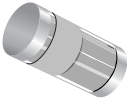


# Surface Mount Zener Diodes

## CZRL4728 Thru CZRL4764

Voltage: 3.3 - 100 Volts  
Power: 1 Watt

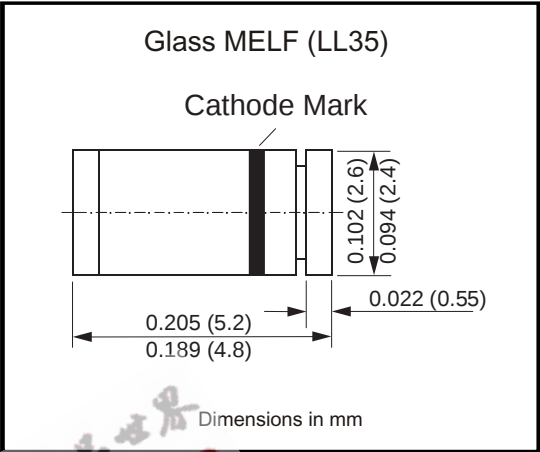


### Features

Silicon Planar Power Zener Diodes  
For use in stabilizing and clipping circuits with higher power rating.  
Standard Zener voltage tolerance is  $\pm 10\%$ . Add suffix "A" for  $\pm 5\%$  tolerance.  
Other Zener voltages and tolerances are available upon request.

### Mechanical data

Case: MELF Glass Case  
Weight: approx. 0.25g



### Maximum Ratings and Electrical Characteristics

| Parameter                                    | Symbol    | Value              | Unit          |
|----------------------------------------------|-----------|--------------------|---------------|
| Zener Current (see Table "Characteristics")  |           |                    |               |
| Power Dissipation at $T_{amb} = 25^{\circ}C$ | $P_{tot}$ | 1.0 <sup>(1)</sup> | W             |
| Thermal Resistance Junction to Ambient Air   | $R_{JA}$  | 170 <sup>(1)</sup> | $^{\circ}C/W$ |
| Junction Temperature                         | $T_j$     | 200                | $^{\circ}C$   |
| Storage Temperature Range                    | $T_s$     | -65 to +200        | $^{\circ}C$   |

