



# GDZJ2.0~GDZJ56

AXIAL LEAD ZENER DIODES

**Voltage Range 2.0-56 Volts**

**Power 500mWatts**

## Features

- \* Planar Die construction
- \* 500mW Power Dissipation
- \* Ideally Suited for Automated Assembly Processes
- \* Both normal and Pb free product are available :  
Normal : 80~95% Sn, 5~20% Pb  
Pb free: 98.5% Sn above

## Mechanical Data

Case: Molded Glass DO-35

Terminals: Solderable per MIL-STD-202, Method 208

Polarity: See Diagram Below

Approx. Weight: 0.13 grams

Mounting Position: Any

Ordering information

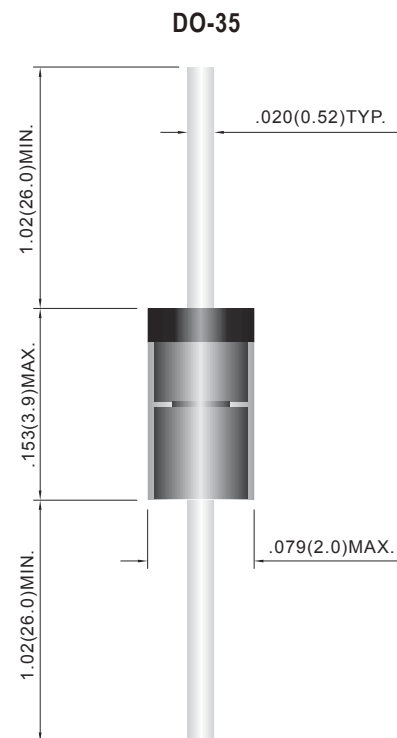
Suffix : " -35 " to order DO-35 Package

Packing information

B - 2K per Bulk box

T/R - 10K per 13" plastic Reel

T/B - 5K per horiz. tape & Ammo box



Dimensions in millimeters

## Maximum Ratings and Electrical Characteristics

| Parameter                         | Symbol           | Value       | Units |
|-----------------------------------|------------------|-------------|-------|
| Power Dissipation at Tamb = 25 °C | P <sub>TOT</sub> | 500         | mW    |
| Junction Temperature              | T <sub>J</sub>   | 175         | °C    |
| Storage Temperature Range         | T <sub>S</sub>   | -65 to +175 | °C    |

Valid provided that leads at a distance of 10mm from case are kept at ambient temperature.

| Parameter                                  | Symbol           | Min. | Typ. | Max. | Unit s |
|--------------------------------------------|------------------|------|------|------|--------|
| Thermal Resistance Junction to Ambient Air | R <sub>thA</sub> | --   | --   | 0.3  | K/mW   |
| Forward Voltage at IF = 100mA              | V <sub>F</sub>   | --   | --   | 1    | V      |

Valid provided that leads at a distance of 10 mm from case are kept at ambient temperature.

[Http://www.upm.com.tw](http://www.upm.com.tw)

E-mail: [upm.tw@msa.hinet.net](mailto:upm.tw@msa.hinet.net)



