# Zener Diode

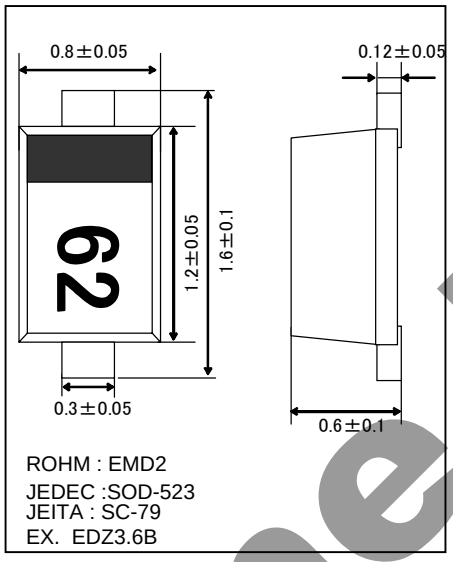
## EDZ36B

### ●Applications
Constant voltage control

### ●Features
1)2-pin ultra mini-mold type for high-density mounting (EMD2)
2) High reliability
3)Can be mounted automatically,using chip mounter.

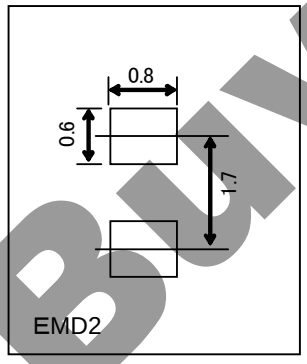
### ●Construction
Silicon epitaxial planer

### ●Dimensions (Unit : mm)

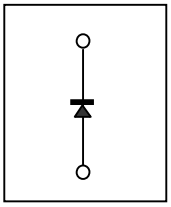



ROHM : EMD2
JEDEC :SOD-523
JEITA : SC-79
EX. EDZ3.6B

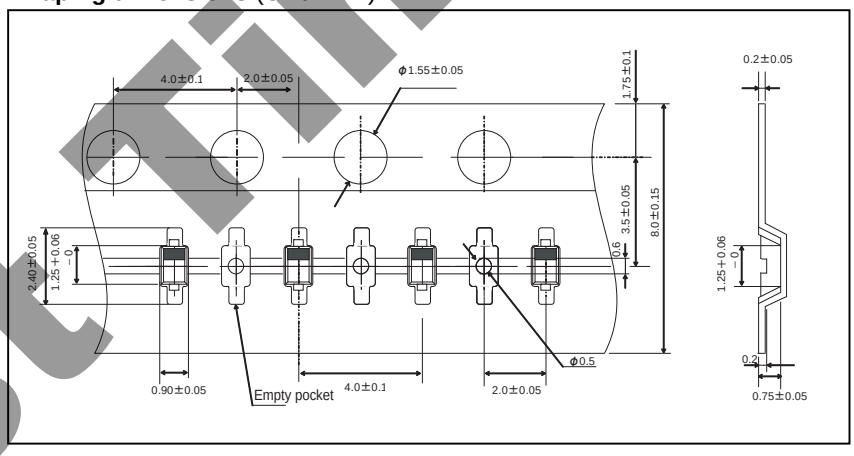
### ●Land size figure (Unit : mm)




### ●Structure



### ●Taping dimensions (Unit : mm)




### ●Absolute maximum ratings (Ta=25°C)

| Parameter | Symbol | Limits | Unit |
|---|---|---|---|
| Power dissipation | P | 150 | mW |
| Junction temperature | Tj | 150 | °C |
| Storage temperature | Tstg | -55 to +150 | °C |
| Operating temperature | Topr | -55 to +150 | °C |

