

POWER ZENERS

3 Watt

UZ706 SERIES
UZ806 SERIES
UZ706HR2 SERIES
UZ806HR2 SERIES

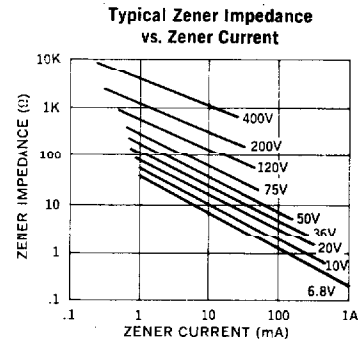
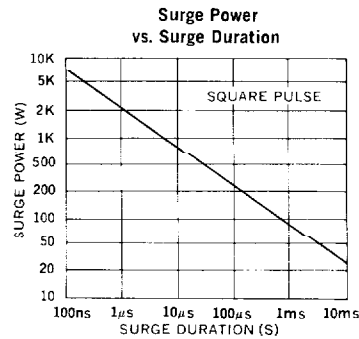
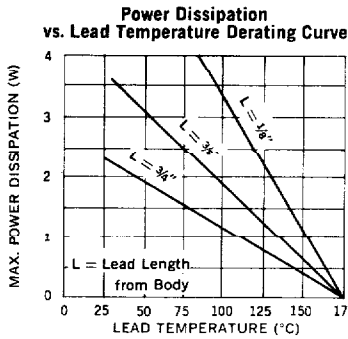
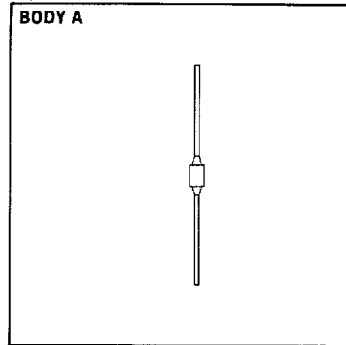
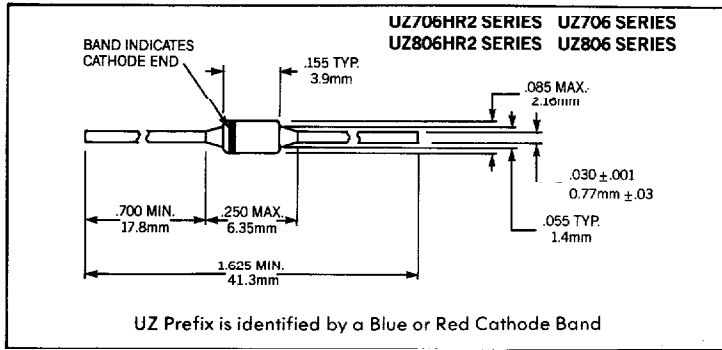
FEATURES

- 10 Times Greater Surge Rating than Conventional 1 Watt Types
- Small Physical Size

ABSOLUTE MAXIMUM RATINGS

| | |
|---|-------------------------------------|
| Zener Voltage, V_z | 6.8 to 400V |
| Continuous Current | See Table |
| Surge Current (8.3ms) | See Table |
| Surge Power | See Graph |
| Power | See Lead Temperature Derating Curve |
| Storage and Operating Temperature | -65°C to +175°C |

MECHANICAL SPECIFICATIONS



OPTIONAL HIGH RELIABILITY (HR2) SCREENING

The following tests are performed on 100% of the devices specified UZ706 through UZ140HR2.

| SCREEN | MIL-STD-750 METHOD | CONDITIONS |
|----------------------------------|--------------------|--|
| 1. High Temperature | 1032 | 24 Hours @ $T_A = 175^\circ\text{C}$ |
| 2. Temperature Cycling | 1051 | C, 20 Cycles, -65 to +175°C. No dwell required @ 25°C ≥ 10 min. at extremes |
| 3. Hermetic Seal @ Gross Leak | 1071 | E, ZYGLO |
| 4. Interim Electrical Parameters | GO/NO GO | $V_z + I_R$ @ 25°C |
| 5. Power Burn-in | 1038 | B, 96 Hours, $T_A = 25^\circ\text{C}$, I_z adjusted so that $150^\circ\text{C} \leq T_j \leq 175^\circ\text{C}$ |
| 6. Final Electrical Parameters | GO/NO GO | $V_z + I_R$ @ 25°C PDA = 10% (Final Electricals) |

