

To our customers,

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## Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

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

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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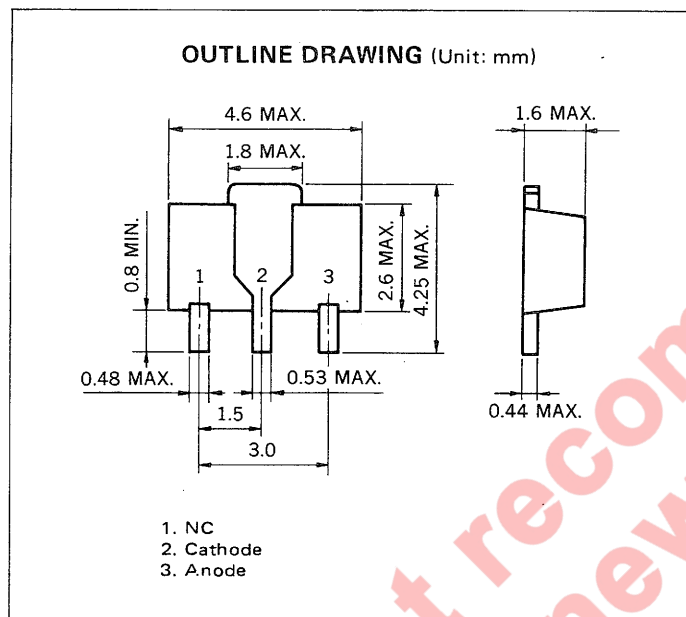
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# ZENER DIODES

## RD4.7P ~ RD39P

### 1 W POWER MINI MOLD ZENER DIODE

NEC Type RD[ ] P Series are Power Mini Mold Package zener diodes possessing an allowable power dissipation of 1 watt.



#### FEATURES

- Very small size to assure good space factor in hybrid IC applications.
- $V_Z$ ; Applied E24 standard.

#### MAXIMUM RATINGS

|                                   |                |
|-----------------------------------|----------------|
| Power Dissipation (P)             | 1.0 W          |
| Junction Temperature ( $T_j$ )    | 150 °C         |
| Storage Temperature ( $T_{stg}$ ) | -55 to +150 °C |

Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

| Type Name | Suffix | Zener Voltage<br>$V_Z(\text{V})^*$ |      |                  | Dynamic Impedance<br>$Z_Z(\Omega)^{**}$ |                  | Reverse Current<br>$I_R(\mu\text{A})$ |                 |
|-----------|--------|------------------------------------|------|------------------|-----------------------------------------|------------------|---------------------------------------|-----------------|
|           |        | MIN.                               | MAX. | $I_Z(\text{mA})$ | MAX.                                    | $I_Z(\text{mA})$ | MAX.                                  | $V_R(\text{V})$ |
| RD4.7P    | B      | 4.4                                | 4.9  | 5                | 80                                      | 5                | 20                                    | 1.0             |
| RD5.1P    | B      | 4.8                                | 5.4  | 5                | 60                                      | 5                | 20                                    | 1.0             |
| RD5.6P    | B      | 5.3                                | 6.0  | 5                | 40                                      | 5                | 20                                    | 1.5             |
| RD6.2P    | B      | 5.8                                | 6.6  | 5                | 10                                      | 5                | 20                                    | 3.0             |
| RD6.8P    | B      | 6.4                                | 7.2  | 5                | 15                                      | 5                | 20                                    | 3.5             |
| RD7.5P    | B      | 7.0                                | 7.9  | 5                | 15                                      | 5                | 20                                    | 4.0             |
| RD8.2P    | B      | 7.7                                | 8.7  | 5                | 15                                      | 5                | 20                                    | 5.0             |
| RD9.1P    | B      | 8.5                                | 9.6  | 5                | 15                                      | 5                | 20                                    | 6.0             |
| RD10P     | B      | 9.4                                | 10.6 | 5                | 20                                      | 5                | 10                                    | 7.0             |
| RD11P     | B      | 10.4                               | 11.6 | 5                | 20                                      | 5                | 10                                    | 8.0             |
| RD12P     | B      | 11.4                               | 12.6 | 5                | 25                                      | 5                | 10                                    | 9.0             |
| RD13P     | B      | 12.4                               | 14.1 | 5                | 30                                      | 5                | 10                                    | 10              |
| RD15P     | B      | 13.8                               | 15.6 | 5                | 30                                      | 5                | 10                                    | 11              |
| RD16P     | B      | 15.3                               | 17.1 | 5                | 40                                      | 5                | 10                                    | 12              |
| RD18P     | B      | 16.8                               | 19.1 | 5                | 45                                      | 5                | 10                                    | 13              |
| RD20P     | B      | 18.8                               | 21.2 | 5                | 55                                      | 5                | 10                                    | 15              |
| RD22P     | B      | 20.8                               | 23.3 | 5                | 55                                      | 5                | 10                                    | 17              |
| RD24P     | B      | 22.8                               | 25.6 | 5                | 70                                      | 5                | 10                                    | 19              |
| RD27P     | B      | 25.1                               | 28.9 | 2                | 80                                      | 2                | 10                                    | 21              |
| RD30P     | B      | 28.0                               | 32.0 | 2                | 80                                      | 2                | 10                                    | 23              |
| RD33P     | B      | 31.0                               | 35.0 | 2                | 80                                      | 2                | 10                                    | 25              |
| RD36P     | B      | 34.0                               | 38.0 | 2                | 90                                      | 2                | 10                                    | 27              |
| RD39P     | B      | 37.0                               | 41.0 | 2                | 130                                     | 2                | 10                                    | 30              |

