1.2                | 0.2                                      | 10                 | 40.8                                     |
| ※ 1AZ200     | 180                   | 200  | 220  | 500                                      | 1.5                         | 170                                                                       | 269  | 1.2                | 0.2                                      | 10                 | 160                                      |
| ※ 1AZ220     | 198                   | 220  | 242  | 5000                                     | 0.5                         | 200                                                                       | 309  | 1.2                | 0.2                                      | 10                 | 176                                      |
| ※ 1AZ220 – Y | 210                   | 220  | 230  |                                          |                             | 200                                                                       | 309  |                    |                                          |                    | 176                                      |
| ※ 1AZ220 – Z | 220                   | 230  | 240  |                                          |                             | 207                                                                       | 320  |                    |                                          |                    | 184                                      |
| ※ 1AZ240     | 216                   | 240  | 264  |                                          |                             | 215                                                                       | 343  |                    |                                          |                    | 192                                      |
| ※ 1AZ240 – Y | 230                   | 240  | 250  | 5000                                     | 0.5                         | 215                                                                       | 325  | 1.2                | 0.2                                      | 10                 | 216                                      |
| ※ 1AZ240 – Z | 240                   | 250  | 260  |                                          |                             | 225                                                                       | 338  |                    |                                          |                    | 225                                      |
| ※ 1AZ270     | 243                   | 270  | 297  |                                          |                             | 243                                                                       | 385  |                    |                                          |                    | 216                                      |
| ※ 1AZ270 – X | 250                   | 260  | 270  | 5000                                     | 0.5                         | 221                                                                       | 350  | 1.2                | 0.2                                      | 10                 | 234                                      |
| ※ 1AZ270 – Y | 260                   | 270  | 280  |                                          |                             | 228                                                                       | 362  |                    |                                          |                    | 243                                      |
| ※ 1AZ270 – Z | 270                   | 280  | 290  |                                          |                             | 236                                                                       | 374  |                    |                                          |                    | 252                                      |
| ※ 1AZ300     | 270                   | 300  | 330  |                                          |                             | 270                                                                       | 428  |                    |                                          |                    | 240                                      |
| ※ 1AZ300 – X | 280                   | 290  | 300  | 5000                                     | 0.5                         | 244                                                                       | 388  | 1.2                | 0.2                                      | 10                 | 261                                      |
| ※ 1AZ300 – Y | 290                   | 300  | 310  |                                          |                             | 253                                                                       | 402  |                    |                                          |                    | 270                                      |
| ※ 1AZ300 – Z | 300                   | 310  | 320  |                                          |                             | 261                                                                       | 415  |                    |                                          |                    | 279                                      |
| ※ 1AZ330     | 297                   | 330  | 363  |                                          |                             | 296                                                                       | 470  |                    |                                          |                    | 264                                      |
| ※ 1AZ330 – X | 310                   | 320  | 330  | 5000                                     | 0.5                         | 270                                                                       | 428  | 1.2                | 0.2                                      | 10                 | 288                                      |
| ※ 1AZ330 – Y | 320                   | 330  | 340  |                                          |                             | 278                                                                       | 441  |                    |                                          |                    | 297                                      |
| ※ 1AZ330 – Z | 330                   | 340  | 350  |                                          |                             | 287                                                                       | 455  |                    |                                          |                    | 306                                      |

※ Made by order