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| Part Number | CLASS | V <sub>z</sub> @ I <sub>zT</sub> |        | I <sub>z</sub><br>(mA) | V <sub>R</sub><br>(V) | I <sub>R</sub> ( $\mu$ A)<br>MAX | I <sub>zt</sub><br>(mA) | Z <sub>zT</sub> ( $\Omega$ )<br>MAX | I <sub>zk</sub><br>(mA) | Z <sub>zk</sub> ( $\Omega$ )<br>MAX | MARKING<br>CODE |
|-------------|-------|----------------------------------|--------|------------------------|-----------------------|----------------------------------|-------------------------|-------------------------------------|-------------------------|-------------------------------------|-----------------|
|             |       | Min. V                           | Max. V |                        |                       |                                  |                         |                                     |                         |                                     |                 |
| GDZJ 2.0    | A     | 1.88                             | 2.10   | 5                      | 0.5                   | 120                              | 5                       | 100                                 | 0.5                     | 1000                                | Z2A0            |
|             | B     | 2.02                             | 2.20   |                        |                       |                                  |                         |                                     |                         |                                     | Z2B0            |
| GDZJ 2.2    | A     | 2.12                             | 2.30   | 5                      | 0.7                   | 100                              | 5                       | 100                                 | 0.5                     | 1000                                | Z2A2            |
|             | B     | 2.22                             | 2.41   |                        |                       |                                  |                         |                                     |                         |                                     | Z2B2            |
| GDZJ 2.4    | A     | 2.33                             | 2.52   | 5                      | 1.0                   | 120                              | 5                       | 100                                 | 0.5                     | 1000                                | Z2A4            |
|             | B     | 2.43                             | 2.63   |                        |                       |                                  |                         |                                     |                         |                                     | Z2B4            |
| GDZJ 2.7    | A     | 2.54                             | 2.75   | 5                      | 1.0                   | 100                              | 5                       | 110                                 | 0.5                     | 1000                                | Z2A7            |
|             | B     | 2.69                             | 2.91   |                        |                       |                                  |                         |                                     |                         |                                     | Z2B7            |
| GDZJ 3.0    | A     | 2.85                             | 3.07   | 5                      | 1.0                   | 50                               | 5                       | 120                                 | 0.5                     | 1000                                | Z3A0            |
|             | B     | 3.01                             | 3.22   |                        |                       |                                  |                         |                                     |                         |                                     | Z3B0            |
| GDZJ 3.3    | A     | 3.16                             | 3.38   | 5                      | 1.0                   | 20                               | 5                       | 120                                 | 0.5                     | 1000                                | Z3A3            |
|             | B     | 3.32                             | 3.53   |                        |                       |                                  |                         |                                     |                         |                                     | Z3B3            |
| GDZJ 3.6    | A     | 3.455                            | 3.695  | 5                      | 1.0                   | 10                               | 5                       | 100                                 | 1                       | 1000                                | Z3A6            |
|             | B     | 3.60                             | 3.845  |                        |                       |                                  |                         |                                     |                         |                                     | Z3B6            |
| GDZJ 3.9    | A     | 3.74                             | 4.01   | 5                      | 1.0                   | 5                                | 5                       | 100                                 | 1                       | 1000                                | Z3A9            |
|             | B     | 3.89                             | 4.16   |                        |                       |                                  |                         |                                     |                         |                                     | Z3B9            |
| GDZJ 4.3    | A     | 4.04                             | 4.29   | 5                      | 1.0                   | 5                                | 5                       | 100                                 | 1                       | 1000                                | Z4A3            |
|             | B     | 4.17                             | 4.43   |                        |                       |                                  |                         |                                     |                         |                                     | Z4B3            |
|             | C     | 4.30                             | 4.57   |                        |                       |                                  |                         |                                     |                         |                                     | Z4C3            |
| GDZJ 4.7    | A     | 4.44                             | 4.68   | 5                      | 1.0                   | 5                                | 5                       | 90                                  | 1                       | 900                                 | Z4A7            |
|             | B     | 4.55                             | 4.80   |                        |                       |                                  |                         |                                     |                         |                                     | Z4B7            |
|             | C     | 4.68                             | 4.93   |                        |                       |                                  |                         |                                     |                         |                                     | Z4C7            |
| GDZJ 5.1    | A     | 4.81                             | 5.07   | 5                      | 1.5                   | 5                                | 5                       | 80                                  | 1                       | 800                                 | Z5A1            |
