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Old Company Name in Catalogs and Other Documents

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April 1st, 2010
Renesas Electronics Corporation

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HZU Series

Silicon Planar Zener Diode for Stabilizer

REJ03G0625-0900
Rev.9.00
Jul 06, 2006

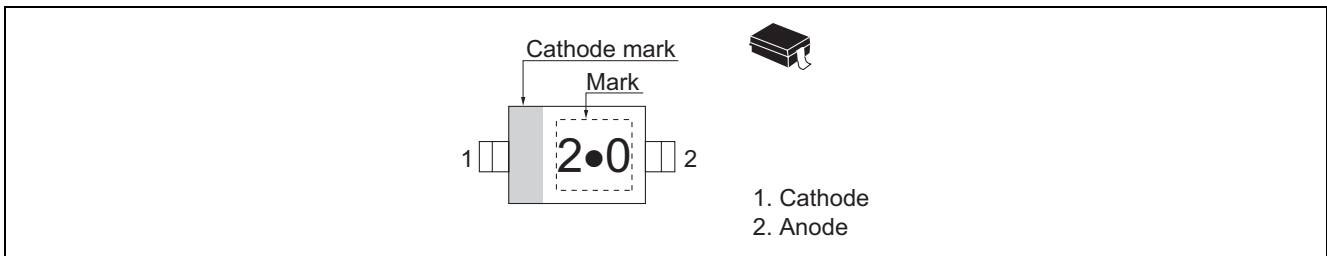
Features

- These diodes are delivered taped.
- Ultra small Resin Package (URP) is suitable for surface mount design.

Ordering Information

Type No.	Laser Mark	Package Name	Package Code
HZU Series	Let to Mark Code	URP	PTSP0002ZA-A

Pin Arrangement



Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Power dissipation	Pd *1	200	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-55 to +150	°C

Note: 1. With P.C. Board.

Electrical Characteristics

(Ta = 25°C)

Type	Grade	Zener Voltage		Reverse Current		Dynamic Resistance		
		V _Z (V)*1		Test Condition	I _R (μA)	Test Condition	r _d (Ω)	Test Condition
		Min	Max	I _Z (mA)	Max	V _R (V)	Max	I _Z (mA)
HZU2.0	B	1.90	2.20	5	120	0.5	100	5
HZU2.2	B	2.10	2.40	5	120	0.7	100	5
HZU2.4	B	2.30	2.60	5	120	1.0	100	5
HZU2.7	B	2.50	2.90	5	120	1.0	110	5
	B1	2.50	2.75					
	B2	2.65	2.90					
HZU3.0	B	2.80	3.20	5	50	1.0	120	5
	B1	2.80	3.05					
	B2	2.95	3.20					
HZU3.3	B	3.10	3.50	5	20	1.0	130	5
	B1	3.10	3.35					
	B2	3.25	3.50					
HZU3.6	B	3.40	3.80	5	10	1.0	130	5
	B1	3.40	3.65					
	B2	3.55	3.80					
HZU3.9	B	3.70	4.10	5	10	1.0	130	5
	B1	3.70	3.97					
	B2	3.87	4.10					
HZU4.3	B	4.01	4.48	5	10	1.0	130	5
	B1	4.01	4.21					
	B2	4.15	4.34					
	B3	4.28	4.48					
HZU4.7	B	4.42	4.90	5	10	1.0	130	5
	B1	4.42	4.61					
	B2	4.55	4.75					
	B3	4.69	4.90					
HZU5.1	B	4.84	5.37	5	5	1.5	130	5
	B1	4.84	5.04					
	B2	4.98	5.20					
	B3	5.14	5.37					
HZU5.6	B	5.31	5.92	5	5	2.5	80	5
	B1	5.31	5.55					
	B2	5.49	5.73					
	B3	5.67	5.92					

Note: 1. Tested with pulse (P_w = 40 ms)