| Type * | | Electrical Specifications at 25°C | | | | | | | Maximum Ratings | |
|---------------|----------------------|---|---------------------------------|----------------------------------|---------------------------------|---------------------|----------------------|--|---|--|
| | | Nominal Zener Voltage † V _Z @ I _{ZT} | Test Current I _{ZT} | Max. Zener Impedance ‡ | Maximum Reverse Leakage Current | | | Typ. Temp. Coefficient T _C @ I _{ZT} | Maximum Continuous Current * I _{ZM} | Maximum Surge Current †† I _S |
| | | | | Z _Z @ I _{ZT} | I _R @ V _R | ± 5% V _R | ± 10% V _R | | | |
| ±5% Tolerance | Jedec** Registration | Volts | mA | Ohms | µA | Volts | Volts | %/°C | mA | Amps |
| UZ706/706HR2 | 1N5063 | 6.8 | 75 | 2 | 500 | 5.2 | 4.9 | .04 | 440 | 10.0 |
| UZ707/707HR2 | 1N5064 | 7.5 | 75 | 2 | 300 | 5.7 | 5.4 | .04 | 400 | 8.0 |
| UZ708/708HR2 | 1N5065 | 8.2 | 75 | 3 | 200 | 6.2 | 5.9 | .05 | 360 | 7.0 |
| UZ709/709HR2 | 1N5066 | 9.1 | 75 | 3 | 100 | 6.9 | 6.6 | .05 | 330 | 6.0 |
| UZ710/710HR2 | 1N5067 | 10.0 | 75 | 4 | 40 | 7.6 | 7.2 | .06 | 300 | 5.0 |
| UZ712/712HR2 | 1N4883 | 12 | 65 | 5 | 10 | 9.1 | 8.6 | .07 | 250 | 4.0 |
| UZ713/713HR2 | 1N5069 | 13 | 50 | 6 | 10 | 9.9 | 9.3 | .07 | 230 | 4.0 |
| UZ714/714HR2 | 1N5070 | 14 | 50 | 6 | 10 | 10.6 | 10.1 | .07 | 210 | 4.0 |
| UZ715/715HR2 | 1N5071 | 15 | 50 | 6 | 10 | 11.4 | 10.8 | .07 | 200 | 3.0 |
| UZ716/716HR2 | 1N5072 | 16 | 50 | 7 | 5 | 12.2 | 11.5 | .07 | 185 | 3.0 |
| UZ718/718HR2 | 1N5073 | 18 | 40 | 8 | 5 | 13.7 | 12.9 | .08 | 170 | 2.0 |
| UZ720/720HR2 | 1N4884 | 20 | 40 | 9 | 5 | 15.2 | 14.4 | .08 | 150 | 2.0 |
| UZ722/722HR2 | 1N5074 | 22 | 30 | 10 | 5 | 16.7 | 15.8 | .08 | 135 | 2.0 |
| UZ724/724HR2 | 1N5075 | 24 | 30 | 10 | 5 | 18.2 | 17.3 | .08 | 125 | 1.5 |
| UZ727/727HR2 | 1N5076 | 27 | 25 | 12 | 1 | 20.6 | 19.4 | .09 | 110 | 1.5 |
| UZ730/730HR2 | 1N5077 | 30 | 25 | 15 | 1 | 22.8 | 21.6 | .090 | 100 | 1.5 |
| UZ733/733HR2 | 1N5078 | 33 | 20 | 21 | 1 | 25.1 | 23.7 | .090 | 90 | 1.2 |
| UZ736/736HR2 | 1N5079 | 36 | 20 | 21 | 1 | 27.4 | 25.9 | .090 | 85 | 1.0 |
| UZ740/740HR2 | 1N5081 | 40 | 20 | 27 | 1 | 30.4 | 28.8 | .095 | 75 | 1.0 |
| UZ745/745HR2 | 1N5003 | 45 | 15 | 37 | 1 | 34.2 | 32.4 | .095 | 65 | 0.8 |
| UZ750/750HR2 | 1N5085 | 50 | 15 | 50 | 1 | 38.0 | 36.0 | .095 | 60 | 0.8 |
| UZ756/756HR2 | 1N5087 | 56 | 10 | 70 | 1 | 42.6 | 40.3 | .095 | 55 | 0.7 |
| UZ760/760HR2 | 1N5088 | 60 | 10 | 70 | 1 | 45.7 | 43.2 | .095 | 50 | 0.6 |
| UZ770/770HR2 | 1N5091 | 70 | 10 | 90 | 1 | 53.3 | 50.5 | .095 | 45 | 0.6 |
| UZ775/775HR2 | 1N5092 | 75 | 10 | 100 | 1 | 56.0 | 54.0 | .095 | 40 | 0.5 |
| UZ780/780HR2 | 1N5093 | 80 | 10 | 115 | 1 | 60.8 | 57.7 | .095 | 35 | 0.4 |