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●**Electical voltage** (Ta=25°C)

| TYP. | Symbol | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Zener voltage: Vz(V) | | | Operating resistance : Zz(Ω) | | Rising operating resistance : Zz(Ω) | | Reverse current : $I_R$(uA) | |
| | MIN. | MAX. | Iz(mA) | MAX. | Iz(mA) | MAX. | Iz(mA) | MAX. | $V_R$(V) |
| EDZ 3.6B | 3.600 | 3.845 | 5.0 | 100 | 5.0 | 1000 | 1.0 | 10.0 | 1.0 |
| EDZ 3.9B | 3.890 | 4.160 | 5.0 | 100 | 5.0 | 1000 | 1.0 | 5.0 | 1.0 |
| EDZ 4.3B | 4.170 | 4.430 | 5.0 | 100 | 5.0 | 1000 | 1.0 | 5.0 | 1.0 |
| EDZ 4.7B | 4.550 | 4.750 | 5.0 | 100 | 5.0 | 800 | 0.5 | 2.0 | 1.0 |
| EDZ 5.1B | 4.980 | 5.200 | 5.0 | 80 | 5.0 | 500 | 0.5 | 2.0 | 1.5 |
| EDZ 5.6B | 5.490 | 5.730 | 5.0 | 60 | 5.0 | 200 | 0.5 | 1.0 | 2.5 |
| EDZ 6.2B | 6.060 | 6.330 | 5.0 | 60 | 5.0 | 100 | 0.5 | 1.0 | 3.0 |
| EDZ 6.8B | 6.650 | 6.930 | 5.0 | 40 | 5.0 | 60 | 0.5 | 0.5 | 3.5 |
| EDZ 7.5B | 7.280 | 7.600 | 5.0 | 30 | 5.0 | 60 | 0.5 | 0.5 | 4.0 |
| EDZ 8.2B | 8.020 | 8.360 | 5.0 | 30 | 5.0 | 60 | 0.5 | 0.5 | 5.0 |
| EDZ 9.1B | 8.850 | 9.230 | 5.0 | 30 | 5.0 | 60 | 0.5 | 0.5 | 6.0 |
| EDZ 10B | 9.770 | 10.210 | 5.0 | 30 | 5.0 | 60 | 0.5 | 0.1 | 7.0 |
| EDZ 11B | 10.760 | 11.220 | 5.0 | 30 | 5.0 | 60 | 0.5 | 0.1 | 8.0 |
| EDZ 12B | 11.740 | 12.240 | 5.0 | 30 | 5.0 | 80 | 0.5 | 0.1 | 9.0 |
| EDZ 13B | 12.910 | 13.490 | 5.0 | 37 | 5.0 | 80 | 0.5 | 0.1 | 10.0 |
| EDZ 15B | 14.340 | 14.980 | 5.0 | 42 | 5.0 | 80 | 0.5 | 0.1 | 11.0 |
| EDZ 16B | 15.850 | 16.510 | 5.0 | 50 | 5.0 | 80 | 0.5 | 0.1 | 12.0 |
| EDZ 18B | 17.560 | 18.350 | 5.0 | 65 | 5.0 | 80 | 0.5 | 0.1 | 13.0 |
| EDZ 20B | 19.520 | 20.390 | 5.0 | 85 | 5.0 | 100 | 0.5 | 0.1 | 15.0 |
| EDZ 22B | 21.540 | 22.470 | 5.0 | 100 | 5.0 | 100 | 0.5 | 0.1 | 17.0 |
| EDZ 24B | 23.720 | 24.780 | 5.0 | 120 | 5.0 | 120 | 0.5 | 0.1 | 19.0 |
| EDZ 27B | 26.190 | 27.530 | 2.0 | 150 | 2.0 | 150 | 0.5 | 0.1 | 21.0 |
| EDZ 30B | 29.190 | 30.690 | 2.0 | 200 | 2.0 | 200 | 0.5 | 0.1 | 23.0 |
| EDZ 33B | 32.150 | 33.790 | 2.0 | 250 | 2.0 | 250 | 0.5 | 0.1 | 25.0 |
| EDZ 36B | 35.070 | 36.870 | 2.0 | 300 | 2.0 | 300 | 0.5 | 0.1 | 27.0 |

(1)The zener voltage(Vz) is measured 40ms after power is supplied.