\* Tested with pulse (40 ms).

\*\*  $Z_Z$  is measured at  $I_Z$  by given a very small A.C. current signal.

Fig. 1 P-T<sub>a</sub> Rating

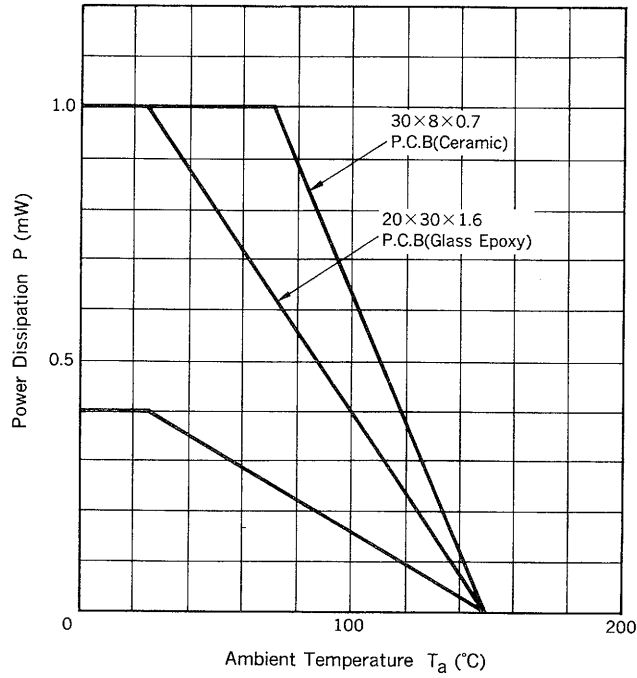
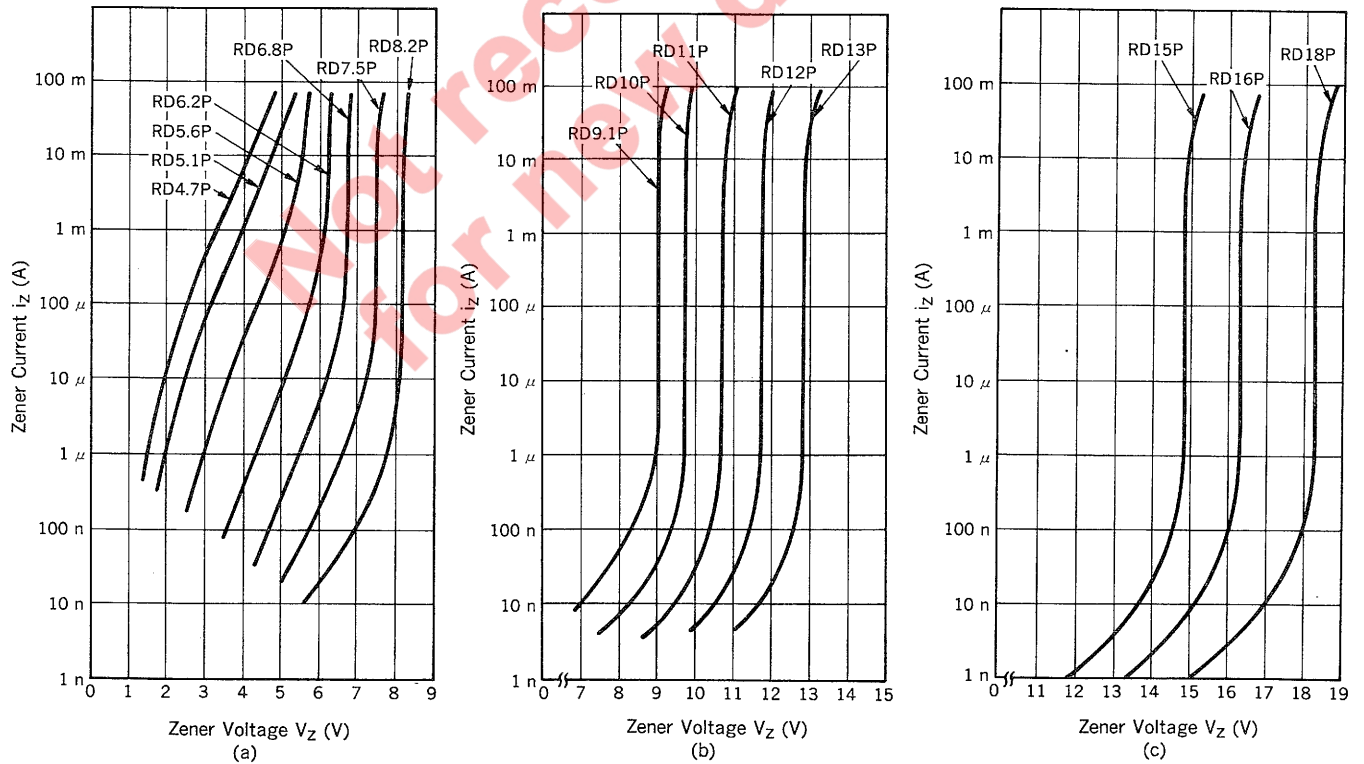