|             | B     | 4.94                             | 5.20   |                        |                       |                                  |                         |                                     |                         |                                     | Z5B1            |
|             | C     | 5.09                             | 5.37   |                        |                       |                                  |                         |                                     |                         |                                     | Z5C1            |
| GDZJ 5.6    | A     | 5.28                             | 5.55   | 5                      | 2.5                   | 5                                | 5                       | 60                                  | 1                       | 500                                 | Z5A6            |
|             | B     | 5.45                             | 5.73   |                        |                       |                                  |                         |                                     |                         |                                     | Z5B6            |
|             | C     | 5.61                             | 5.91   |                        |                       |                                  |                         |                                     |                         |                                     | Z5C6            |
| GDZJ 6.2    | A     | 5.78                             | 6.09   | 5                      | 3.0                   | 5                                | 5                       | 60                                  | 1                       | 300                                 | Z6A2            |
|             | B     | 5.96                             | 6.27   |                        |                       |                                  |                         |                                     |                         |                                     | Z6B2            |
|             | C     | 6.12                             | 6.44   |                        |                       |                                  |                         |                                     |                         |                                     | Z6C2            |
| GDZJ 6.8    | A     | 6.29                             | 6.63   | 5                      | 3.5                   | 2                                | 5                       | 20                                  | 0.5                     | 150                                 | Z6A8            |
|             | B     | 6.49                             | 6.83   |                        |                       |                                  |                         |                                     |                         |                                     | Z6B8            |
|             | C     | 6.66                             | 7.01   |                        |                       |                                  |                         |                                     |                         |                                     | Z6C8            |
| GDZJ 7.5    | A     | 6.85                             | 7.22   | 5                      | 4.0                   | 0.5                              | 5                       | 20                                  | 0.5                     | 120                                 | Z7A5            |
|             | B     | 7.07                             | 7.45   |                        |                       |                                  |                         |                                     |                         |                                     | Z7B5            |
|             | C     | 7.29                             | 7.67   |                        |                       |                                  |                         |                                     |                         |                                     | Z7C5            |
| GDZJ 8.2    | A     | 7.53                             | 7.92   | 5                      | 5.0                   | 0.5                              | 5                       | 20                                  | 0.5                     | 120                                 | Z8A2            |
|             | B     | 7.78                             | 8.19   |                        |                       |                                  |                         |                                     |                         |                                     | Z8B2            |
|             | C     | 8.03                             | 8.45   |                        |                       |                                  |                         |                                     |                         |                                     | Z8C2            |
| GDZJ 9.1    | A     | 8.29                             | 8.73   | 5                      | 6.0                   | 0.5                              | 5                       | 25                                  | 0.5                     | 120                                 | Z9A1            |
|             | B     | 8.57                             | 9.01   |                        |                       |                                  |                         |                                     |                         |                                     | Z9B1            |
|             | C     | 8.83                             | 9.30   |                        |                       |                                  |                         |                                     |                         |                                     | Z9C1            |
| GDZJ 10     | A     | 9.12                             | 9.59   | 5                      | 7.0                   | 0.2                              | 5                       | 30                                  | 0.5                     | 120                                 | Z10A            |
|             | B     | 9.41                             | 9.90   |                        |                       |                                  |                         |                                     |                         |                                     | Z10B            |
|             | C     | 9.70                             | 10.20  |                        |                       |                                  |                         |                                     |                         |                                     | Z10C            |
|             | D     | 9.94                             | 10.44  |                        |                       |                                  |                         |                                     |                         |                                     | Z11D            |
| GDZJ 11     | A     | 10.18                            | 10.71  | 5                      | 8.0                   | 0.2                              | 5                       | 30                                  | 0.5                     | 120                                 | Z11A            |
|             | B     | 10.50                            | 11.05  |                        |                       |                                  |                         |                                     |                         |                                     | Z11B            |
|             | C     | 10.82                            | 11.38  |                        |                       |                                  |                         |                                     |                         |                                     | Z11C            |