(2)The operating resistances(Zz,Zzk) are measured by superimposing a minute alternating curren on the regulated current(Iz)

●**MARKING** (Type No.)

| TYPE | TYPE NO. | TYPE | TYPE NO. |
|---|---|---|---|
| EDZ 3.6B | 62 | EDZ 12B | 25 |
| EDZ 3.9B | 72 | EDZ 13B | 35 |
| EDZ 4.3B | 82 | EDZ 15B | 45 |
| EDZ 4.7B | 92 | EDZ 16B | 55 |
| EDZ 5.1B | A2 | EDZ 18B | 65 |
| EDZ 5.6B | C2 | EDZ 20B | 75 |
| EDZ 6.2B | E2 | EDZ 22B | 85 |
| EDZ 6.8B | F2 | EDZ 24B | 95 |
| EDZ 7.5B | H2 | EDZ 27B | A5 |
| EDZ 8.2B | J2 | EDZ 30B | C5 |
| EDZ 9.1B | L2 | EDZ 33B | E5 |
| EDZ 10B | 05 | EDZ 36B | F5 |
| EDZ 11B | 15 | | |

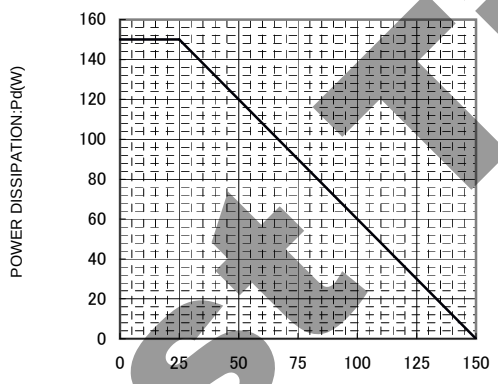
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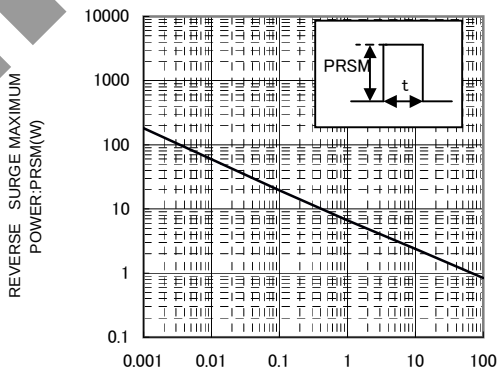

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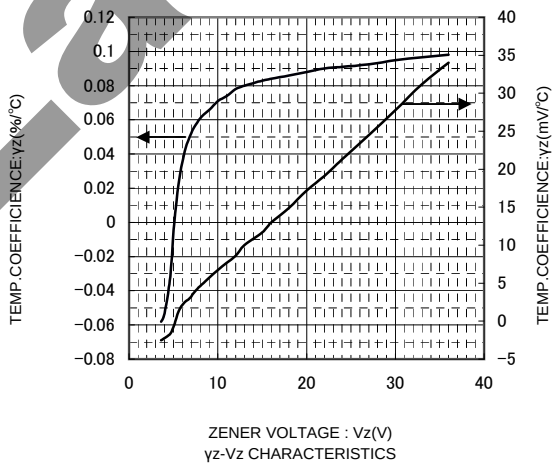

