

# POWER ZENERS

## 5 Watt

UZ5706 SERIES  
UZ5806 SERIES

4

### FEATURES

- 2 Times Greater Surge Rating than Conventional 10 Watt Zeners
- Small Physical Size

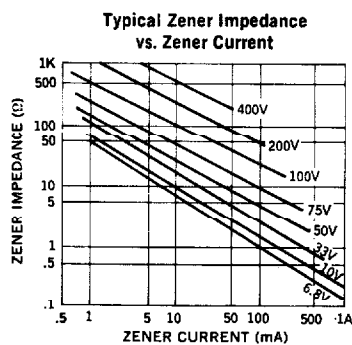
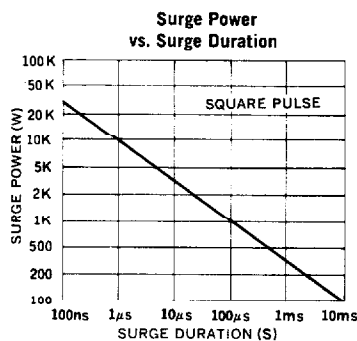
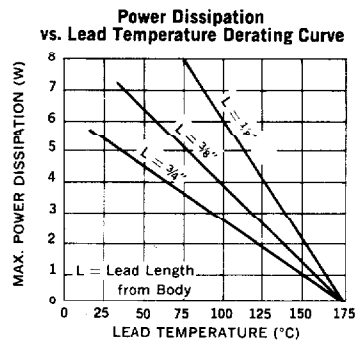
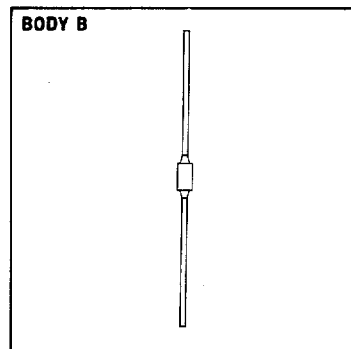
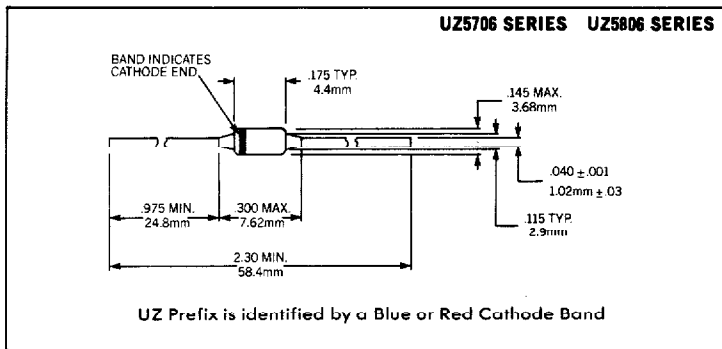
### DESCRIPTION

Fused-in-glass, metallurgically-bonded 5 watt zeners.

