

# Zener diode

## UDZS3.9B

**●Applications**

Constant voltage control

**●Features**

- 1) Compact, 2-pin mini-mold type for high-density mounting. (UMD2)
- 2) High reliability.
- 3) Can be mounted automatically, using chip mounter.

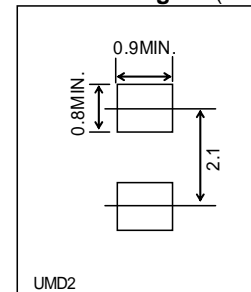
**●Construction**

Silicon epitaxial planar

**●Dimensions (Unit : mm)**



**●Land size figure (Unit : mm)**



**●Structure**



**●Taping specifications (Unit : mm)**



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

Parameter	Symbol	Limits	Unit
Power dissipation	P	200	mW
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C
Operating temperature	T <sub>opr</sub>	-55 to +150	°C

## ●Electrical characteristics (Ta=25°C)

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

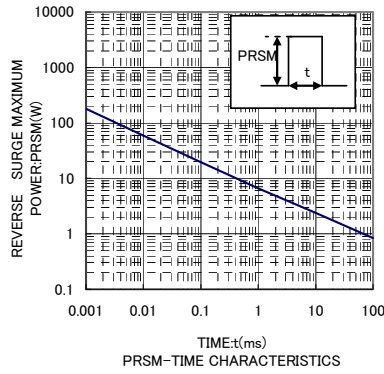
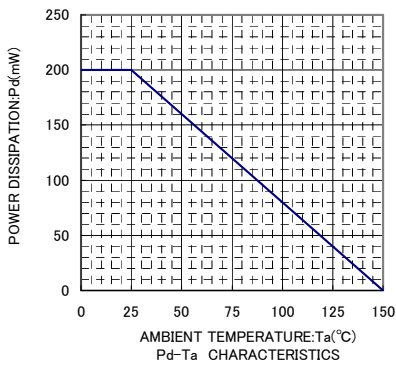
(1) The zener voltage(Vz) is measured 40ms after power is supplied.

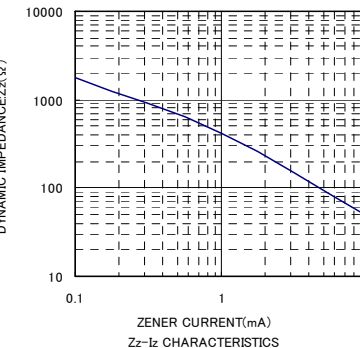
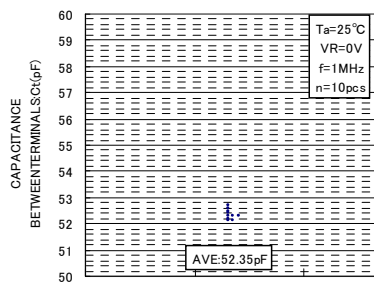
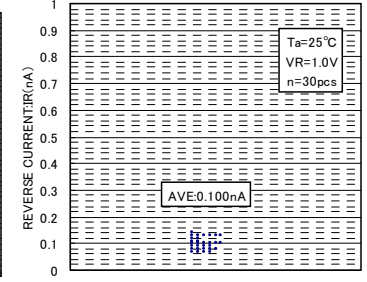
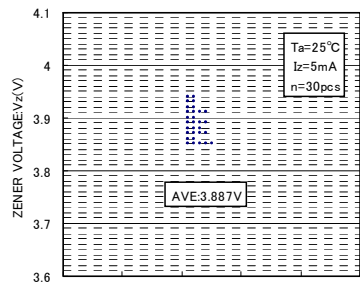
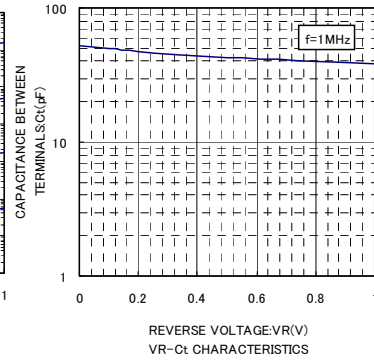
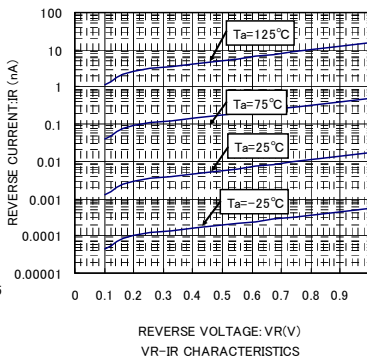
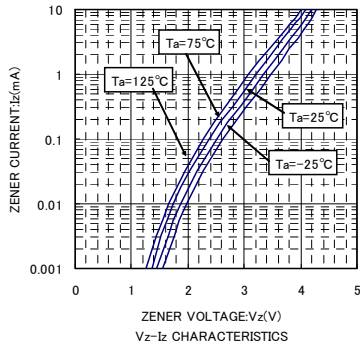
(2) The operating resistances(Zz,Zzk) are measured by superimposing a minute alternating current on the regulated current(Iz)

## ●Type No.

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

●Electrical characteristic curves (Ta=25°C)





$V_z$  DISPERSION MAP

$I_R$  DISPERSION MAP

$C_t$  DISPERSION MAP

$Z_z - I_z$  CHARACTERISTICS

# Notice

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JAPAN	USA	EU	CHINA
CLASS III	CLASS III	CLASS II b	CLASS III
CLASS IV		CLASS III	

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  - Use of our Products outdoors or in places where the Products are exposed to direct sunlight or dust
  - Use of our Products in places where the Products are exposed to sea wind or corrosive gases, including Cl<sub>2</sub>, H<sub>2</sub>S, NH<sub>3</sub>, SO<sub>2</sub>, and NO<sub>2</sub>
  - Use of our Products in places where the Products are exposed to static electricity or electromagnetic waves
  - Use of our Products in proximity to heat-producing components, plastic cords, or other flammable items
  - Sealing or coating our Products with resin or other coating materials
  - 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
  - Use of the Products in places subject to dew condensation
- The Products are not subject to radiation-proof design.
- Please verify and confirm characteristics of the final or mounted products in using the Products.
- 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.
- De-rate Power Dissipation (Pd) depending on Ambient temperature (Ta). When used in sealed area, confirm the actual ambient temperature.
- Confirm that operation temperature is within the specified range described in the product specification.
- 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

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

**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 Cl<sub>2</sub>, H<sub>2</sub>S, NH<sub>3</sub>, SO<sub>2</sub>, and NO<sub>2</sub>
  - [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.

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QR code printed on ROHM Products label is for ROHM's internal use only.

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