Note: (1) Valid provided that electrodes are kept at ambient temperature

# Surface Mount Zener Diodes

| Type No. | Nominal<br>Zener<br>Voltage<br>at I <sub>ZT</sub><br>V <sub>Z</sub> (V)<br>(Note 3.) | Test<br>current<br>I <sub>ZT</sub><br>(mA) | Maximum Zener Impedance<br>(Note 1.)        |                          |                         | Max reverse Leakage<br>Current |                       | Surge<br>Current at<br>T <sub>A</sub> = 25°C<br>I <sub>r</sub> (mA) | Maximum<br>Regulator<br>Current<br>I <sub>ZM</sub> (mA)<br>(Note 2.) |
|----------|--------------------------------------------------------------------------------------|--------------------------------------------|---------------------------------------------|--------------------------|-------------------------|--------------------------------|-----------------------|---------------------------------------------------------------------|----------------------------------------------------------------------|
|          |                                                                                      |                                            | Z <sub>ZT</sub> at I <sub>ZT</sub><br>(Ohm) | Z <sub>ZK</sub><br>(Ohm) | I <sub>ZK</sub><br>(mA) | I <sub>R</sub><br>(uA)         | V <sub>R</sub><br>(V) |                                                                     |                                                                      |
| CZRL4728 | 3.3                                                                                  | 76                                         | 10                                          | 400                      | 1                       | 100                            | 1                     | 1380                                                                | 276                                                                  |
| CZRL4729 | 3.6                                                                                  | 69                                         | 10                                          | 400                      | 1                       | 100                            | 1                     | 1260                                                                | 252                                                                  |
| CZRL4730 | 3.9                                                                                  | 64                                         | 9                                           | 400                      | 1                       | 50                             | 1                     | 1190                                                                | 234                                                                  |
| CZRL4731 | 4.3                                                                                  | 58                                         | 9                                           | 400                      | 1                       | 10                             | 1                     | 1070                                                                | 217                                                                  |
| CZRL4732 | 4.7                                                                                  | 53                                         | 8                                           | 500                      | 1                       | 10                             | 1                     | 970                                                                 | 193                                                                  |
| CZRL4733 | 5.1                                                                                  | 49                                         | 7                                           | 550                      | 1                       | 10                             | 1                     | 890                                                                 | 178                                                                  |
| CZRL4734 | 5.6                                                                                  | 45                                         | 5                                           | 600                      | 1                       | 10                             | 2                     | 810                                                                 | 162                                                                  |
| CZRL4735 | 6.2                                                                                  | 41                                         | 2                                           | 700                      | 1                       | 10                             | 3                     | 730                                                                 | 146                                                                  |
| CZRL4736 | 6.8                                                                                  | 37                                         | 3.5                                         | 700                      | 1                       | 10                             | 4                     | 660                                                                 | 133                                                                  |
| CZRL4737 | 7.5                                                                                  | 34                                         | 4                                           | 700                      | 0.5                     | 10                             | 5                     | 605                                                                 | 121                                                                  |
| CZRL4738 | 8.2                                                                                  | 31                                         | 4.5                                         | 700                      | 0.5                     | 10                             | 6                     | 550                                                                 | 110                                                                  |
| CZRL4739 | 9.1                                                                                  | 28                                         | 5                                           | 700                      | 0.5                     | 10                             | 7                     | 500                                                                 | 100                                                                  |
| CZRL4740 | 10                                                                                   | 25                                         | 7                                           | 700                      | 0.25                    | 10                             | 7.6                   | 454                                                                 | 91                                                                   |
| CZRL4741 | 11                                                                                   | 23                                         | 8                                           | 700                      | 0.25                    | 5                              | 8.4                   | 414                                                                 | 83                                                                   |
| CZRL4742 | 12                                                                                   | 21                                         | 9                                           | 700                      | 0.25                    | 5                              | 9.1                   | 380                                                                 | 76                                                                   |
| CZRL4743 | 13                                                                                   | 19                                         | 10                                          | 700                      | 0.25                    | 5                              | 9.9                   | 344                                                                 | 69                                                                   |
| CZRL4744 | 15                                                                                   | 17                                         | 14                                          | 700                      | 0.25                    | 5                              | 11.4                  | 304                                                                 | 61                                                                   |
| CZRL4745 | 16                                                                                   | 15.5                                       | 16                                          | 700                      | 0.25                    | 5                              | 12.2                  | 285                                                                 | 57                                                                   |
| CZRL4746 | 18                                                                                   | 14                                         | 20                                          | 750                      | 0.25                    | 5                              | 13.7                  | 250                                                                 | 50                                                                   |
| CZRL4747 | 20                                                                                   | 12.5                                       | 22                                          | 750                      | 0.25                    | 5                              | 15.2                  | 225                                                                 | 45                                                                   |
| CZRL4748 | 22                                                                                   | 11.5                                       | 23                                          | 750                      | 0.25                    | 5                              | 16.7                  | 205                                                                 | 41                                                                   |
| CZRL4749 | 24                                                                                   | 10.5                                       | 25                                          | 750                      | 0.25                    | 5                              | 18.2                  | 190                                                                 | 38                                                                   |
| CZRL4750 | 27                                                                                   | 9.5                                        | 35                                          | 750                      | 0.25                    | 5                              | 20.6                  | 170                                                                 | 34                                                                   |
| CZRL4751 | 30                                                                                   | 8.5                                        | 40                                          | 1000                     | 0.25                    | 5                              | 22.8                  | 150                                                                 | 30                                                                   |
| CZRL4752 | 33                                                                                   | 7.5                                        | 45                                          | 1000                     | 0.25                    | 5                              | 25.1                  | 135                                                                 | 27                                                                   |
| CZRL4753 | 36                                                                                   | 7                                          | 50                                          | 1000                     | 0.25                    | 5                              | 27.4                  | 125                                                                 | 25                                                                   |
| CZRL4754 | 39                                                                                   | 6.5                                        | 60                                          | 1000                     | 0.25                    | 5                              | 29.7                  | 115                                                                 | 23                                                                   |
| CZRL4755 | 43                                                                                   | 6                                          | 70                                          | 1500                     | 0.25                    | 5                              | 32.7                  | 110                                                                 | 22                                                                   |
| CZRL4756 | 47                                                                                   | 5.5                                        | 80                                          | 1500                     | 0.25                    | 5                              | 35.8                  | 95                                                                  | 19                                                                   |
| CZRL4757 | 51                                                                                   | 5                                          | 95                                          | 1500                     | 0.25                    | 5                              | 38.8                  | 90                                                                  | 18                                                                   |
| CZRL4758 | 56                                                                                   | 4.5                                        | 110                                         | 2000                     | 0.25                    | 5                              | 42.6                  | 80                                                                  | 16                                                                   |
| CZRL4759 | 62                                                                                   | 4                                          | 125                                         | 2000                     | 0.25                    | 5                              | 47.1                  | 70                                                                  | 14                                                                   |
| CZRL4760 | 68                                                                                   | 3.7                                        | 150                                         | 2000                     | 0.25                    | 5                              | 51.7                  | 65                                                                  | 13                                                                   |
| CZRL4761 | 75                                                                                   | 3.3                                        | 175                                         | 2000                     | 0.25                    | 5                              | 56                    | 60                                                                  | 12                                                                   |
| CZRL4762 | 82                                                                                   | 3                                          | 200                                         | 3000                     | 0.25                    | 5                              | 62.2                  | 55                                                                  | 11                                                                   |
| CZRL4763 | 91                                                                                   | 2.8                                        | 250                                         | 3000                     | 0.25                    | 5                              | 69.2                  | 50                                                                  | 10                                                                   |
| CZRL4764 | 100                                                                                  | 2.5                                        | 350                                         | 3000                     | 0.25                    | 5                              | 76                    | 45                                                                  | 9                                                                    |