### 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



**Microsemi Corp.**  
**Watertown**  
The diode experts

| Type *        |                | Electrical Specifications at 25°C                           |                                 |  |                                 |                     |                      |   | Maximum Ratings                                |  |
|---------------|----------------|---|---------------------------------|--|---------------------------------|---------------------|----------------------|---|--|--|
|               |                | Nominal Zener Voltage †<br>V <sub>Z</sub> @ I <sub>ZT</sub> | Test Current<br>I <sub>ZT</sub> | Max. Zener Impedance §<br>Z <sub>Z</sub> @ I <sub>ZT</sub> | Maximum Reverse Leakage Current |                     |                      | Typ. Temp. Coeff.<br>T <sub>C</sub> @ I <sub>ZT</sub> | Maximum Continuous Current*<br>I <sub>ZM</sub> | Maximum Surge Current ‡<br>I <sub>SM</sub> |
|               |                |   |                                 |  | I <sub>R</sub>                  | ± 5% V <sub>R</sub> | ± 10% V <sub>R</sub> |   |  |  |
| ±5% Tolerance | ±10% Tolerance | Volts   | mA                              | Ohms   | µA                              | Volts               | Volts                | %/°C  | mA   | Amps                                       |
| UZ5706        | UZ5806         | 6.8   | 175                             | 1.0  | 500                             | 5.2                 | 4.9                  | .05   | 675  | 40   |
| UZ5707        | UZ5807         | 7.5   | 175                             | 1.5  | 400                             | 5.7                 | 5.4                  | .06   | 620  | 32   |
| UZ5708        | UZ5808         | 8.2   | 150                             | 1.5  | 200                             | 6.2                 | 5.9                  | .06   | 570  | 24   |
| UZ5709        | UZ5809         | 9.1   | 150                             | 2.0  | 100                             | 6.9                 | 6.6                  | .06   | 510  | 22   |
| UZ5710        | UZ5810         | 10.0  | 125                             | 2.0  | 75                              | 7.6                 | 7.2                  | .07   | 470  | 20   |
| UZ5712        | UZ5812         | 12  | 100                             | 2.5  | 50                              | 9.1                 | 8.6                  | .07   | 385  | 18   |
| UZ5713        | UZ5813         | 13  | 100                             | 3.0  | 25                              | 9.9                 | 9.3                  | .08   | 350  | 16   |
| UZ5714        | UZ5814         | 14  | 100                             | 3.0  | 20                              | 10.6                | 10.1                 | .08   | 320  | 14   |
| UZ5715        | UZ5815         | 15  | 75                              | 3.5  | 15                              | 11.4                | 10.8                 | .08   | 300  | 12   |
| UZ5716        | UZ5816         | 16  | 75                              | 3.5  | 10                              | 12.2                | 11.5                 | .08   | 275  | 10   |
| UZ5718        | UZ5818         | 18  | 65                              | 4.0  | 10                              | 13.7                | 12.9                 | .085  | 255  | 9.0  |
| UZ5720        | UZ5820         | 20  | 65                              | 4.5  | 10                              | 15.2                | 14.4                 | .085  | 220  | 8.0  |
| UZ5722        | UZ5822         | 22  | 50                              | 5.0  | 10                              | 16.7                | 15.8                 | .085  | 195  | 7.0  |
| UZ5724        | UZ5824         | 24  | 50                              | 5.0  | 10                              | 18.2                | 17.3                 | .090  | 180  | 6.5  |
| UZ5727        | UZ5827         | 27  | 50                              | 6.0  | 10                              | 20.6                | 19.4                 | .090  | 155  | 6.0  |
| UZ5730        | UZ5830         | 30  | 40                              | 8  | 10                              | 22.8                | 21.6                 | .09   | 140  | 5.5  |
| UZ5733        | UZ5833         | 33  | 40                              | 10   | 5                               | 25.1                | 23.7                 | .09   | 130  | 5.0  |
| UZ5736        | UZ5836         | 36  | 30                              | 11   | 5                               | 27.4                | 25.9                 | .095  | 120  | 4.5  |
| UZ5740        | UZ5840         | 40  | 30                              | 14   | 5                               | 30.4                | 28.8                 | .095  | 105  | 4.0  |
| UZ5745        | UZ5845         | 45  | 30                              | 20   | 5                               | 34.2                | 32.4                 | .095  | 95   | 3.5  |
| UZ5750        | UZ5850         | 50  | 25                              | 25   | 5                               | 38.0                | 36.0                 | .095  | 85   | 3.0  |
| UZ5756        | UZ5856         | 56  | 20                              | 35   | 5                               | 42.6                | 40.3                 | .095  | 80   | 2.8  |
| UZ5760        | UZ5860         | 60  | 20                              | 40   | 5                               | 45.7                | 43.2                 | .100  | 75   | 2.5  |
| UZ5770        | UZ5870         | 70  | 20                              | 50   | 5                               | 53.3                | 50.5                 | .100  | 65   | 2.3  |
| UZ5775        | UZ5875         | 75  | 15                              | 55   | 5                               | 56.0                | 54.0                 | .100  | 60   | 2.0  |
| UZ5780        | UZ5880         | 80  | 15                              | 80   | 5                               | 60.8                | 57.7                 | .100  | 55   | 1.8  |
| UZ5790        | UZ5890         | 90  | 15                              | 90   | 5                               | 68.5                | 64.8                 | .100  | 50   | 1.6  |
| UZ5110        | UZ5210         | 100   | 10                              | 100  | 5                               | 76.0                | 72.0                 | .100  | 45   | 1.4  |
| UZ5111        | UZ5211         | 110   | 10                              | 125  | 5                               | 83.6                | 79.2                 | .100  | 40   | 1.2  |
| UZ5112        | UZ5212         | 120   | 10                              | 170  | 5                               | 91.2                | 86.4                 | .100  | 38   | 1.0  |
| UZ5113        | UZ5213         | 130   | 10                              | 190  | 5                               | 98.8                | 93.6                 | .105  | 35   | 0.80                                       |
| UZ5114        | UZ5214         | 140   | 8                               | 230  | 5                               | 106.0               | 101.0                | .105  | 33   | 0.80                                       |
| UZ5115        | UZ5215         | 150   | 8                               | 330  | 5                               | 114.0               | 108.0                | .105  | 31   | 0.75                                       |
| UZ5116        | UZ5216         | 160   | 8                               | 350  | 5                               | 122.0               | 115.0                | .105  | 30   | 0.70                                       |
| UZ5117        | UZ5217         | 170   | 8                               | 380  | 5                               | 129.0               | 122.0                | .105  | 27   | 0.65                                       |
| UZ5118        | UZ5218         | 180   | 5                               | 450  | 5                               | 137                 | 129                  | .110  | 25   | 0.60                                       |
| UZ5119        | UZ5219         | 190   | 5                               | 470  | 5                               | 144                 | 137                  | .110  | 24   | 0.55                                       |
| UZ5120        | UZ5220         | 200   | 5                               | 500  | 5                               | 152                 | 144                  | .110  | 22   | 0.50                                       |
| UZ5122        | UZ5222         | 220   | 5                               | 550  | 5                               | 167                 | 158                  | .115  | 20   | 0.45                                       |
| UZ5124        | UZ5224         | 240   | 5                               | 650  | 5                               | 182                 | 173                  | .115  | 18   | 0.40                                       |
| UZ5126        | UZ5226         | 260   | 5                               | 750  | 5                               | 198                 | 187                  | .120  | 17   | 0.35                                       |
| UZ5128        | UZ5228         | 280   | 4                               | 850  | 5                               | 213                 | 202                  | .120  | 16   | 0.30                                       |
| UZ5130        | UZ5230         | 300   | 4                               | 950  | 5                               | 228                 | 216                  | .120  | 15   | 0.25                                       |
| UZ5132        | UZ5232         | 320   | 4                               | 1100   | 5                               | 243                 | 230                  | .120  | 14   | 0.24                                       |
| UZ5134        | UZ5234         | 340   | 4                               | 1200   | 5                               | 258                 | 245                  | .120  | 13   | 0.23                                       |
| UZ5136        | UZ5236         | 360   | 3                               | 1400   | 5                               | 274                 | 259                  | .120  | 12   | 0.22                                       |
| UZ5138        | UZ5238         | 380   | 3                               | 1500   | 5                               | 289                 | 274                  | .120  | 12   | 0.21                                       |
| UZ5140        | UZ5240         | 400   | 3                               | 1800   | 5                               | 304                 | 288                  | .120  | 11   | 0.20                                       |