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| Part Number | CLASS | V <sub>Z</sub> @ I <sub>ZT</sub> |        | I <sub>Z</sub><br>(mA) | V <sub>R</sub><br>(V) | I <sub>R</sub> ( $\mu$ A)<br>MAX | I <sub>zt</sub><br>(mA) | Z <sub>zt</sub> ( $\Omega$ )<br>MAX | I <sub>zk</sub><br>(mA) | Z <sub>zk</sub> ( $\Omega$ )<br>MAX | MARKING<br>CODE |
|-------------|-------|----------------------------------|--------|------------------------|-----------------------|----------------------------------|-------------------------|-------------------------------------|-------------------------|-------------------------------------|-----------------|
|             |       | Min. V                           | Max. V |                        |                       |                                  |                         |                                     |                         |                                     |                 |
| GDZJ 12     | A     | 11.13                            | 11.71  | 5                      | 9.0                   | 0.2                              | 5                       | 30                                  | 0.5                     | 110                                 | Z12A            |
|             | B     | 11.44                            | 12.03  |                        |                       |                                  |                         |                                     |                         |                                     | Z12B            |
|             | C     | 11.74                            | 12.35  |                        |                       |                                  |                         |                                     |                         |                                     | Z12C            |
| GDZJ 13     | A     | 12.11                            | 12.75  | 5                      | 10                    | 0.2                              | 5                       | 35                                  | 0.5                     | 110                                 | Z13A            |
|             | B     | 12.55                            | 13.21  |                        |                       |                                  |                         |                                     |                         |                                     | Z13B            |
|             | C     | 12.99                            | 13.66  |                        |                       |                                  |                         |                                     |                         |                                     | Z13C            |
| GDZJ 15     | A     | 13.44                            | 14.13  | 5                      | 11                    | 0.2                              | 5                       | 40                                  | 0.5                     | 110                                 | Z15A            |
|             | B     | 13.89                            | 14.62  |                        |                       |                                  |                         |                                     |                         |                                     | Z15B            |
|             | C     | 14.35                            | 15.09  |                        |                       |                                  |                         |                                     |                         |                                     | Z15C            |
| GDZJ 16     | A     | 14.80                            | 15.57  | 5                      | 12                    | 0.2                              | 5                       | 40                                  | 0.5                     | 150                                 | Z16A            |
|             | B     | 15.25                            | 16.04  |                        |                       |                                  |                         |                                     |                         |                                     | Z16B            |
|             | C     | 15.69                            | 16.51  |                        |                       |                                  |                         |                                     |                         |                                     | Z16C            |
| GDZJ 18     | A     | 16.22                            | 17.06  | 5                      | 13                    | 0.2                              | 5                       | 45                                  | 0.5                     | 150                                 | Z18A            |
|             | B     | 16.82                            | 17.70  |                        |                       |                                  |                         |                                     |                         |                                     | Z18B            |
|             | C     | 17.42                            | 18.33  |                        |                       |                                  |                         |                                     |                         |                                     | Z18C            |
| GDZJ 20     | A     | 18.02                            | 18.96  | 5                      | 15                    | 0.2                              | 5                       | 55                                  | 0.5                     | 200                                 | Z20A            |
|             | B     | 18.63                            | 19.59  |                        |                       |                                  |                         |                                     |                         |                                     | Z20B            |
|             | C     | 19.23                            | 20.22  |                        |                       |                                  |                         |                                     |                         |                                     | Z20C            |
|             | D     | 19.72                            | 20.72  |                        |                       |                                  |                         |                                     |                         |                                     | Z20D            |
| GDZJ 22     | A     | 20.15                            | 21.20  | 5                      | 17                    | 0.2                              | 5                       | 30                                  | 0.5                     | 200                                 | Z22A            |
|             | B     | 20.64                            | 21.71  |                        |                       |                                  |                         |                                     |                         |                                     | Z22B            |
|             | C     | 21.08                            | 22.17  |                        |                       |                                  |                         |                                     |                         |                                     | Z22C            |
|             | D     | 21.52                            | 22.63  |                        |                       |                                  |                         |                                     |                         |                                     | Z22D            |
| GDZJ 24     | A     | 22.05                            | 23.18  | 5                      | 19                    | 0.2                              | 5                       | 35                                  | 0.5                     | 200                                 | Z24A            |
|             | B     | 22.61                            | 23.77  |                        |                       |                                  |                         |                                     |                         |                                     | Z24B            |
|             | C     | 23.12                            | 24.31  |                        |                       |                                  |                         |                                     |                         |                                     | Z24C            |
|             | D     | 23.63                            | 24.85  |                        |                       |                                  |                         |                                     |                         |                                     | Z24D            |
| GDZJ 27     | A     | 24.26                            | 25.52  | 5                      | 21                    | 0.2                              | 5                       | 45                                  | 0.5                     | 250                                 | Z27A            |
|             | B     | 24.97                            | 26.26  |                        |                       |                                  |                         |                                     |                         |                                     | Z27B            |
|             | C     | 25.63                            | 26.95  |                        |                       |                                  |                         |                                     |                         |                                     | Z27C            |
|             | D     | 26.29                            | 27.64  |                        |                       |                                  |                         |                                     |                         |                                     | Z27D            |
| GDZJ 30     | A     | 26.99                            | 28.39  | 5                      | 23                    | 0.2                              | 5                       | 55                                  | 0.5                     | 250                                 | Z30A            |
|             | B     | 27.70                            | 29.13  |                        |                       |                                  |                         |                                     |                         |                                     | Z30B            |
|             | C     | 28.36                            | 29.82  |                        |                       |                                  |                         |                                     |                         |                                     | Z30C            |
|             | D     | 29.02                            | 30.51  |                        |                       |                                  |                         |                                     |                         |                                     | Z30D            |
| GDZJ 33     | A     | 29.68                            | 31.22  | 5                      | 25                    | 0.2                              | 5                       | 65                                  | 0.5                     | 250                                 | Z33A            |
|             | B     | 30.32                            | 31.88  |                        |                       |                                  |                         |                                     |                         |                                     | Z33B            |
|             | C     | 30.90                            | 32.50  |                        |                       |                                  |                         |                                     |                         |                                     | Z33C            |
|             | D     | 31.49                            | 33.11  |                        |                       |                                  |                         |                                     |                         |                                     | Z33D            |
| GDZJ 36     | A     | 32.14                            | 33.79  | 5                      | 27                    | 0.2                              | 5                       | 75                                  | 0.5                     | 250                                 | Z36A            |
|             | B     | 32.79                            | 34.49  |                        |                       |                                  |                         |                                     |                         |                                     | Z36B            |
|             | C     | 33.40                            | 35.13  |                        |                       |                                  |                         |                                     |                         |                                     | Z36C            |
|             | D     | 34.01                            | 35.77  |                        |                       |                                  |                         |                                     |                         |                                     | Z36D            |
| GDZJ 39     | A     | 34.68                            | 36.47  | 5                      | 30                    | 0.2                              | 5                       | 85                                  | 0.5                     | 250                                 | Z39A            |
|             | B     | 35.36                            | 37.19  |                        |                       |                                  |                         |                                     |                         |                                     | Z39B            |
|             | C     | 36.00                            | 37.85  |                        |                       |                                  |                         |                                     |                         |                                     | Z39C            |
|             | D     | 36.63                            | 38.52  |                        |                       |                                  |                         |                                     |                         |                                     | Z39D            |
| GDZJ 43     |       | 40.00                            | 45.00  | 5                      | 33                    | 0.2                              | 5                       | 90                                  | --                      | --                                  | Z41             |
| GDZJ 47     |       | 44.00                            | 49.00  | 5                      | 36                    | 0.2                              | 5                       | 90                                  | --                      | --                                  | Z43             |
| GDZJ 51     |       | 48.00                            | 54.00  | 5                      | 39                    | 0.2                              | 5                       | 110                                 | --                      | --                                  | Z47             |
| GDZJ 56     |       | 53.00                            | 60.00  | 5                      | 43                    | 0.2                              | 5                       | 110                                 | --                      | --                                  | Z51             |