Vz-Iz CHARACTERISTICS



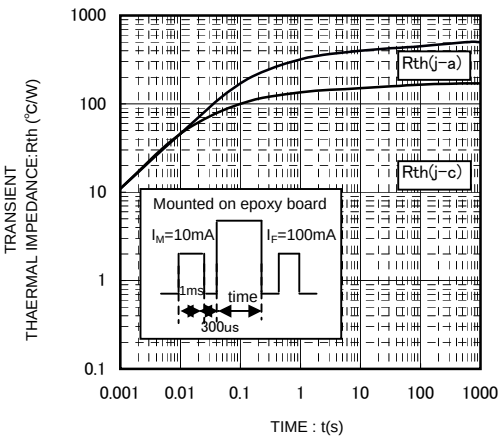

Pd-Ta CHARACTERISTICS




PRSM-TIME CHARACTERISTICS




γz-Vz CHARACTERISTICS

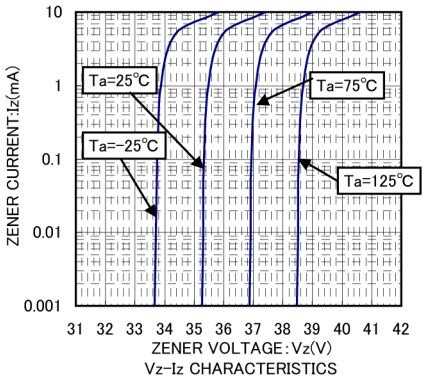



Rth-t CHARACTERISTICS

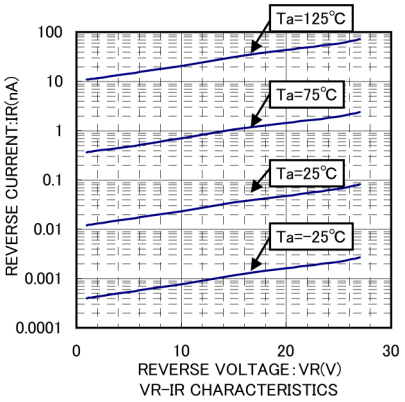
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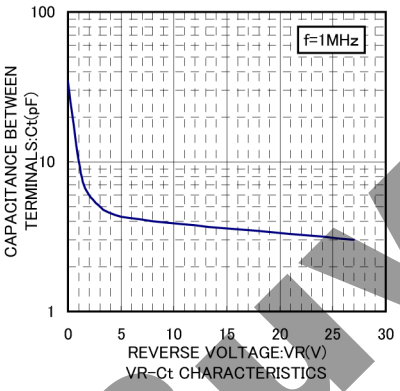

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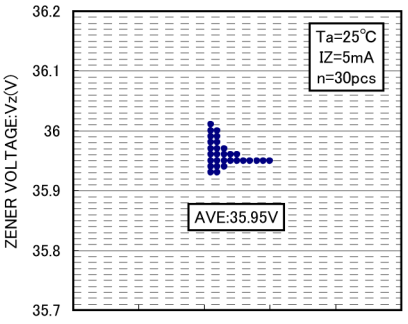
Vz-Iz CHARACTERISTICS



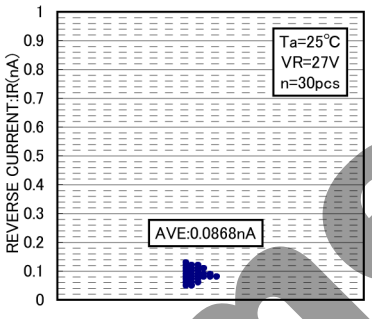
VR-IR CHARACTERISTICS



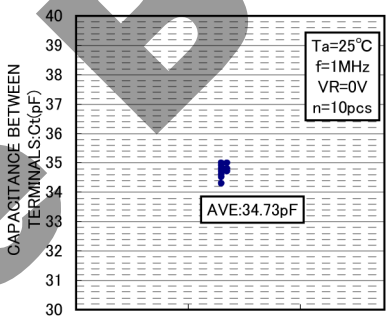
VR-Ct CHARACTERISTICS



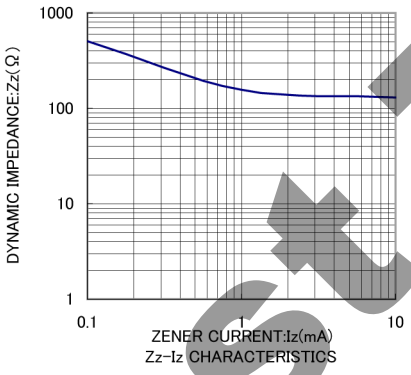
Vz DISPERSION MAP



IR DISPERSION MAP



Ct DISPERSION MAP



Zz-Iz CHARACTERISTICS

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| JAPAN | USA | EU | CHINA |
|---|---|---|---|
| CLASSⅢ | CLASSⅢ | CLASSⅡb | CLASSⅢ |
| CLASSⅣ | | CLASSⅢ | |