Temperature Range: Operating and Storage -65°C to +175°C.

- \* Specify 20% tolerance by changing the second numeral of type number from 8 to 9 (UZ5809 becomes UZ5909) or from 2 to 3 (UZ5211 becomes UZ5311).
- † All zener voltages are measured with an automated test set using a 35 millisecond 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 5 watt rating. See lead temperature derating curves for proper mounting methods.
- ‡ Figures shown are for a peak sinusoidal surge current of 8.3ms duration using 60 cycle AC. The 8.3ms square pulse rating is 71% of the value shown.

Several of the above types now have JEDEC 1N type numbers. The following cross-reference table lists the appropriate 1N numbers; specifications are same as above.

| JEDEC # | MICROSEMI TYPE | JEDEC # | MICROSEMI TYPE | JEDEC # | MICROSEMI TYPE |
|---------|----------------|---------|----------------|---------|----------------|
| 1N5118  | UZ5714         | 1N5124  | UZ5780         | 1N5130  | UZ5128         |
| 1N5119  | UZ5740         | 1N5125  | UZ5790         | 1N5131  | UZ5132         |
| 1N5120  | UZ5745         | 1N5126  | UZ5114         | 1N5132  | UZ5134         |
| 1N5121  | UZ5750         | 1N5127  | UZ5117         | 1N5133  | UZ5138         |
| 1N5122  | UZ5760         | 1N5128  | UZ5119         | 1N5134  | UZ5140         |
| 1N5123  | UZ5770         | 1N5129  | UZ5126         |         |                |

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