

# HRV103B

## Silicon Schottky Barrier Diode for Rectifying

REJ03G0399-0100

Rev.1.00

Nov 10, 2004

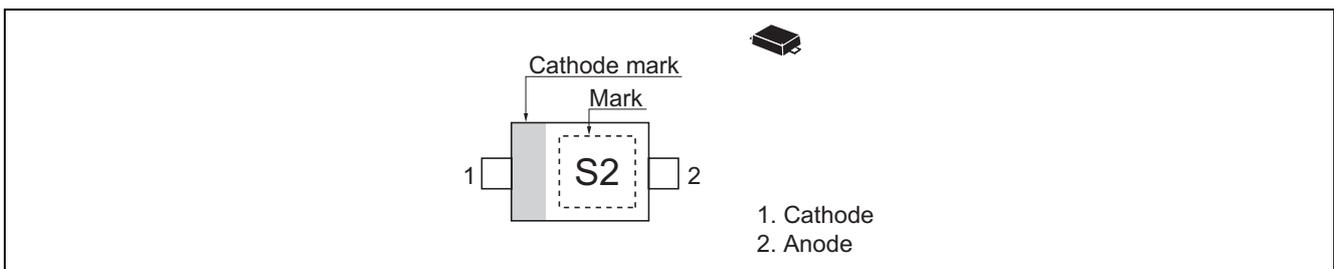
### Features

- Low reverse current and suitable for high efficiency rectifying.
- Thin Ultra small Resin Package (TURP) is suitable for high density surface mounting and high speed assembly.

### Ordering Information

| Type No. | Laser Mark | Package Code |
|----------|------------|--------------|
| HRV103B  | S2         | TURP         |

### Pin Arrangement



## Absolute Maximum Ratings

(Ta = 25°C)

| Item                                      | Symbol         | Value       | Unit |
|---|----------------|-------------|------|
| Repetitive peak reverse voltage           | $V_{RRM}$      | 30          | V    |
| Reverse voltage                           | $V_R$          | 30          | V    |
| Average rectified current                 | $I_o^{*2}$     | 1           | A    |
| Non-Repetitive peak forward surge current | $I_{FSM}^{*1}$ | 5           | A    |
| Junction temperature                      | $T_j$          | 150         | °C   |
| Storage temperature                       | $T_{stg}$      | -55 to +150 | °C   |

Notes: 1. 10ms sine wave 1 pulse

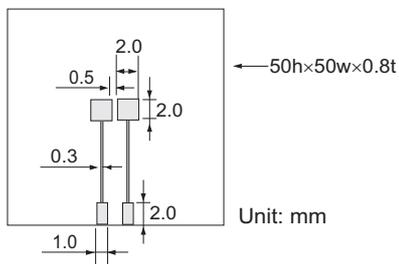
2. Ta = 48°C, With Ceramics board (board size: 50mm × 50 mm, Land size 2mm × 2 mm)  
Short form wave (θ180°C),  $V_R = 15V$ .

## Electrical Characteristics

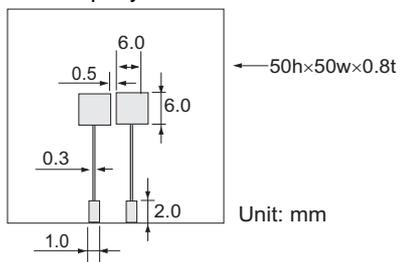
(Ta = 25°C)

| Item               | Symbol        | Min | Typ | Max  | Unit | Test Condition                           |
|--------------------|---------------|-----|-----|------|------|--|
| Forward voltage    | $V_{F1}$      | —   | —   | 0.35 | V    | $I_F = 100\text{ mA}$                    |
|                    | $V_{F2}$      | —   | —   | 0.45 |      | $I_F = 700\text{ mA}$                    |
|                    | $V_{F3}$      | —   | —   | 0.50 |      | $I_F = 1\text{ A}$                       |
| Reverse current    | $I_{R1}$      | —   | —   | 10   | μA   | $V_R = 5\text{ V}$                       |
|                    | $I_{R2}$      | —   | —   | 100  |      | $V_R = 30\text{ V}$                      |
| Capacitance        | C             | —   | —   | 40   | pF   | $V_R = 10\text{ V}$ , $f = 1\text{ MHz}$ |
| Thermal resistance | $R_{th(j-a)}$ | —   | 100 | —    | °C/W | Ceramics board <sup>*1</sup>             |
|                    |               | —   | 200 | —    |      | Glass epoxy board <sup>*2</sup>          |

