

TOSHIBA ZENER DIODE SILICON DIFFUSED JUNCTION TYPE

1Z6.2~1Z390, 1Z6.8A~1Z30A

CONSTANT VOLTAGE REGULATION

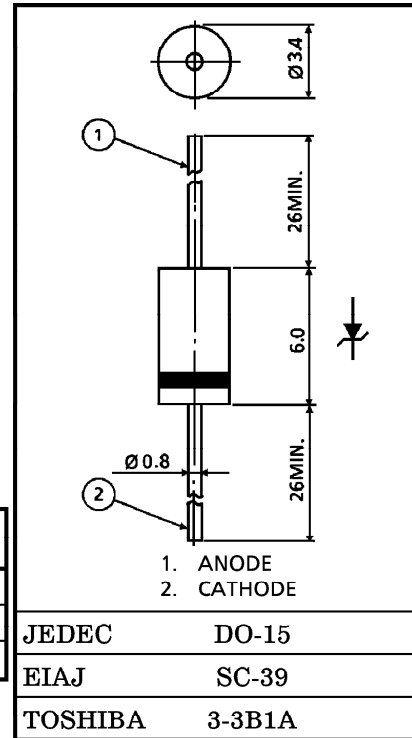
Unit in mm

TRANSIENT SUPPRESSORS

- Average Power Dissipation : $P=1W$
- Peak Reverse Power Dissipation : $P_{RSM}=200W$ at $t_w=200\mu s$
- Zener Voltage : $V_Z=6.2\sim 390V$
- Tolerance of Zener Voltage
 1Z6.2 Series : $\pm 10\%$
 1Z6.8A Series : $\pm 5\%$
- Plastic Mold Package

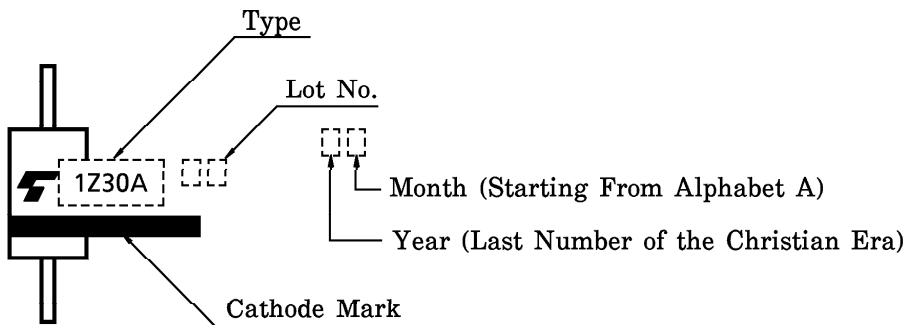
MAXIMUM RATINGS ($T_a = 25^\circ C$)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---------------------------|-----------|-----------|------|
| Power Dissipation | P | 1 | W |
| Junction Temperature | T_j | -40 ~ 150 | °C |
| Storage Temperature Range | T_{stg} | -40 ~ 150 | °C |



