

HZU-LL Series

Silicon Epitaxial Planar Zener Diode for Hard Knee Low Noise

REJ03G1216-0500

Rev.5.00

Oct 25, 2007

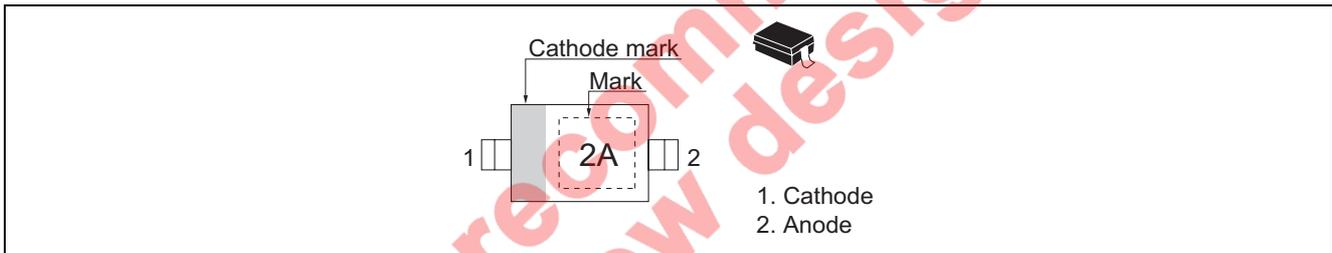
Features

- Low noise voltage (approximately 1/3 to 1/10 lower than the HZU series).
- Temperature coefficient is approximately 1/2 lower than the HZU series.
- V_z - I_z characteristics are semi-logarithmic linear from $I_z = 1 \text{ nA}$ to 1 mA .
- Ultra small Resin Package (URP) is suitable for surface mount design.

Ordering Information

| Part No. | Laser Mark | Package Name | Package Code |
|---------------|------------------|--------------|--------------|
| HZU-LL Series | Let to Mark Code | URP | PTSP0002ZA-A |

Pin Arrangement



Absolute Maximum Ratings

(Ta = 25°C)

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

Note: See Fig3.

Electrical Characteristics

(Ta = 25°C)

| Part No. | Zener Voltage | | | Reverse Current | | Dynamic Resistance | | | | Linearity |
|----------|---------------|-----|---------|-----------------|--------|--------------------|----------|-------------|----------|-----------|
| | Vz(V) *1 | | | IR (nA) | | ZzT (Ω) | | ZzK (kΩ) *2 | | ΔVz(V) *3 |
| | Min | Max | Iz (mA) | Max | VR (V) | Max | IzT (mA) | Typ | IzK (μA) | Max |
| HZU2ALL | 1.6 | 2.0 | 0.5 | 100 | 0.5 | 350 | 0.5 | (1.2) | 50 | 0.5 |
| HZU2BLL | 1.9 | 2.3 | | | | | | | | |
| HZU2CLL | 2.2 | 2.6 | | | | | | | | |
| HZU3ALL | 2.5 | 2.9 | 0.5 | 100 | 1.0 | 360 | 0.5 | (1.2) | 50 | 0.5 |
| HZU3BLL | 2.8 | 3.2 | | | | | | | | |
| HZU3CLL | 3.1 | 3.5 | | | | | | | | |
| HZU4ALL | 3.4 | 3.8 | 0.5 | 100 | 2.0 | 370 | 0.5 | (1.5) | 50 | 0.5 |
| HZU4BLL | 3.7 | 4.1 | | | | | | | | |
| HZU4CLL | 4.0 | 4.4 | | | | | | | | |
| HZU5ALL | 4.3 | 4.7 | 0.5 | 100 | 3.0 | 380 | 0.5 | (1.5) | 50 | 0.5 |
| HZU5BLL | 4.6 | 5.0 | | | | | | | | |
| HZU5CLL | 4.9 | 5.3 | | | | | | | | |

- Notes: 1. Tested with DC.
 2. Reference only.
 3. $\Delta V_z = V_z (I_z = 0.5 \text{ mA}) - V_z (I_z = 0.05 \text{ mA})$
 4. Type No. is as follows; HZU2ALL, HZU2BLL, ... HZU5CLL.