Notes: 1. Ceramics board



2. Glass epoxy board



3. TURP is the structure which radiates heat to a substrate, please perform mounting to a substrate by reflow.

Main Characteristics

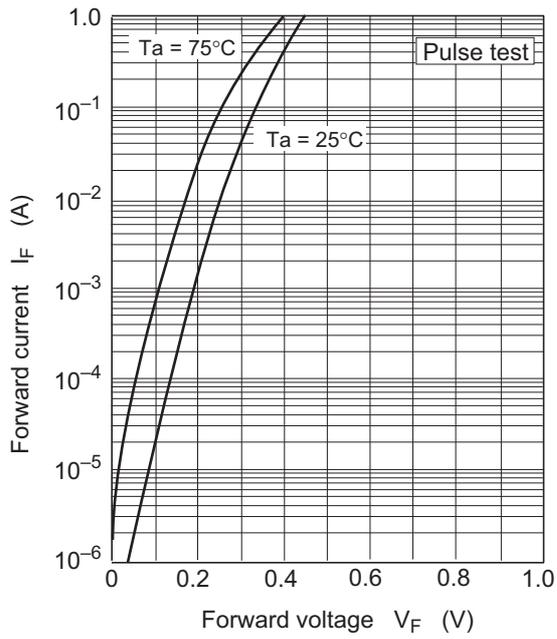


Fig.1 Forward current vs. Forward voltage

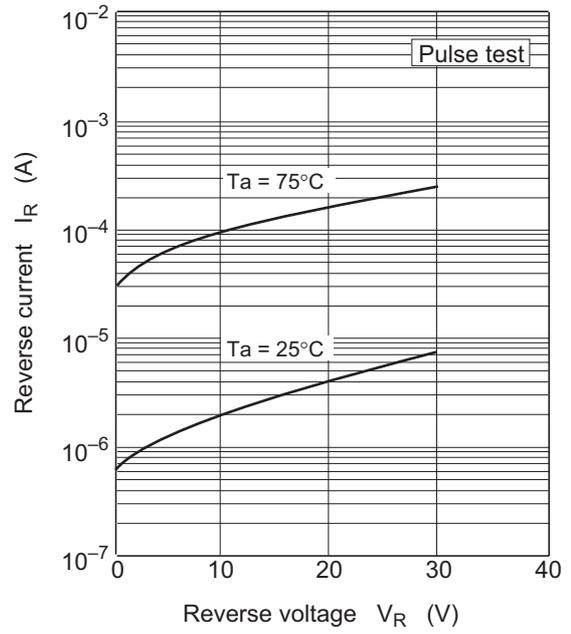


