

# HZU-L Series

## Silicon Epitaxial Planar Zener Diode for Low Noise Application

REJ03G0043-0200Z

Rev.2.00

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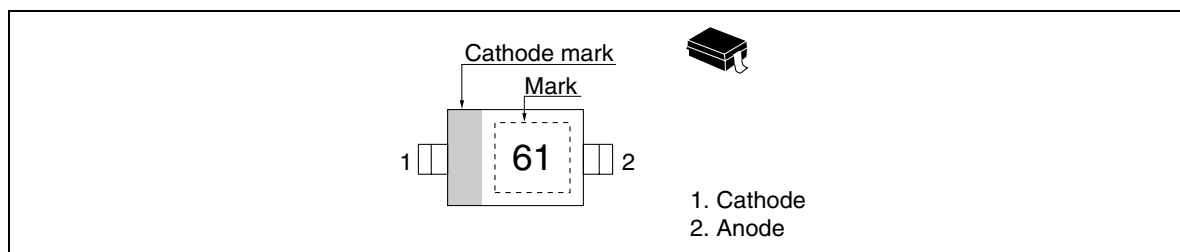
### Features

- Diode noise level of this series is approximately 1/3-1/10 lower than the HZ series.
- Low leakage and low zener impedance.
- Wide spectrum from 5.2V through 38V of zener voltage provide flexible application.
- Ultra small Resin Package (URP) is suitable for surface mount design.

### Ordering Information

Type No.	Mark	Package Code
HZU-L Series	Type No.	URP

### Pin Arrangement



## HZU-L Series

### Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Power dissipation	Pd	150	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-55 to +150	°C

### Electrical Characteristics

(Ta = 25°C)

Type	Grade	Zener Voltage		Reverse Current		Dynamic Resistance		ESD-Capability	
		V <sub>z</sub> (V)* <sup>1</sup>		Test Condition	I <sub>R</sub> (μA)	Test Condition	r <sub>d</sub> (Ω)	Test Condition	(V)* <sup>2</sup>
		Min	Max	I <sub>z</sub> (mA)	Max	V <sub>R</sub> (V)	Max	I <sub>z</sub> (mA)	Min
HZU6L	A1	5.2	5.5	0.5	1	2.0	150	0.5	200
	A2	5.3	5.6						
	A3	5.4	5.7						
	B1	5.5	5.8				80	0.5	
	B2	5.6	5.9						
	B3	5.7	6.0						
	C1	5.8	6.1				60	0.5	
	C2	6.0	6.3						
	C3	6.1	6.4						
HZU7L	A1	6.3	6.6	0.5	1	3.5	60	0.5	200
	A2	6.4	6.7						
	A3	6.6	6.9						
	B1	6.7	7.0						
	B2	6.9	7.2						
	B3	7.0	7.3						
	C1	7.2	7.6						
	C2	7.3	7.7						
	C3	7.5	7.9						

Notes: 1. Tested with DC.

2. C = 200 pF, R = 0 Ω, Both forward and reverse direction 1 pulse.  
Failure criterion ; According to IR spec.

## HZU-L Series

Type	Grade	Zener Voltage		Reverse Current		Dynamic Resistance		ESD-Capability	
		$V_Z$ (V)* <sup>1</sup>		Test Condition $I_R$ ( $\mu$ A)		Test Condition $r_d$ ( $\Omega$ )		Test Condition (V)* <sup>2</sup>	
		Min	Max	$I_Z$ (mA)	Max	$V_R$ (V)	Max	$I_Z$ (mA)	Min
HZU9L	A1	7.7	8.1	0.5	1	6.0	60	0.5	200
	A2	7.9	8.3						
	A3	8.1	8.5						
	B1	8.3	8.7						
	B2	8.5	8.9						
	B3	8.7	9.1						
	C1	8.9	9.3						
	C2	9.1	9.5						
	C3	9.3	9.7						
HZU11L	A1	9.5	9.9	0.5	1	8.0	80	0.5	200
	A2	9.7	10.1						
	A3	9.9	10.3						
	B1	10.2	10.6						
	B2	10.4	10.8						
	B3	10.7	11.1						
	C1	10.9	11.3						
	C2	11.1	11.6						
	C3	11.4	11.9						
HZU12L	A1	11.6	12.1	0.5	1	10.5	80	0.5	200
	A2	11.9	12.4						
	A3	12.2	12.7						
	B1	12.4	12.9						
	B2	12.6	13.1						
	B3	12.9	13.4						
	C1	13.2	13.7						
	C2	13.5	14.0						
	C3	13.8	14.3						
HZU15L	-1	14.1	14.7	0.5	1	13.0	80	0.5	200
	-2	14.5	15.1						
	-3	14.9	15.5						
HZU16L	-1	15.3	15.9	0.5	1	14.0	80	0.5	200
	-2	15.7	16.5						
	-3	16.3	17.1						

Notes: 1. Tested with DC.