Mark Code

| Part No | Mark No. |
|---------|----------|
| HZU2ALL | 2A |
| HZU2BLL | 2B |
| HZU2CLL | 2C |
| HZU3ALL | 3A |
| HZU3BLL | 3B |
| HZU3CLL | 3C |

| Part No | Mark No. |
|---------|----------|
| HZU4ALL | 4A |
| HZU4BLL | 4B |
| HZU4CLL | 4C |
| HZU5ALL | 5A |
| HZU5BLL | 5B |
| HZU5CLL | 5C |

Main Characteristic

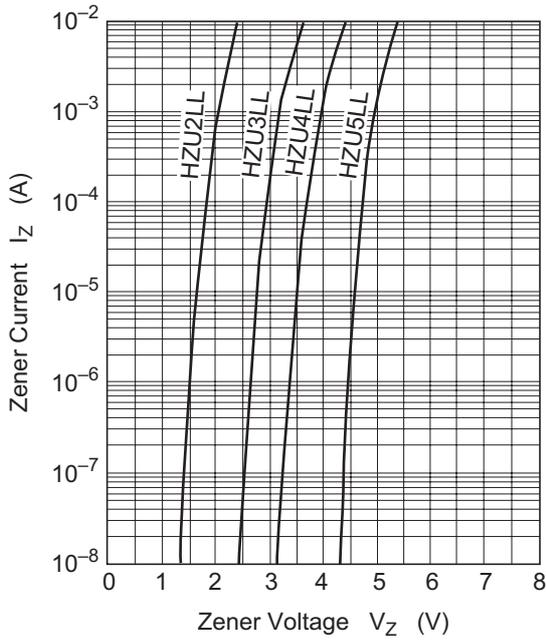


Fig.1 Zener current vs. Zener voltage

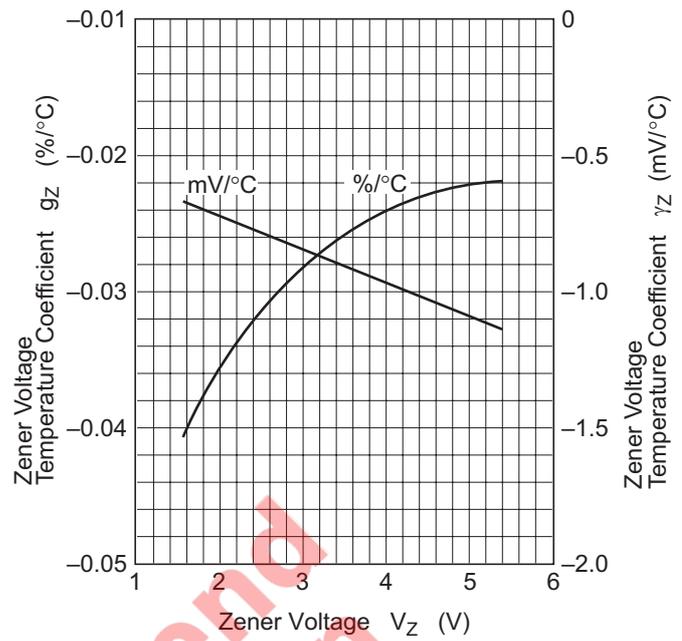


Fig.2 Temperature Coefficient vs. Zener voltage

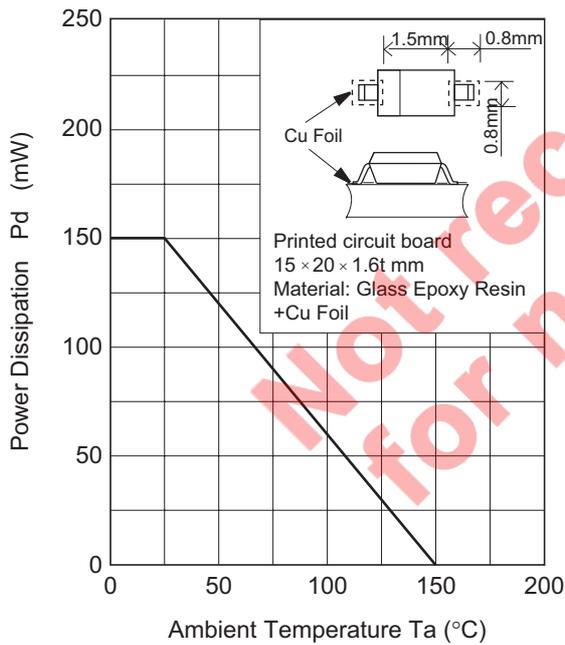
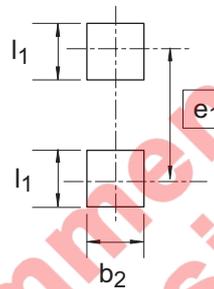
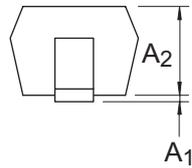
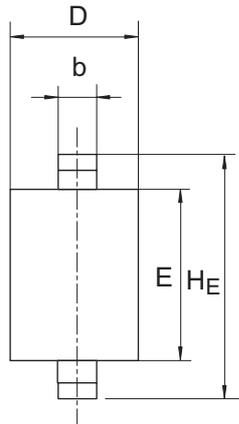


Fig.3 Power Dissipation vs. Ambient Temperature

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 | - |

Not recommended for new design

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