

TOSHIBA ZENER DIODE SILICON DIFFUSED TYPE

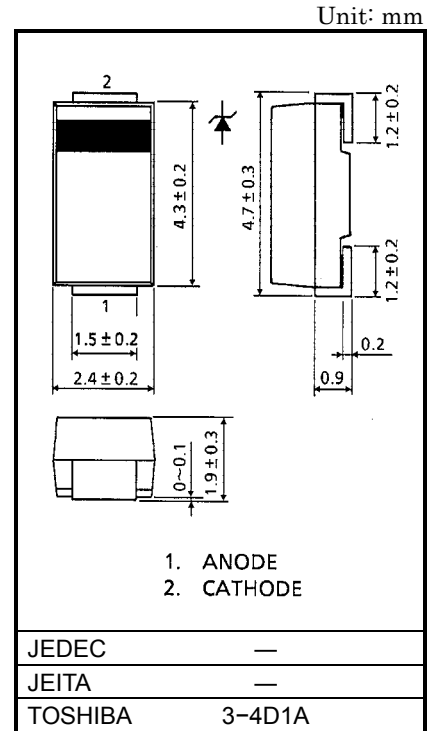
U1ZB6.8~U1ZB390

CONSTANT VOLTAGE REGULATION
TRANSIENT SUPPRESSORS

- Average Power Dissipation : $P = 1.0 \text{ W}$
- Zener Voltage : $V_Z = 6.8 \sim 390 \text{ V}$
- Surface Mounting Plastic Mold Package

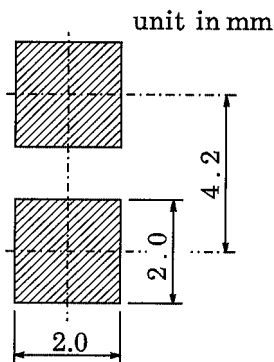
MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

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

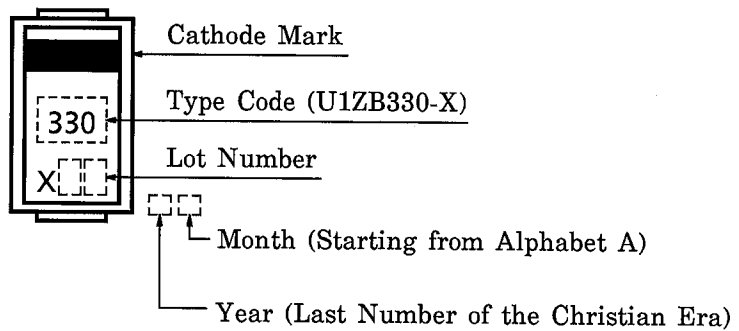


Weight: 0.06g

STANDARD SOLDERING PAD



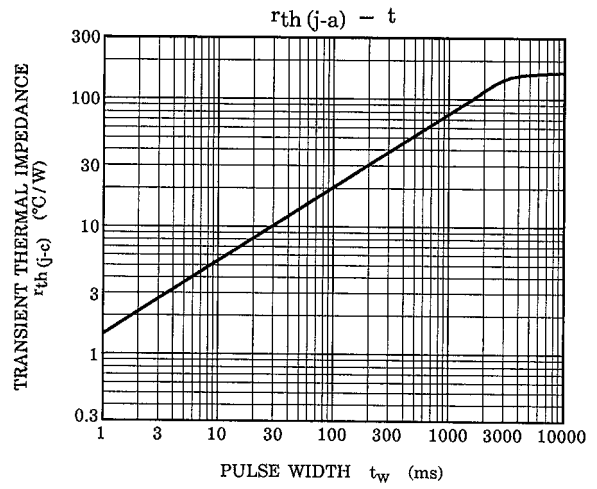
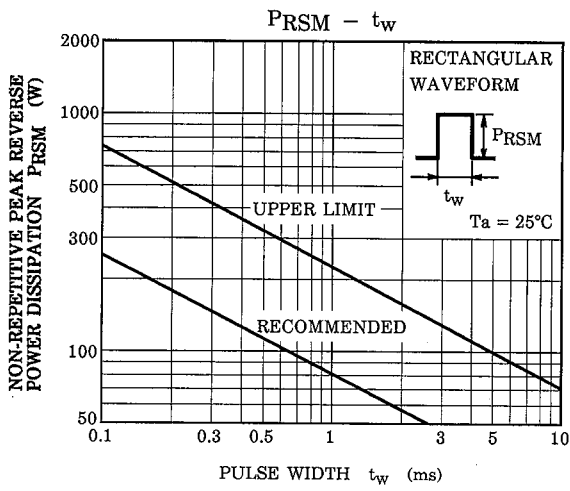
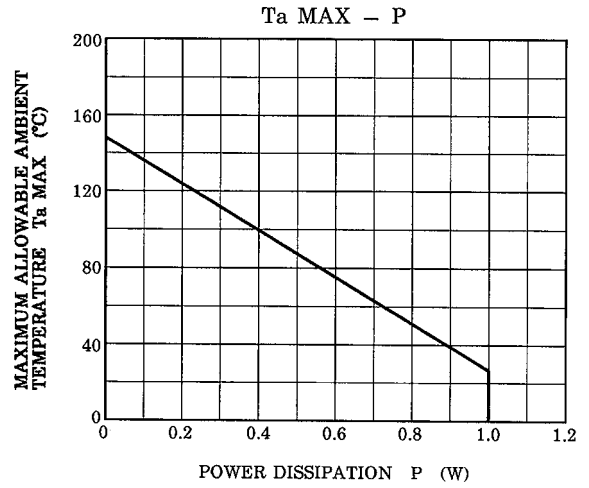
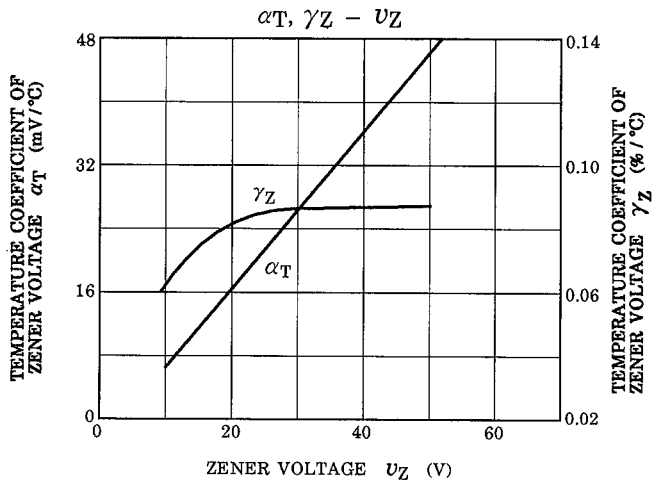
MARK