Type	Grade	Zener Voltage		Reverse Current		Dynamic Resistance		
		$V_Z (V)^{*1}$		Test Condition	$I_R (\mu A)$	Test Condition	$r_d (\Omega)$	Test Condition
		Min	Max	$I_Z (mA)$	Max	$V_R (V)$	Max	$I_Z (mA)$
HZU6.2	B	5.86	6.53	5	2	3.0	50	5
	B1	5.86	6.12					
	B2	6.06	6.33					
	B3	6.26	6.53					
HZU6.8	B	6.47	7.14	5	2	3.5	30	5
	B1	6.47	6.73					
	B2	6.65	6.93					
	B3	6.86	7.14					
HZU7.5	B	7.06	7.84	5	2	4.0	30	5
	B1	7.06	7.36					
	B2	7.28	7.60					
	B3	7.52	7.84					
HZU8.2	B	7.76	8.64	5	2	5.0	30	5
	B1	7.76	8.10					
	B2	8.02	8.36					
	B3	8.28	8.64					
HZU9.1	B	8.56	9.55	5	2	6.0	30	5
	B1	8.56	8.93					
	B2	8.85	9.23					
	B3	9.15	9.55					
HZU10	B	9.45	10.55	5	2	7.0	30	5
	B1	9.45	9.87					
	B2	9.77	10.21					
	B3	10.11	10.55					
HZU11	B	10.44	11.56	5	2	8.0	30	5
	B1	10.44	10.88					
	B2	10.76	11.22					
	B3	11.10	11.56					
HZU12	B	11.42	12.60	5	2	9.0	35	5
	B1	11.42	11.90					
	B2	11.74	12.24					
	B3	12.08	12.60					
HZU13	B	12.47	13.96	5	2	10.0	35	5
	B1	12.47	13.03					
	B2	12.91	13.49					
	B3	13.37	13.96					
HZU15	B	13.84	15.52	5	2	11.0	40	5
	B1	13.84	14.46					
	B2	14.34	14.98					
	B3	14.85	15.52					
HZU16	B	15.37	17.09	5	2	12.0	40	5
	B1	15.37	16.01					
	B2	15.58	16.51					
	B3	16.35	17.09					
HZU18	B	16.94	19.03	5	2	13.0	45	5
	B1	16.94	17.70					
	B2	17.56	18.35					
	B3	18.21	19.03					

Note: 1. Tested with pulse ($P_W = 40$ ms)

Type	Grade	Zener Voltage		Test Condition	Reverse Current		Dynamic Resistance	
		$V_Z (V)^{*1}$			$I_R (\mu A)$	Test Condition	$r_d (\Omega)$	Test Condition
		Min	Max	$I_Z (mA)$	Max	$V_R (V)$	Max	$I_Z (mA)$
HZU20	B	18.86	21.08	5	2	15.0	50	5
	B1	18.86	19.70					
	B2	19.52	20.39					
	B3	20.21	21.08					
HZU22	B	20.88	23.17	5	2	17.0	55	5
	B1	20.88	21.77					
	B2	21.54	22.47					
	B3	22.23	23.17					
HZU24	B	22.93	25.57	5	2	19.0	60	5
	B1	22.93	23.96					
	B2	23.72	24.78					
	B3	24.54	25.57					
HZU27	B	25.10	28.90	2	2	21.0	70	2
HZU30	B	28.00	32.00	2	2	23.0	80	2
HZU33	B	31.00	35.00	2	2	25.0	80	2
HZU36	B	34.00	38.00	2	2	27.0	90	2

Note: 1. Tested with pulse ($P_W = 40$ ms).

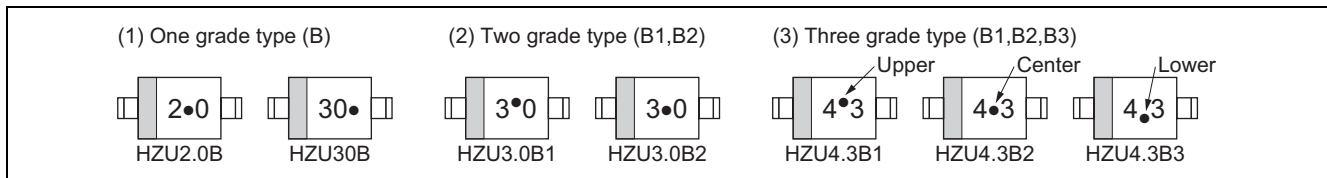
Mark Code

Type	Grade	Mark No.
HZU2.0	B	2 · 0
HZU2.2	B	2 · 2
HZU2.4	B	2 · 4
HZU2.7	B1	2 · 7
	B2	2 · 7
HZU3.0	B1	3 · 0
	B2	3 · 0
HZU3.3	B1	3 · 3
	B2	3 · 3
HZU3.6	B1	3 · 6
	B2	3 · 6
HZU3.9	B1	3 · 9
	B2	3 · 9
HZU4.3	B1	4 · 3
	B2	4 · 3
	B3	4 · 3
HZU4.7	B1	4 · 7
	B2	4 · 7
	B3	4 · 7
HZU5.1	B1	5 · 1
	B2	5 · 1
	B3	5 · 1
HZU5.6	B1	5 · 6
	B2	5 · 6
	B3	5 · 6

