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## Old Company Name in Catalogs and Other Documents

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April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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# 1N4728A through 1N4753A

Silicon Planar Zener Diodes for Stabilized Power Supply

REJ03G1221-0500  
Rev.5.00  
Nov 13, 2007

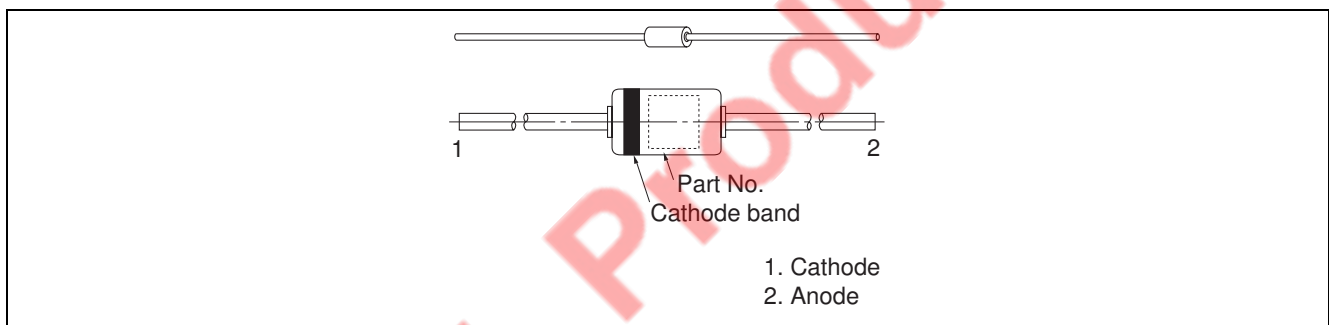
## Features

- Glass package DO-41 structure ensures high reliability.
- Wide spectrum from 3.3 V through 36 V of zener voltage provide flexible application.

## Ordering Information

| Part No.                   | Cathode Band | Mark     | Package Name | Package Code |
|----------------------------|--------------|----------|--------------|--------------|
| 1N4728A through<br>1N4753A | Black        | Part No. | DO-41        | GRZZ0002ZA-A |

## Pin Arrangement



## Absolute Maximum Ratings

(Ta = 25°C)

| Item                 | Symbol | Value       | Unit |
|----------------------|--------|-------------|------|
| Power dissipation    | Pd *   | 1.0         | W    |
| Junction temperature | Tj     | 200         | °C   |
| Storage temperature  | Tstg   | -65 to +200 | °C   |

Note: See Fig.3

## Electrical Characteristics

(Ta = 25°C)

