HZU-L Series

Silicon Epitaxial Planar Zener Diode for Low Noise Application

REJ03G0043-0300Z
Rev.3.00
Jul.28.2004

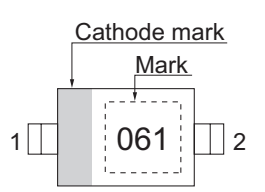
Features

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

Pin Arrangement



1. Cathode
2. Anode

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_Z (V)*1		Test Condition	I_R (μA)	Test Condition	r_d (Ω)	Test Condition	(V) *2
		Min	Max	I_Z (mA)	Max	V_R (V)	Max	I_Z (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						
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						

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.

Type	Grade	Zener Voltage			Reverse Current		Dynamic Resistance		ESD-Capability
		V_Z (V)*1		Test Condition	I_R (μA)	Test Condition	r_d (Ω)	Test Condition	(V) *2
		Min	Max	I_Z (mA)	Max	V_R (V)	Max	I_Z (mA)	Min
HZU11L	C1	10.9	11.3	0.5	1	8.0	80	0.5	200
	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						
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.

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

Mark Code

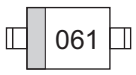
Type	Grade	Mark No.
HZU6L	A1	061
	A2	062
	A3	063
	B1	064
	B2	065
	B3	066
	C1	067
	C2	068
	C3	069
HZU7L	A1	071
	A2	072
	A3	073
	B1	074
	B2	075
	B3	076
	C1	077
	C2	078
	C3	079
HZU9L	A1	091
	A2	092
	A3	093
	B1	094
	B2	095
	B3	096
	C1	097
	C2	098
	C3	099

Type	Grade	Mark No.
HZU11L	A1	111
	A2	112
	A3	113
	B1	114
	B2	115
	B3	116
	C1	117
	C2	118
	C3	119
HZU12L	A1	121
	A2	122
	A3	123
	B1	124
	B2	125
	B3	126
	C1	127
	C2	128
	C3	129
HZU15L	–1	151
	–2	152
	–3	153
HZU16L	–1	161
	–2	162
	–3	163
HZU18L	–1	181
	–2	182
	–3	183

Type	Grade	Mark No.
HZU20L	–1	201
	–2	202
	–3	203
HZU22L	–1	221
	–2	222
	–3	223
HZU24L	–1	241
	–2	242
	–3	243
HZU27L	–1	271
	–2	272
	–3	273
HZU30L	–1	301
	–2	302
	–3	303
HZU33L	–1	331
	–2	332
	–3	333
HZU36L	–1	361
	–2	362
	–3	363

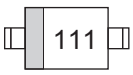
Notes: 1. Example of Marking

(1) HZU6A1L to HZU9C3L Example of Marking



HZU6A1L

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



HZU11A1L

2. Type No. is as follows; HZU6A1L, HZU6A2L, ••• HZU12C3L
3. Type No. is as follows; HZU15 – 1L, HZU15 – 2L, ••• HZU36 – 3L