**Notes:** (1) The Zener impedance is derived from the 1KHZ AC voltage which results when an AC current having an RMS value equal to 10% of the Zener current ( $I_{ZT}$  or  $I_{ZK}$ ) is superimposed on  $I_{ZT}$  or  $I_{ZK}$ . Zener impedance is measured at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units

(2) Valid provided that electrodes at a distance of 10mm from case are kept at ambient temperature

(3) Measured under thermal equilibrium and DC test conditions.

## Rating and Characteristic Curves (CZRL4728 Thru CZRL4764)

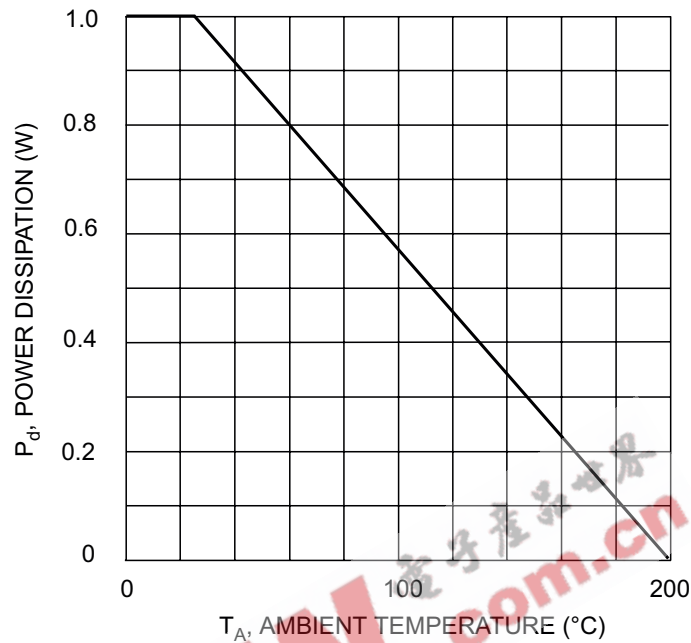


Fig. 1, Power Derating Curve

### Admissible power dissipation versus ambient temperature

Valid provided that electrodes are kept at ambient temperature