| Part No. | Zener Voltage         |                     | Reverse Current     |                    | Dynamic Resistance  |                      |                     |                      | I <sub>RSM</sub> (mA) *2 |
|----------|-----------------------|---------------------|---------------------|--------------------|---------------------|----------------------|---------------------|----------------------|--------------------------|
|          | V <sub>Z</sub> (V) *1 | Test Condition      | I <sub>R</sub> (μA) | Test Condition     | Z <sub>ZT</sub> (Ω) | Test Condition       | Z <sub>ZK</sub> (Ω) | Test Condition       |                          |
|          |                       | I <sub>Z</sub> (mA) | Max                 | V <sub>R</sub> (V) | Max                 | I <sub>ZT</sub> (mA) | Max                 | I <sub>ZK</sub> (mA) |                          |
| 1N4728A  | 3.3 ± 5 (%)           | 76                  | 100                 | 1.0                | 10                  | 76                   | 400                 | 1.0                  | 1380                     |
| 1N4729A  | 3.6 ± 5 (%)           | 69                  | 100                 | 1.0                | 10                  | 69                   | 400                 | 1.0                  | 1260                     |
| 1N4730A  | 3.9 ± 5 (%)           | 64                  | 50                  | 1.0                | 9                   | 64                   | 400                 | 1.0                  | 1190                     |
| 1N4731A  | 4.3 ± 5 (%)           | 58                  | 10                  | 1.0                | 9                   | 58                   | 400                 | 1.0                  | 1070                     |
| 1N4732A  | 4.7 ± 5 (%)           | 53                  | 10                  | 1.0                | 8                   | 53                   | 500                 | 1.0                  | 970                      |
| 1N4733A  | 5.1 ± 5 (%)           | 49                  | 10                  | 1.0                | 7                   | 49                   | 550                 | 1.0                  | 890                      |
| 1N4734A  | 5.6 ± 5 (%)           | 45                  | 10                  | 2.0                | 5                   | 45                   | 600                 | 1.0                  | 810                      |
| 1N4735A  | 6.2 ± 5 (%)           | 41                  | 10                  | 3.0                | 2                   | 41                   | 700                 | 1.0                  | 730                      |
| 1N4736A  | 6.8 ± 5 (%)           | 37                  | 10                  | 4.0                | 3.5                 | 37                   | 700                 | 1.0                  | 660                      |
| 1N4737A  | 7.5 ± 5 (%)           | 34                  | 10                  | 5.0                | 4                   | 34                   | 700                 | 0.5                  | 605                      |
| 1N4738A  | 8.2 ± 5 (%)           | 31                  | 10                  | 6.0                | 4.5                 | 31                   | 700                 | 0.5                  | 550                      |
| 1N4739A  | 9.1 ± 5 (%)           | 28                  | 10                  | 7.0                | 5                   | 28                   | 700                 | 0.5                  | 500                      |
| 1N4740A  | 10 ± 5 (%)            | 25                  | 10                  | 7.6                | 7                   | 25                   | 700                 | 0.25                 | 454                      |
| 1N4741A  | 11 ± 5 (%)            | 23                  | 5                   | 8.4                | 8                   | 23                   | 700                 | 0.25                 | 414                      |
| 1N4742A  | 12 ± 5 (%)            | 21                  | 5                   | 9.1                | 9                   | 21                   | 700                 | 0.25                 | 380                      |
| 1N4743A  | 13 ± 5 (%)            | 19                  | 5                   | 9.9                | 10                  | 19                   | 700                 | 0.25                 | 344                      |
| 1N4744A  | 15 ± 5 (%)            | 17                  | 5                   | 11.4               | 14                  | 17                   | 700                 | 0.25                 | 304                      |
| 1N4745A  | 16 ± 5 (%)            | 15.5                | 5                   | 12.2               | 16                  | 15.5                 | 750                 | 0.25                 | 285                      |
| 1N4746A  | 18 ± 5 (%)            | 14.0                | 5                   | 13.7               | 20                  | 14.0                 | 750                 | 0.25                 | 250                      |
| 1N4747A  | 20 ± 5 (%)            | 12.5                | 5                   | 15.2               | 22                  | 12.5                 | 750                 | 0.25                 | 225                      |
| 1N4748A  | 22 ± 5 (%)            | 11.5                | 5                   | 16.7               | 23                  | 11.5                 | 750                 | 0.25                 | 205                      |
| 1N4749A  | 24 ± 5 (%)            | 10.5                | 5                   | 18.2               | 25                  | 10.5                 | 750                 | 0.25                 | 190                      |
| 1N4750A  | 27 ± 5 (%)            | 9.5                 | 5                   | 20.6               | 35                  | 9.5                  | 750                 | 0.25                 | 170                      |
| 1N4751A  | 30 ± 5 (%)            | 8.5                 | 5                   | 22.8               | 40                  | 8.5                  | 1000                | 0.25                 | 150                      |
| 1N4752A  | 33 ± 5 (%)            | 7.5                 | 5                   | 25.1               | 45                  | 7.5                  | 1000                | 0.25                 | 135                      |
| 1N4753A  | 36 ± 5 (%)            | 7.0                 | 5                   | 27.4               | 50                  | 7.0                  | 1000                | 0.25                 | 125                      |