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 (μ A) | MEASUREMENT VOLTAGE V_R (V) |
| | MIN | TYP. | MAX | MAX | | | | | | | |
| U1ZB6.8 | 6.2 | 6.8 | 7.4 | 60 | 10 | 3 | 4 | 1.2 | 0.2 | 10 | 3 |
| U1ZB7.5 | 6.8 | 7.5 | 8.3 | 30 | 10 | 4 | 5 | 1.2 | 0.2 | 10 | 4.5 |
| U1ZB8.2 | 7.4 | 8.2 | 9.1 | 30 | 10 | 4 | 6 | 1.2 | 0.2 | 10 | 4.9 |
| U1ZB9.1 | 8.2 | 9.1 | 10.1 | 30 | 10 | 5 | 8 | 1.2 | 0.2 | 10 | 5.5 |
| U1ZB10 | 9.0 | 10 | 11.0 | 30 | 10 | 6 | 9 | 1.2 | 0.2 | 10 | 6 |
| U1ZB11 | 9.9 | 11 | 12.1 | 30 | 10 | 7 | 11 | 1.2 | 0.2 | 10 | 7 |
| U1ZB12 | 10.8 | 12 | 13.2 | 30 | 10 | 8 | 13 | 1.2 | 0.2 | 10 | 8 |
| U1ZB13 | 11.7 | 13 | 14.3 | 30 | 10 | 9 | 14 | 1.2 | 0.2 | 10 | 9 |
| U1ZB15 | 13.5 | 15 | 16.5 | 30 | 10 | 11 | 17 | 1.2 | 0.2 | 10 | 10 |
| U1ZB16 | 14.4 | 16 | 17.6 | 30 | 10 | 12 | 19 | 1.2 | 0.2 | 10 | 11 |
| U1ZB18 | 16.2 | 18 | 19.8 | 30 | 10 | 14 | 23 | 1.2 | 0.2 | 10 | 13 |
| U1ZB20 | 18.0 | 20 | 22.0 | 30 | 10 | 16 | 26 | 1.2 | 0.2 | 10 | 14 |
| U1ZB22 | 19.8 | 22 | 24.2 | 30 | 10 | 18 | 28 | 1.2 | 0.2 | 10 | 16 |
| U1ZB24 | 21.6 | 24 | 26.4 | 30 | 10 | 20 | 32 | 1.2 | 0.2 | 10 | 17 |
| U1ZB27 | 24.3 | 27 | 29.7 | 30 | 10 | 23 | 36 | 1.2 | 0.2 | 10 | 19 |
| U1ZB30 | 27.0 | 30 | 33.0 | 30 | 10 | 25 | 40 | 1.2 | 0.2 | 10 | 21 |
| U1ZB33 | 29.7 | 33 | 36.3 | 30 | 10 | 26 | 41 | 1.2 | 0.2 | 10 | 26.4 |
| U1ZB36 | 32.4 | 36 | 39.6 | 30 | 9 | 28 | 45 | 1.2 | 0.2 | 10 | 28.8 |
| U1ZB43 | 38.7 | 43 | 47.3 | 40 | 7 | 33 | 53 | 1.2 | 0.2 | 10 | 34.4 |
| U1ZB47 | 42.3 | 47 | 51.7 | 65 | 6 | 38 | 60 | 1.2 | 0.2 | 10 | 37.6 |
| U1ZB51 | 45.9 | 51 | 56.1 | 65 | 6 | 43 | 68 | 1.2 | 0.2 | 10 | 40.8 |
| U1ZB68 | 61.2 | 68 | 74.8 | 120 | 4 | 57 | 90 | 1.2 | 0.2 | 10 | 54.4 |
| U1ZB75 | 67.5 | 75 | 82.5 | 150 | 4 | 66 | 104 | 1.2 | 0.2 | 10 | 60 |
| U1ZB82 | 73.8 | 82 | 90.2 | 170 | 3 | 71 | 113 | 1.2 | 0.2 | 10 | 65.4 |
| U1ZB100 | 90 | 100 | 110 | 300 | 3 | 87 | 138 | 1.2 | 0.2 | 10 | 80 |
| U1ZB110 | 99 | 110 | 121 | 300 | 3 | 96 | 152 | 1.2 | 0.2 | 10 | 88 |
| U1ZB150 | 135 | 150 | 165 | 450 | 2 | 136 | 212 | 1.2 | 0.2 | 10 | 120 |
| U1ZB180 | 162 | 180 | 198 | 500 | 1.5 | 161 | 255 | 1.2 | 0.2 | 10 | 144 |
| U1ZB200 | 180 | 200 | 220 | 500 | 0.5 | 170 | 269 | 1.2 | 0.2 | 10 | 160 |
| U1ZB200-Y | 190 | 200 | 210 | | | 170 | 269 | | | | 160 |
| U1ZB200-Z | 200 | 210 | 220 | | | 178 | 286 | | | | 168 |
| U1ZB220 | 198 | 220 | 242 | 5000 | 0.5 | 200 | 309 | 1.2 | 0.2 | 10 | 176 |
| U1ZB220-Y | 210 | 220 | 230 | | | 200 | 309 | | | | 176 |
| U1ZB220-Z | 220 | 230 | 240 | | | 207 | 320 | | | | 184 |
| U1ZB240 | 216 | 240 | 264 | 5000 | 0.5 | 215 | 325 | 1.2 | 0.2 | 10 | 192 |
| U1ZB240-Y | 230 | 240 | 250 | | | 215 | 325 | | | | 216 |
| U1ZB240-Z | 240 | 250 | 260 | | | 225 | 338 | | | | 225 |