Main Characteristic

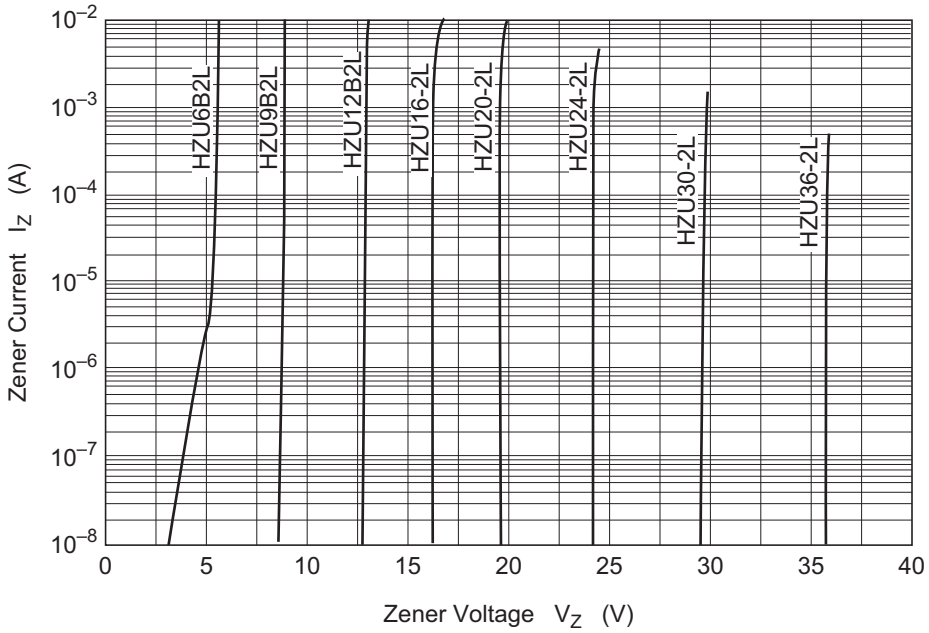


Fig.1 Zener current vs. Zener voltage

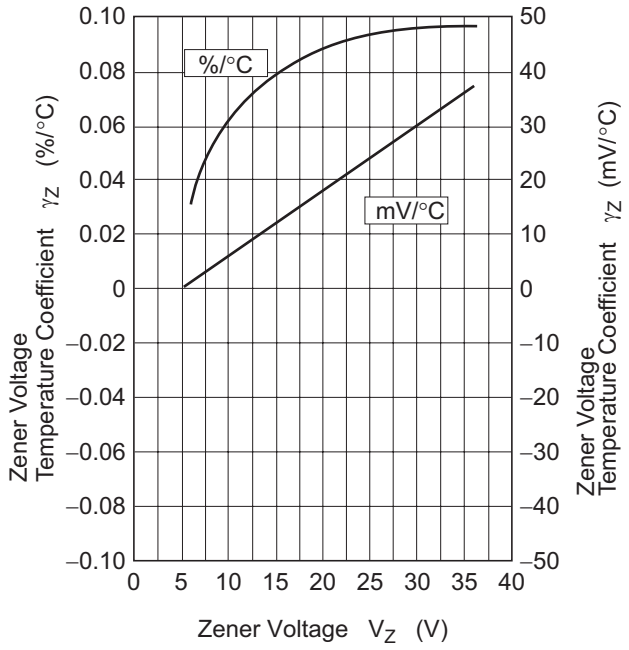


Fig.2 Temperature Coefficient vs. Zener voltage

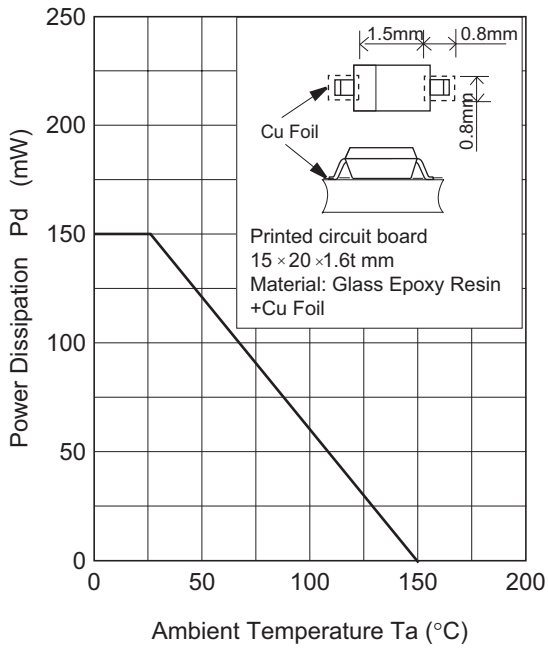
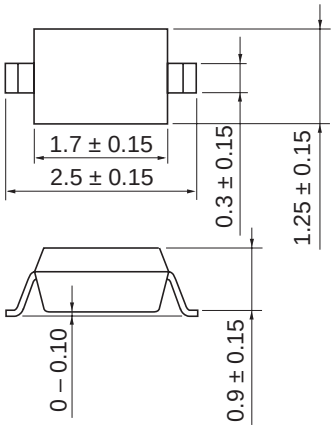


Fig.3 Power Dissipation vs. Ambient Temperature

Package Dimensions

As of January, 2003

Unit: mm



Package Code	URP
JEDEC	Conforms
JEITA	—
Mass (reference value)	0.004 g

Renesas Technology Corp. Sales Strategic Planning Div. Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan

RENESAS SALES OFFICES

http://www.renesas.com

Renesas Technology America, Inc.
450 Holger Way, San Jose, CA 95134-1368, U.S.A
Tel: <1> (408) 382-7500 Fax: <1> (408) 382-7501

Renesas Technology Europe Limited.
Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, United Kingdom
Tel: <44> (1628) 585 100, Fax: <44> (1628) 585 900

Renesas Technology Europe GmbH
Dornacher Str. 3, D-85622 Feldkirchen, Germany
Tel: <49> (89) 380 70 0, Fax: <49> (89) 929 30 11

Renesas Technology Hong Kong Ltd.
7/F., North Tower, World Finance Centre, Harbour City, Canton Road, Hong Kong
Tel: <852> 2265-6688, Fax: <852> 2375-6836

Renesas Technology Taiwan Co., Ltd.
FL 10, #99, Fu-Hsing N. Rd., Taipei, Taiwan
Tel: <886> (2) 2715-2888, Fax: <886> (2) 2713-2999

Renesas Technology (Shanghai) Co., Ltd.
26/F., Ruijin Building, No.205 Maoming Road (S), Shanghai 200020, China
Tel: <86> (21) 6472-1001, Fax: <86> (21) 6415-2952

Renesas Technology Singapore Pte. Ltd.
1, Harbour Front Avenue, #06-10, Keppel Bay Tower, Singapore 098632
Tel: <65> 6213-0200, Fax: <65> 6278-8001

Colophon .1.0

littlediode
COMPONENTS FOR ALL

Littlediode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.