Notes: 1. Tested with DC

2. t = 1/120 s reverse direction 1pulse

Main Characteristic

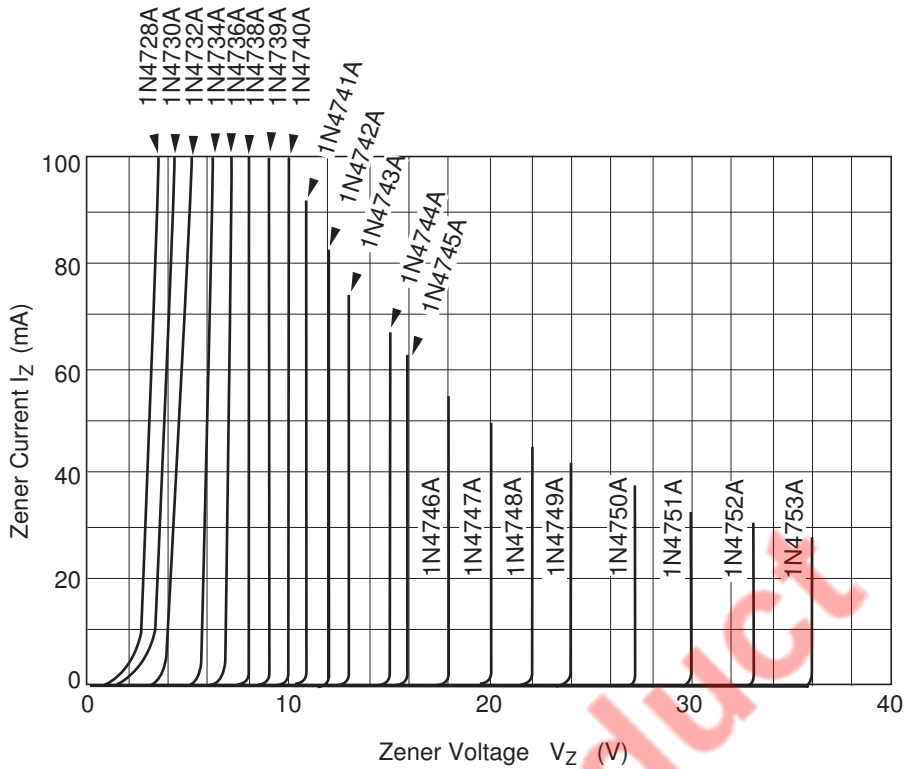


Fig.1 Zener current vs. Zener voltage

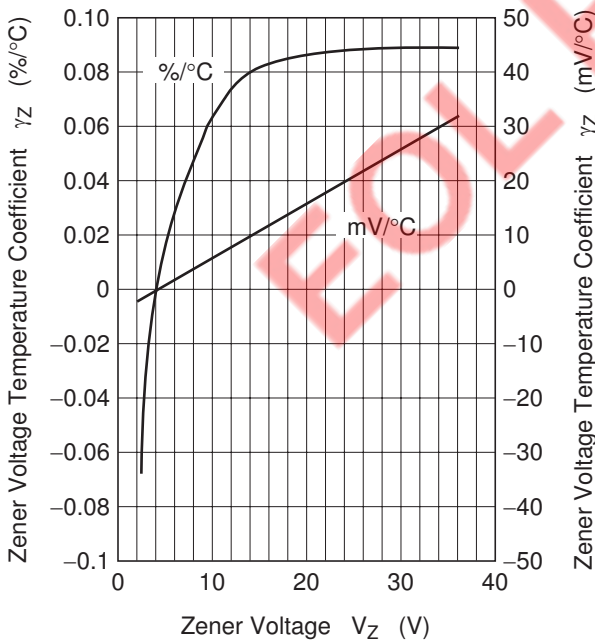


Fig.2 Temperature Coefficient vs. Zener voltage

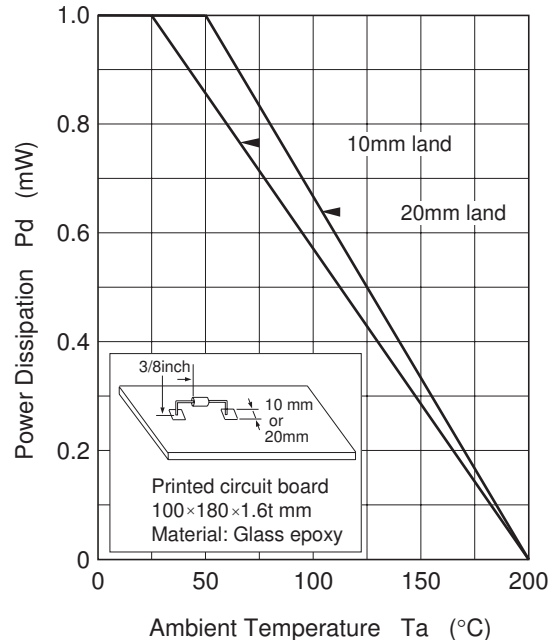


Fig.2 Power Dissipation vs. Ambient Temperature

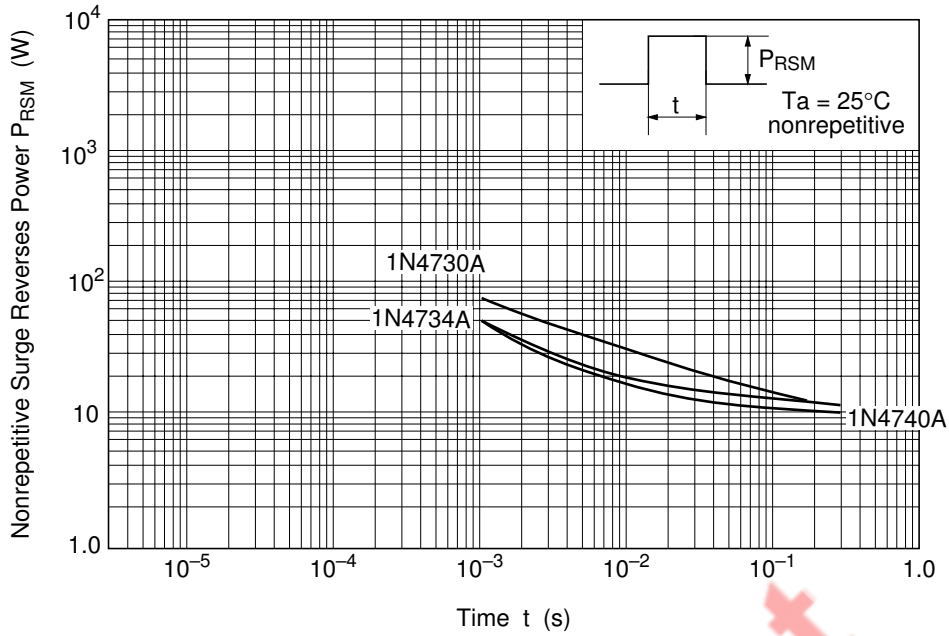


Fig.4 Surge Reverse Power Ratings

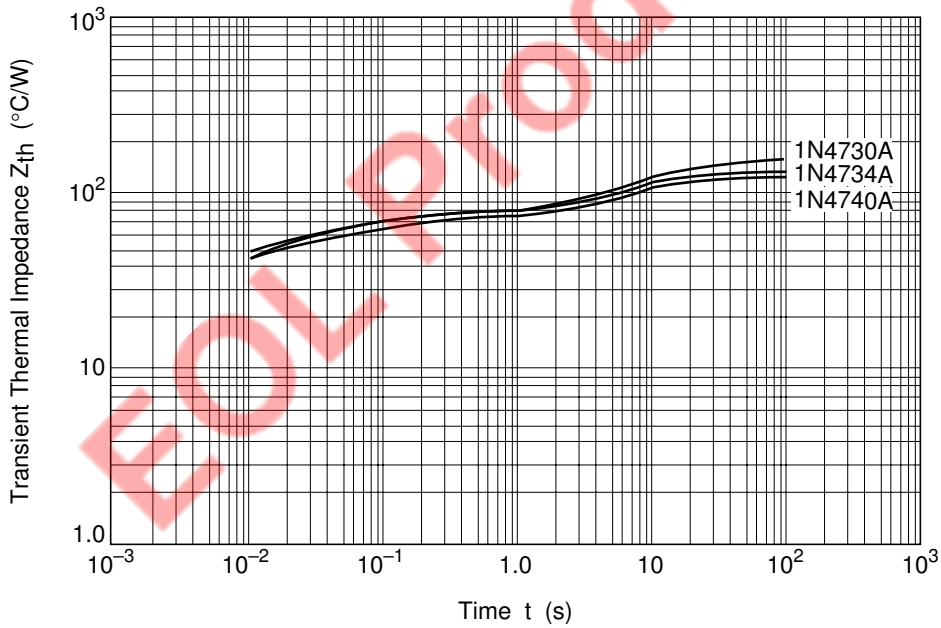
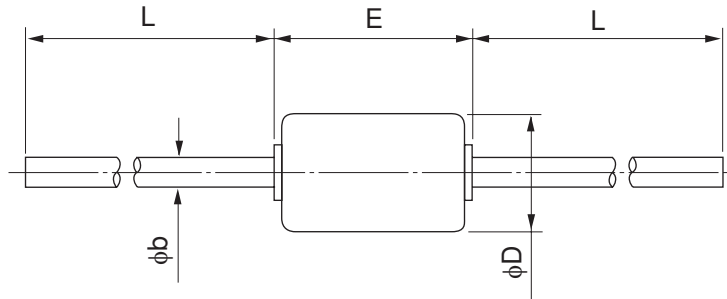


Fig.5 Transient Thermal Impedance

Package Dimensions

|              |                    |              |                |            |
|--------------|--------------------|--------------|----------------|------------|
| Package Name | JEITA Package Code | RENESAS Code | Previous Code  | MASS[Typ.] |
| DO-41        | —                  | GRZZ0002ZA-A | DO-41 / DO-41V | 0.38g      |



| Reference Symbol | Dimension in Millimeters |     |     |
|------------------|--------------------------|-----|-----|
|                  | Min                      | Nom | Max |
| $\phi b$         | -                        | 0.8 | -   |
| $\phi D$         | -                        | 3.0 | -   |
| E                | -                        | -   | 5.2 |
| L                | 26.0                     | -   | -   |

EOL Product

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