Weight : 0.42g

MARK



Color : Silver

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| TYPE | ZENER CHARACTERISTICS | | | | | TEMPERATURE COEFFICIENT OF ZENER VOLTAGE α_T (mV/°C) | | FORWARD VOLTAGE | | REVERSE CURRENT | |
|--------|-------------------------|------|------|------------------------------------|--------------------------------|---|------|-----------------|-------------------------------|-------------------|-------------------------------|
| | ZENER VOLTAGE V_Z (V) | | | ZENER IMPEDANCE r_d (Ω) | MEASUREMENT CURRENT I_Z (mA) | TYP. | MAX. | V_F (V) | MEASUREMENT CURRENT I_F (A) | I_R (μA) | MEASUREMENT VOLTAGE V_R (V) |
| | MIN. | TYP. | MAX. | MAX. | MAX. | | | | | | |
| 1Z6.2 | 5.6 | 6.2 | 6.8 | 60 | 10 | 1.5 | 2 | 1.2 | 0.2 | 10 | 3 |
| 1Z6.8 | 6.2 | 6.8 | 7.4 | 60 | 10 | 3 | 4 | 1.2 | 0.2 | 10 | 2 |
| 1Z6.8A | 6.45 | 6.8 | 7.14 | | | | | | | | |
| 1Z7.5 | 6.8 | 7.5 | 8.3 | 30 | 10 | 4 | 5 | 1.2 | 0.2 | 10 | 4.5 |
| 1Z7.5A | 7.13 | 7.5 | 7.87 | | | | | | | | |
| 1Z8.2 | 7.4 | 8.2 | 9.1 | 30 | 10 | 4 | 6 | 1.2 | 0.2 | 10 | 4.9 |
| 1Z8.2A | 7.79 | 8.2 | 86.1 | | | | | | | | |
| 1Z9.1 | 8.2 | 9.1 | 10.1 | 30 | 10 | 5 | 8 | 1.2 | 0.2 | 10 | 5.5 |
| 1Z9.1A | 8.65 | 9.1 | 9.55 | | | | | | | | |
| 1Z10 | 9.0 | 10 | 11.0 | 30 | 10 | 6 | 9 | 1.2 | 0.2 | 10 | 6 |
| 1Z10A | 9.5 | 10 | 10.5 | | | | | | | | |
| 1Z11 | 9.9 | 11 | 12.1 | 30 | 10 | 7 | 11 | 1.2 | 0.2 | 10 | 7 |
| 1Z11A | 10.5 | 11 | 11.5 | | | | | | | | |
| 1Z12 | 10.8 | 12 | 13.2 | 30 | 10 | 8 | 13 | 1.2 | 0.2 | 10 | 8 |
| 1Z12A | 11.4 | 12 | 12.6 | | | | | | | | |
| 1Z13 | 11.7 | 13 | 14.3 | 30 | 10 | 9 | 14 | 1.2 | 0.2 | 10 | 9 |
| 1Z13A | 12.4 | 13 | 13.6 | | | | | | | | |
| 1Z15 | 13.5 | 15 | 16.5 | 30 | 10 | 11 | 17 | 1.2 | 0.2 | 10 | 10 |
| 1Z15A | 14.3 | 15 | 15.8 | | | | | | | | |
| 1Z16 | 14.4 | 16 | 17.6 | 30 | 10 | 12 | 19 | 1.2 | 0.2 | 10 | 11 |
| 1Z16A | 15.2 | 16 | 16.8 | | | | | | | | |
| 1Z18 | 16.2 | 18 | 19.8 | 30 | 10 | 14 | 23 | 1.2 | 0.2 | 10 | 13 |
| 1Z18A | 17.1 | 18 | 18.9 | | | | | | | | |
| 1Z20 | 18.0 | 20 | 22.0 | 30 | 10 | 16 | 26 | 1.2 | 0.2 | 10 | 14 |
| 1Z20A | 19.0 | 20 | 21 | | | | | | | | |
| 1Z22 | 19.8 | 22 | 24.2 | 30 | 10 | 18 | 28 | 1.2 | 0.2 | 10 | 16 |
| 1Z22A | 20.9 | 22 | 23.1 | | | | | | | | |
| 1Z24 | 21.6 | 24 | 26.4 | 30 | 10 | 20 | 32 | 1.2 | 0.2 | 10 | 17 |
| 1Z24A | 22.8 | 24 | 25.2 | | | | | | | | |
| 1Z27 | 24.3 | 27 | 29.7 | 30 | 10 | 23 | 36 | 1.2 | 0.2 | 10 | 19 |
| 1Z27A | 25.7 | 27 | 28.3 | | | | | | | | |
| 1Z30 | 27.0 | 30 | 33.0 | 30 | 10 | 25 | 40 | 1.2 | 0.2 | 10 | 21 |
| 1Z30A | 28.5 | 30 | 31.5 | | | | | | | | |
| 1Z33 | 29.7 | 33 | 36.3 | 30 | 10 | 26 | 41 | 1.2 | 0.2 | 10 | 26.4 |
| 1Z36 | 32.4 | 36 | 39.6 | 30 | 9 | 28 | 45 | 1.2 | 0.2 | 10 | 28.8 |
| 1Z43 | 38.7 | 43 | 47.3 | 40 | 7 | 33 | 53 | 1.2 | 0.2 | 10 | 34.4 |
| 1Z47 | 42.3 | 47 | 51.7 | 65 | 6 | 38 | 60 | 1.2 | 0.2 | 10 | 37.6 |

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| TYPE | ZENER CHARACTERISTICS | | | | | TEMPERATURE COEFFICIENT OF ZENER VOLTAGE α_T (mV/°C) | | FORWARD VOLTAGE | | REVERSE CURRENT | |
|-------|-------------------------|------|------|------------------------------------|--------------------------------|---|------|-----------------|-------------------------------|------------------|-------------------------------|
| | ZENER VOLTAGE V_Z (V) | | | ZENER IMPEDANCE r_d (Ω) | MEASUREMENT CURRENT I_Z (mA) | TYP. | MAX. | V_F (V) | MEASUREMENT CURRENT I_F (A) | I_R (μ A) | MEASUREMENT VOLTAGE V_R (V) |
| | MIN. | TYP. | MAX. | MAX. | | | | | | | |
| | | | | | | | | | | | |
| 1Z51 | 45.9 | 51 | 56.1 | 65 | 6 | 43 | 68 | 1.2 | 0.2 | 10 | 40.8 |
| 1Z68 | 61.2 | 68 | 74.8 | 120 | 4 | 57 | 90 | 1.2 | 0.2 | 10 | 54.4 |
| 1Z75 | 67.5 | 75 | 82.5 | 150 | 4 | 66 | 104 | 1.2 | 0.2 | 10 | 60 |
| 1Z82 | 73.8 | 82 | 90.2 | 170 | 3 | 71 | 113 | 1.2 | 0.2 | 10 | 65.4 |
| 1Z100 | 90 | 100 | 110 | 300 | 3 | 87 | 138 | 1.2 | 0.2 | 10 | 80 |
| 1Z110 | 99 | 110 | 121 | 300 | 3 | 96 | 152 | 1.2 | 0.2 | 10 | 88 |
| 1Z150 | 135 | 150 | 165 | 450 | 2 | 136 | 212 | 1.2 | 0.2 | 10 | 120 |
| 1Z180 | 162 | 180 | 198 | 500 | 1.5 | 161 | 255 | 1.2 | 0.2 | 10 | 144 |
| 1Z330 | 297 | 330 | 363 | 5000 | 1 | 297 | 472 | 1.2 | 0.2 | 10 | 264 |
| 1Z390 | 351 | 390 | 429 | 10000 | 0.5 | 350 | 555 | 1.2 | 0.2 | 10 | 312 |