| TYPE | ZENER CHARACTERISTICS | | | | MEASURE- MENT CURRENT I_z (mA) | TEMPERATURE COEFFICIENT OF ZENER VOLTAGE α_T (mV / °C) | | FORWARD VOLTAGE | | REVERSE CURRENT | |
|-----------|-------------------------------|------|-----|------------------------------------------|-------------------------------------------|---------------------------------------------------------------------------|-----|--------------------|------------------------------------------|--------------------|------------------------------------------|
| | ZENER VOLTAGE V_z (V) | | | ZENER IMPEDANCE r_d (Ω) | | TYP. | MAX | V_F (V) | MEASURE- MENT CURRENT I_F (A) | I_R (μ A) | MEASURE- MENT VOLTAGE V_R (V) |
| | MIN | TYP. | MAX | MAX. | | | | | | | |
| U1ZB270 | 243 | 270 | 297 | 5000 | 0.5 | 243 | 385 | 1.2 | 0.2 | 10 | 216 |
| U1ZB270-X | 250 | 260 | 270 | | | 221 | 350 | | | | 234 |
| U1ZB270-Y | 260 | 270 | 280 | | | 228 | 362 | | | | 243 |
| U1ZB270-Z | 270 | 280 | 290 | | | 236 | 374 | | | | 252 |
| U1ZB300 | 270 | 300 | 330 | 5000 | 0.5 | 270 | 428 | 1.2 | 0.2 | 10 | 240 |
| U1ZB300-X | 280 | 290 | 300 | | | 244 | 388 | | | | 261 |
| U1ZB300-Y | 290 | 300 | 310 | | | 253 | 402 | | | | 270 |
| U1ZB300-Z | 300 | 310 | 320 | | | 261 | 415 | | | | 279 |
| U1ZB330 | 297 | 330 | 363 | 5000 | 0.5 | 296 | 470 | 1.2 | 0.2 | 10 | 264 |
| U1ZB330-X | 310 | 320 | 330 | | | 270 | 428 | | | | 288 |
| U1ZB330-Y | 320 | 330 | 340 | | | 278 | 441 | | | | 297 |
| U1ZB330-Z | 330 | 340 | 350 | | | 287 | 455 | | | | 306 |
| U1ZB390 | 351 | 390 | 429 | 10000 | 0.5 | 350 | 555 | 1.2 | 0.2 | 10 | 312 |



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