Fig. 2  $i_z$ - $v_z$  Characteristics



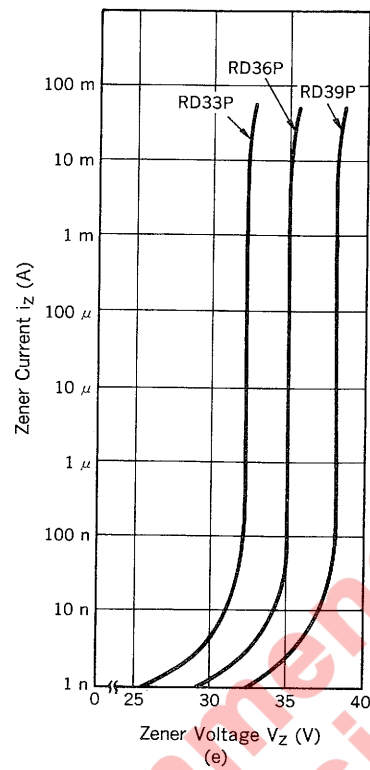
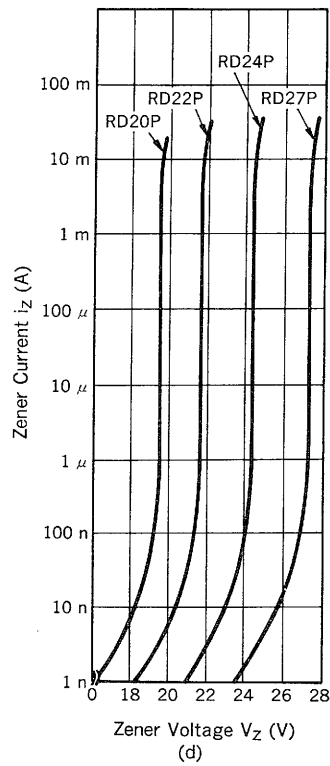
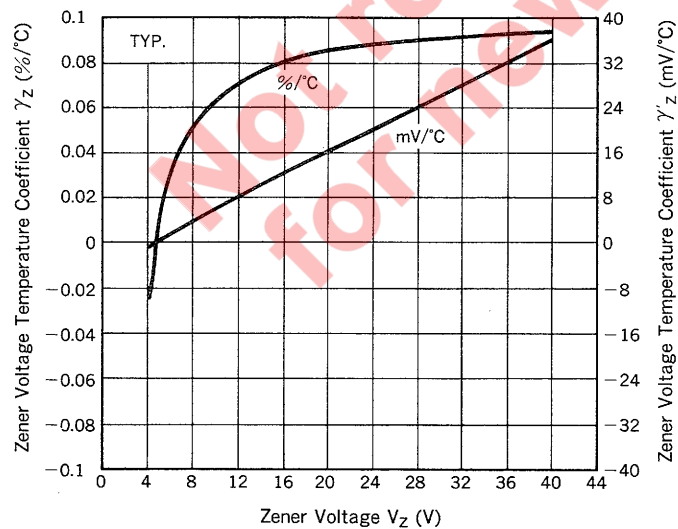
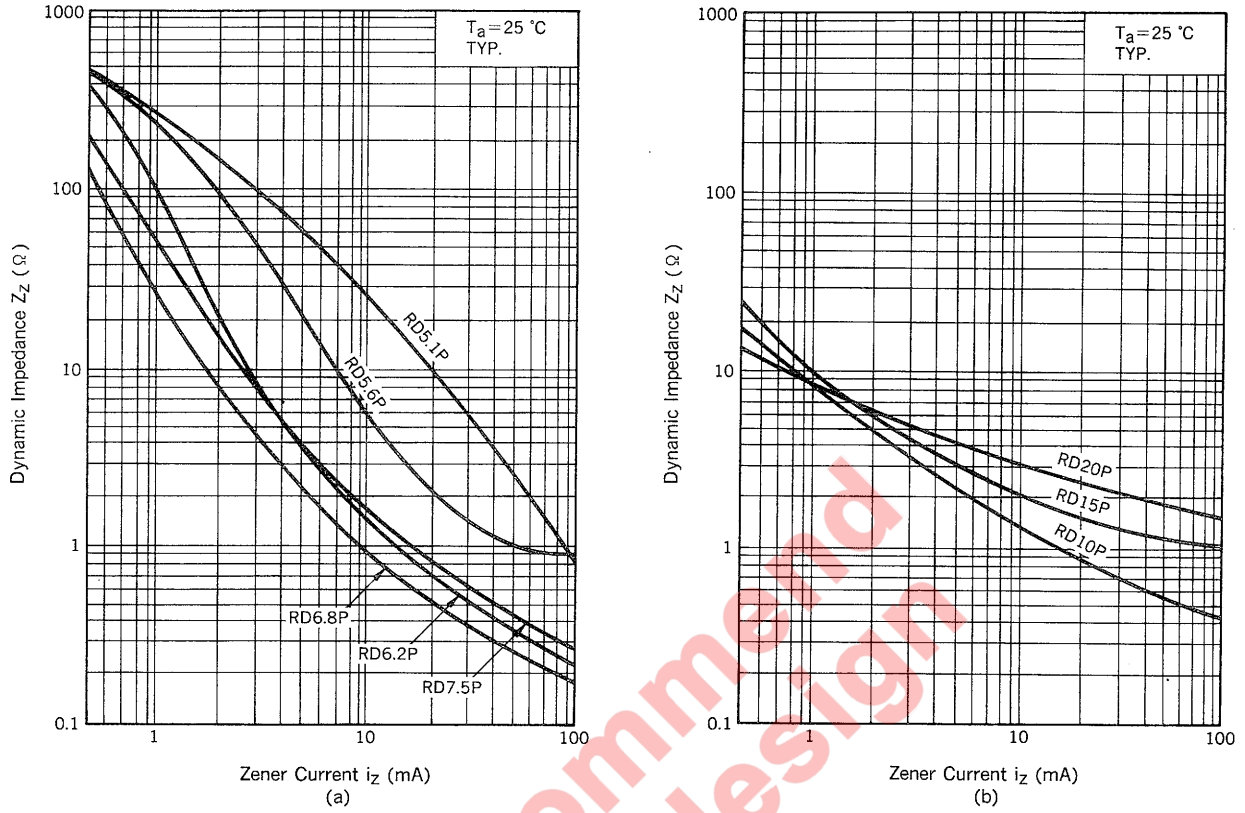
Fig. 3  $\gamma_Z$ - $V_Z$  Characteristics

Fig. 4  $Z_z$ - $I_z$  Characteristics



Not recommended  
for new design

Not recommend  
for new design

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## NEC Corporation

INTERNATIONAL ELECTRON DEVICES DIV.  
NEC Building, 33-1, Shiba Gocho  
Minato-ku, Tokyo 108, Japan  
Tel: Tokyo 454-1111  
Telex Address: NECTOK J22686  
Cable Address: MICROPHONE TOKYO