2. C = 200 pF, R = 0  $\Omega$ , Both forward and reverse direction 1 pulse.  
Failure criterion ; According to IR spec.

## HZU-L Series

Type	Grade	Zener Voltage		Reverse Current		Dynamic Resistance		ESD-Capability	
		$V_Z$ (V)* <sup>1</sup>		Test Condition	$I_R$ ( $\mu$ A)	Test Condition	$r_d$ ( $\Omega$ )	Test Condition	(V)* <sup>2</sup>
		Min	Max	$I_Z$ (mA)	Max	$V_R$ (V)	Max	$I_Z$ (mA)	Min
HZU18L	-1	16.9	17.7	0.5	1	15.0	80	0.5	200
	-2	17.5	18.3						
	-3	18.1	19.0						
HZU20L	-1	18.8	19.7	0.5	1	18.0	100	0.5	200
	-2	19.5	20.4						
	-3	20.2	21.1						
HZU22L	-1	20.9	21.9	0.5	1	20.0	100	0.5	200
	-2	21.6	22.6						
	-3	22.3	23.3						
HZU24L	-1	22.9	24.0	0.5	1	22.0	120	0.5	200
	-2	23.6	24.7						
	-3	24.3	25.5						
HZU27L	-1	25.2	26.6	0.5	1	24.0	150	0.5	200
	-2	26.2	27.6						
	-3	27.2	28.6						
HZU30L	-1	28.2	29.6	0.5	1	27.0	200	0.5	200
	-2	29.2	30.6						
	-3	30.2	31.6						
HZU33L	-1	31.2	32.6	0.5	1	30.0	250	0.5	200
	-2	32.2	33.6						
	-3	33.2	34.6						
HZU36L	-1	34.2	35.7	0.5	1	33.0	300	0.5	200
	-2	35.3	36.8						
	-3	36.4	38.0						

Notes: 1. Tested with DC.

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Failure criterion ; According to IR spec.

## HZU-L Series

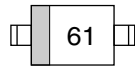
### Mark Code

Type	Grade	Mark No.	Type	Grade	Mark No.	Type	Grade	Mark No.
HZU6L	A1	61	HZU11L	A1	111	HZU20L	-1	201
	A2	62		A2	112		-2	202
	A3	63		A3	113		-3	203
	B1	64		B1	114	HZU22L	-1	221
	B2	65		B2	115		-2	222
	B3	66		B3	116		-3	223
	C1	67		C1	117	HZU24L	-1	241
	C2	68		C2	118		-2	242
	C3	69		C3	119		-3	243
HZU7L	A1	71	HZU12L	A1	121	HZU27L	-1	271
	A2	72		A2	122		-2	272
	A3	73		A3	123		-3	273
	B1	74		B1	124	HZU30L	-1	301
	B2	75		B2	125		-2	302
	B3	76		B3	126		-3	303
	C1	77		C1	127	HZU33L	-1	331
	C2	78		C2	128		-2	332
	C3	79		C3	129		-3	333
HZU9L	A1	91	HZU15L	-1	151	HZU36L	-1	361
	A2	92		-2	152		-2	362
	A3	93		-3	153		-3	363
	B1	94	HZU16L	-1	161			
	B2	95		-2	162			
	B3	96		-3	163			
	C1	97	HZU18L	-1	181			
	C2	98		-2	182			
	C3	99		-3	183			