| UZ790/790HR2 | 1N4096 | 90 | 8.0 | 150 | 1 | 68.5 | 64.8 | .095 | 30 | 0.4 |
| UZ110/110HR2 | 1N4097 | 100 | 5.0 | 175 | 1 | 76.0 | 72.0 | .100 | 30 | 0.4 |
| UZ111/111HR2 | 1N5096 | 110 | 5.0 | 250 | 1 | 83.6 | 79.2 | .100 | 25 | 0.3 |
| UZ112/112HR2 | 1N5097 | 120 | 5.0 | 325 | 1 | 91.2 | 86.4 | .100 | 25 | 0.2 |
| UZ113/113HR2 | 1N5098 | 130 | 5.0 | 375 | 1 | 98.8 | 93.6 | .100 | 20 | 0.20 |
| UZ114/114HR2 | 1N5099 | 140 | 5.0 | 550 | 1 | 106 | 101 | .100 | 20 | 0.20 |
| UZ115/115HR2 | 1N4098 | 150 | 5.0 | 650 | 1 | 114 | 108 | .100 | 20 | 0.20 |
| UZ116/116HR2 | 1N5100 | 160 | 4.0 | 700 | 1 | 122 | 115 | .100 | 20 | 0.15 |
| UZ117/117HR2 | 1N5101 | 170 | 4.0 | 750 | 1 | 129 | 122 | .100 | 18 | 0.15 |
| UZ118/118HR2 | 1N5102 | 180 | 4.0 | 850 | 1 | 137 | 129 | .100 | 18 | 0.10 |
| UZ119/119HR2 | 1N6103 | 190 | 4.0 | 900 | 1 | 144 | 137 | .100 | 15 | 0.10 |
| UZ120/120HR2 | 1N5104 | 200 | 4.0 | 950 | 1 | 152 | 144 | .100 | 15 | 0.10 |
| UZ122/122HR2 | 1N5105 | 220 | 3.0 | 1100 | 1 | 167 | 158 | .100 | 15 | 0.09 |
| UZ124/124HR2 | 1N5106 | 240 | 3.0 | 1300 | 1 | 182 | 173 | .105 | 12 | 0.09 |
| UZ126/126HR2 | 1N5107 | 260 | 3.0 | 1500 | 1 | 198 | 187 | .105 | 12 | 0.08 |
| UZ128/128HR2 | 1N5109 | 280 | 3.0 | 1700 | 1 | 213 | 202 | .105 | 10 | 0.08 |
| UZ130/130HR2 | 1N5110 | 300 | 3.0 | 1900 | 1 | 228 | 216 | .105 | 10 | 0.07 |
| UZ132/132HR2 | 1N5111 | 320 | 2.0 | 2100 | 1 | 243 | 230 | .105 | 9 | 0.07 |
| UZ134/134HR2 | 1N5113 | 340 | 2.0 | 2400 | 1 | 258 | 245 | .110 | 9 | 0.06 |
| UZ136/136HR2 | 1N5114 | 360 | 2.0 | 2700 | 1 | 274 | 259 | .110 | 8 | 0.06 |
| UZ138/138HR2 | 1N5115 | 380 | 2.0 | 3000 | 1 | 289 | 274 | .110 | 8 | 0.06 |
| UZ140/140HR2 | 1N5117 | 400 | 2.0 | 3500 | 1 | 304 | 288 | .110 | 7 | 0.06 |

* Specify 20% voltage tolerance by changing first numeral of type number from 7 to 9. (UZ709 becomes UZ909) or from 1 to 3 (UZ111 becomes UZ311).
 Specify 10% voltage tolerance by changing first numeral of type number from 7 to 8. (UZ709 becomes UZ809) or from 1 to 2 (UZ111 becomes UZ211).

** Jedec registration applies to ±5% tolerance zeners only.

† All zener voltages are measured with an automated test set using a 35 ms test time. Longer or shorter test times will have a corresponding effect on the measured value due to heating effects.

‡ Zener impedance is derived from the 60-cycle AC voltage created when AC current with RMS value of 10% of DC zener test current is superimposed on the test current.

* Maximum current based on 3 watt rating. See lead temperature derating curves for proper mounting methods.

†† Figures shown are for a peak sinusoidal surge current of 0.3ms duration using 60 cycle AC. The 0.3ms square pulse rating is 71% of the value shown.