2. ROHM designs and manufactures its Products subject to strict quality control system. However, semiconductor products can fail or malfunction at a certain rate. Please be sure to implement, at your own responsibilities, adequate safety measures including but not limited to fail-safe design against the physical injury, damage to any property, which a failure or malfunction of our Products may cause. The following are examples of safety measures:
   [a] Installation of protection circuits or other protective devices to improve system safety
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   [a] Use of our Products in any types of liquid, including water, oils, chemicals, and organic solvents
   [b] Use of our Products outdoors or in places where the Products are exposed to direct sunlight or dust
   [c] Use of our Products in places where the Products are exposed to sea wind or corrosive gases, including $Cl_2$, $H_2S$, $NH_3$, $SO_2$, and $NO_2$
   [d] Use of our Products in places where the Products are exposed to static electricity or electromagnetic waves
   [e] Use of our Products in proximity to heat-producing components, plastic cords, or other flammable items
   [f] Sealing or coating our Products with resin or other coating materials
   [g] Use of our Products without cleaning residue of flux (even if you use no-clean type fluxes, cleaning residue of flux is recommended); or Washing our Products by using water or water-soluble cleaning agents for cleaning residue after soldering
   [h] Use of the Products in places subject to dew condensation

4. The Products are not subject to radiation-proof design.

5. Please verify and confirm characteristics of the final or mounted products in using the Products.

6. In particular, if a transient load (a large amount of load applied in a short period of time, such as pulse. is applied, confirmation of performance characteristics after on-board mounting is strongly recommended. Avoid applying power exceeding normal rated power; exceeding the power rating under steady-state loading condition may negatively affect product performance and reliability.

7. De-rate Power Dissipation (Pd) depending on Ambient temperature (Ta). When used in sealed area, confirm the actual ambient temperature.

8. Confirm that operation temperature is within the specified range described in the product specification.

9. ROHM shall not be in any way responsible or liable for failure induced under deviant condition from what is defined in this document.

## Precaution for Mounting / Circuit board design

1. When a highly active halogenous (chlorine, bromine, etc.) flux is used, the residue of flux may negatively affect product performance and reliability.

2. In principle, the reflow soldering method must be used on a surface-mount products, the flow soldering method must be used on a through hole mount products. If the flow soldering method is preferred on a surface-mount products, please consult with the ROHM representative in advance.

For details, please refer to ROHM Mounting specification


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## Precautions Regarding Application Examples and External Circuits

1. If change is made to the constant of an external circuit, please allow a sufficient margin considering variations of the characteristics of the Products and external components, including transient characteristics, as well as static characteristics.

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## Precaution for Electrostatic

This Product is electrostatic sensitive product, which may be damaged due to electrostatic discharge. Please take proper caution in your manufacturing process and storage so that voltage exceeding the Products maximum rating will not be applied to Products. Please take special care under dry condition (e.g. Grounding of human body / equipment / solder iron, isolation from charged objects, setting of Ionizer, friction prevention and temperature / humidity control).

## Precaution for Storage / Transportation

1. Product performance and soldered connections may deteriorate if the Products are stored in the places where:
   [a] the Products are exposed to sea winds or corrosive gases, including Cl2, H2S, NH3, SO2, and NO2
   [b] the temperature or humidity exceeds those recommended by ROHM
   [c] the Products are exposed to direct sunshine or condensation
   [d] the Products are exposed to high Electrostatic

2. Even under ROHM recommended storage condition, solderability of products out of recommended storage time period may be degraded. It is strongly recommended to confirm solderability before using Products of which storage time is exceeding the recommended storage time period.

3. Store / transport cartons in the correct direction, which is indicated on a carton with a symbol. Otherwise bent leads may occur due to excessive stress applied when dropping of a carton.

4. Use Products within the specified time after opening a humidity barrier bag. Baking is required before using Products of which storage time is exceeding the recommended storage time period.

## Precaution for Product Label

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## Precaution for Disposition

When disposing Products please dispose them properly using an authorized industry waste company.

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