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## Rating And Characteristic Curves

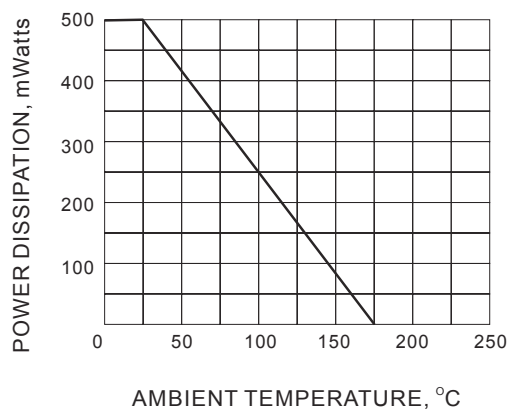


Fig.1 Power Derating Curve

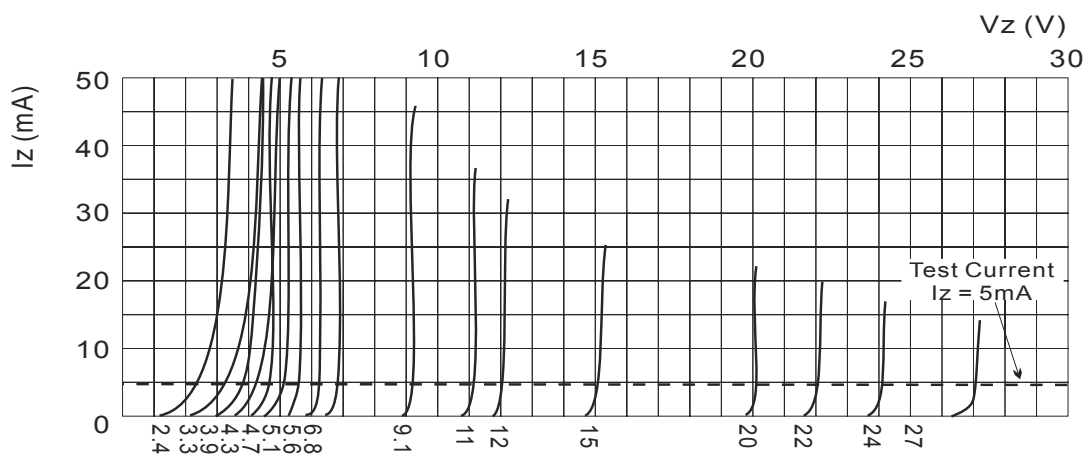


Fig.2 Breakdown Characteristics