Type	Grade	Mark No.
HZU6.2	B1	6 · 2
	B2	6 · 2
	B3	6 · 2
HZU6.8	B1	6 · 8
	B2	6 · 8
	B3	6 · 8
HZU7.5	B1	7 · 5
	B2	7 · 5
	B3	7 · 5
HZU8.2	B1	8 · 2
	B2	8 · 2
	B3	8 · 2
HZU9.1	B1	9 · 1
	B2	9 · 1
	B3	9 · 1
HZU10	B1	10 ·
	B2	10 ·
	B3	10 ·
HZU11	B1	11 ·
	B2	11 ·
	B3	11 ·
HZU12	B1	12 ·
	B2	12 ·
	B3	12 ·

Type	Grade	Mark No.
HZU13	B1	13 ·
	B2	13 ·
	B3	13 ·
HZU15	B1	15 ·
	B2	15 ·
	B3	15 ·
HZU16	B1	16 ·
	B2	16 ·
	B3	16 ·
HZU18	B1	18 ·
	B2	18 ·
	B3	18 ·
HZU20	B1	20 ·
	B2	20 ·
	B3	20 ·
HZU22	B1	22 ·
	B2	22 ·
	B3	22 ·
HZU24	B1	24 ·
	B2	24 ·
	B3	24 ·
HZU27	B	27 ·
HZU30	B	30 ·
HZU33	B	33 ·
HZU36	B	36 ·

Notes: 1. Example of Marking



- The grade B type includes from B1 min. to B3 (or B2) max.
- B grade is standard and has better delivery, these are marked one of B1, B2, B3.
- Type No. is as follows; HZU2.0B, HZU2.2B, ●● HZU36B. (B grade)
- Type No. is as follows; HZU2.7B1, HZU2.7B2, ●●● HZU24B3. (B 1, B2, B3 grade)