Notes: 1. Example of Marking

(1) HZU6A1L to HZU9C3L Example of Marking

(2) HZU11A1L to HZU36-3L Example of Marking



HZU6A1L



HZU11A1L

2. Type No. is as follows; HZU6A1L, HZU6A2L, ... HZU12C3L

3. Type No. is as follows; HZU15 - 1L, HZU15 - 2L, ... HZU36 - 3L

## Main Characteristic

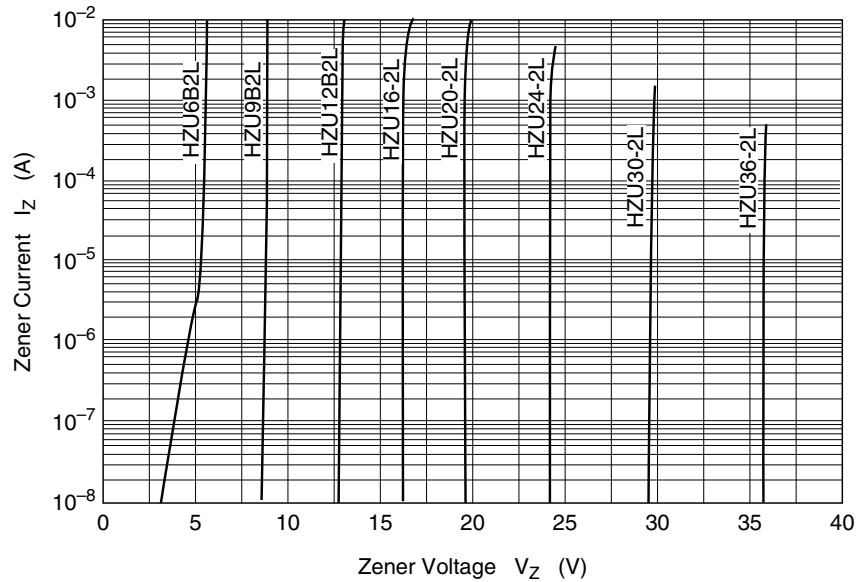


Fig.1 Zener current vs. Zener voltage

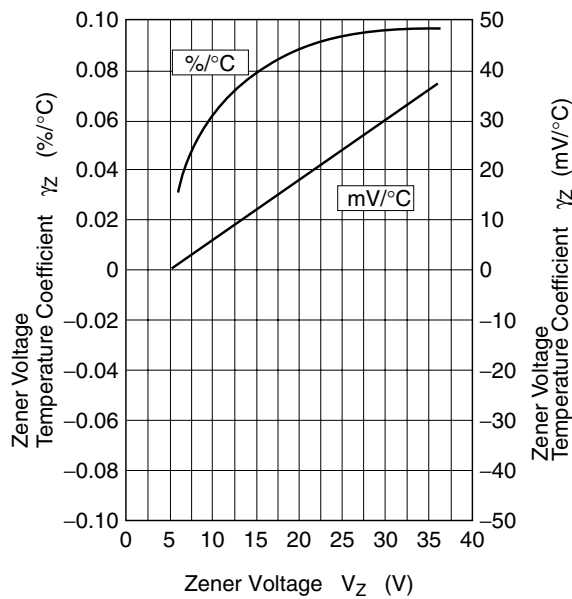


Fig.2 Temperature Coefficient vs. Zener voltage

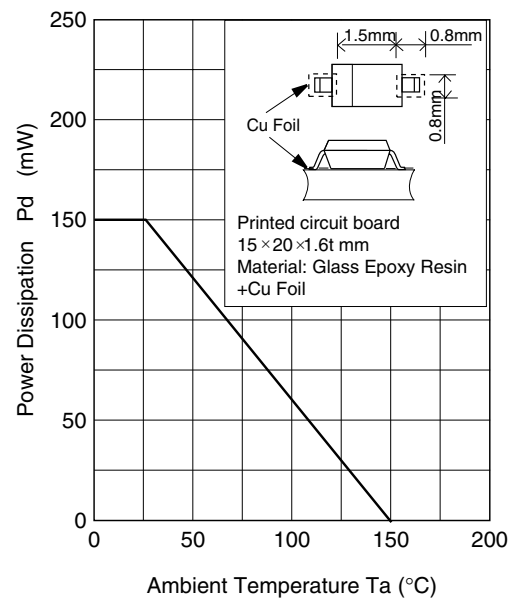
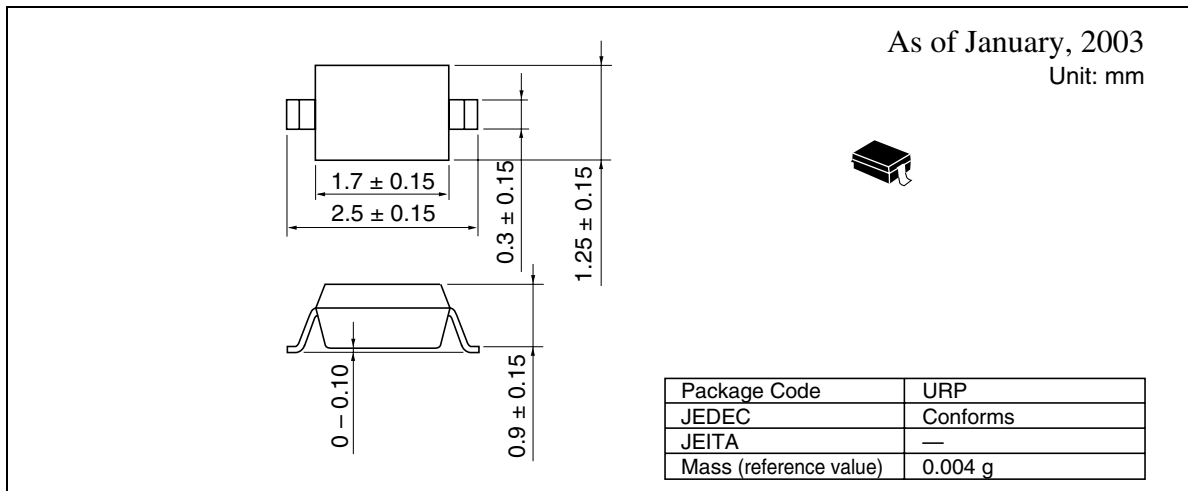


Fig.3 Power Dissipation vs. Ambient Temperature

Package Dimensions



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