Main Characteristic

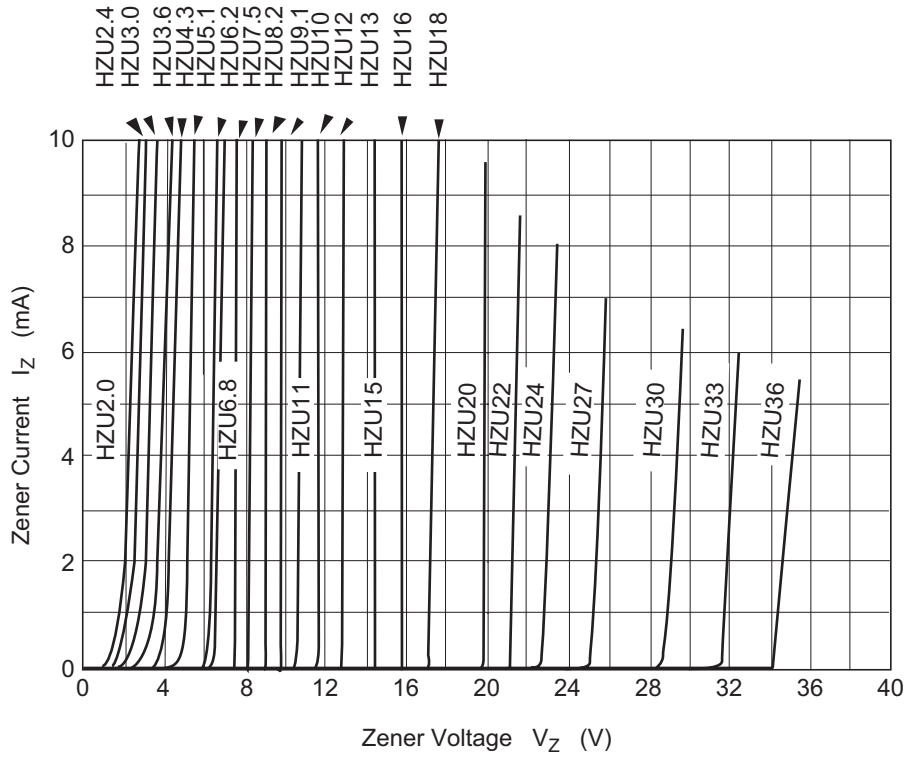


Fig.1 Zener current vs. Zener voltage

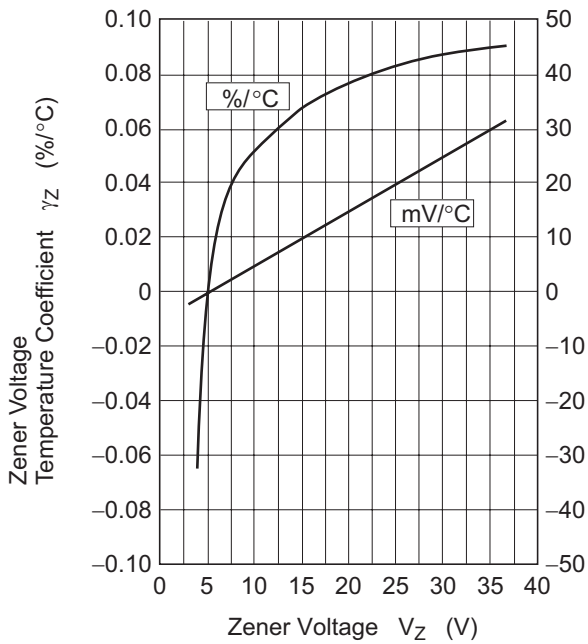


Fig.2 Temperature Coefficient vs. Zener voltage

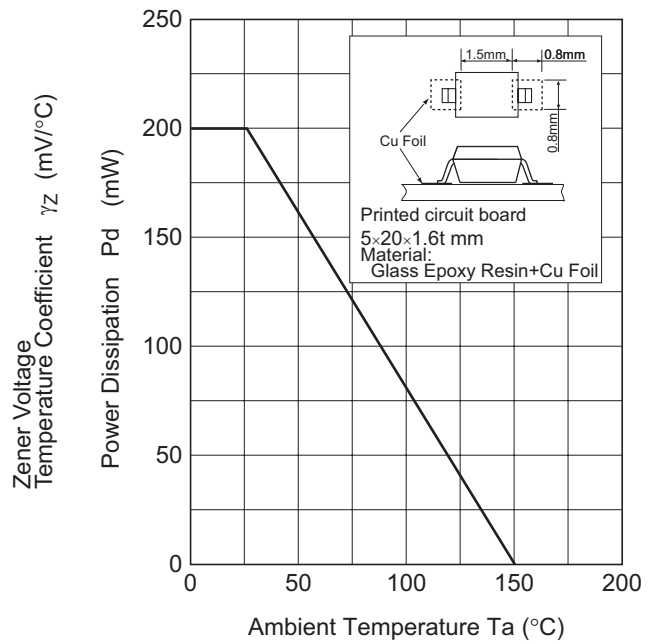
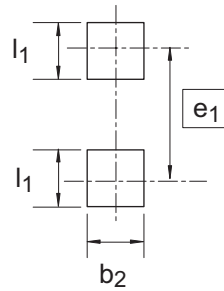
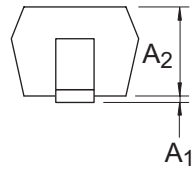
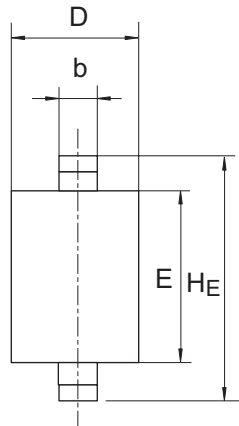


Fig.3 Power Dissipation vs. Ambient Temperature

Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
URP	SC-76A	PTSP0002ZA-A	URP / URPV	0.004g



Pattern of terminal position areas

Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
A ₁	0	-	0.1
A ₂	0.75	0.90	1.05
b	0.15	0.30	0.45
D	1.10	1.25	1.40
E	1.55	1.70	1.85
H _E	2.35	2.50	2.65
b ₂	-	0.80	-
e_1	-	2.30	-
l_1	-	0.80	-

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