Fig.2 Reverse current vs. Reverse voltage

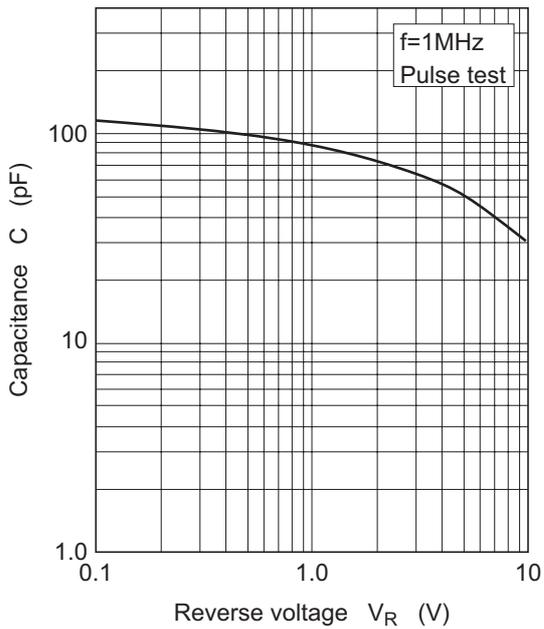


Fig.3 Capacitance vs. Reverse voltage

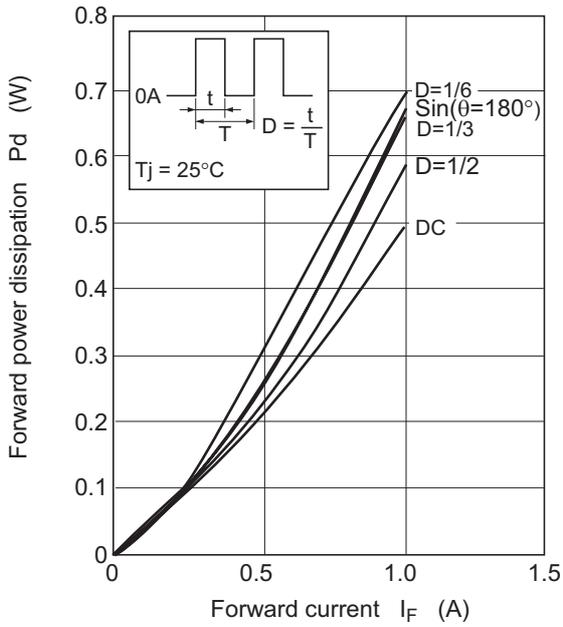


Fig.4 Forward power dissipation vs. Forward current

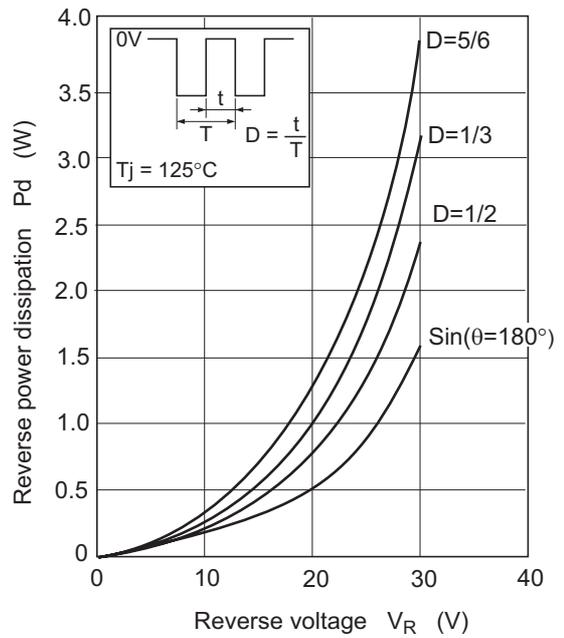


Fig.5 Reverse power dissipation vs. Reverse voltage

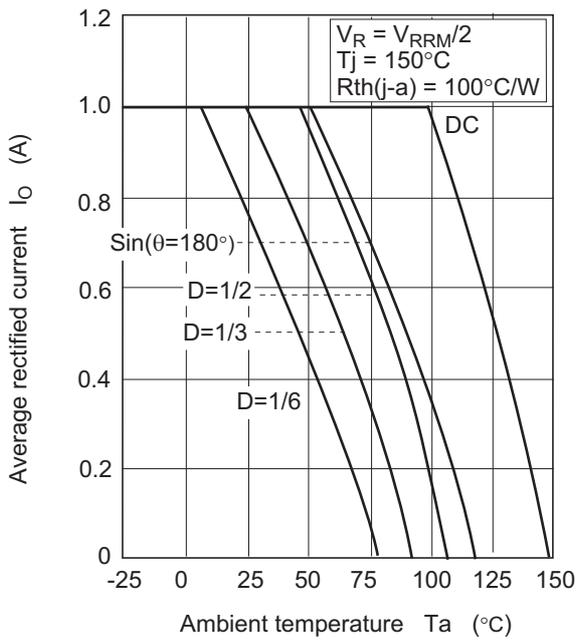
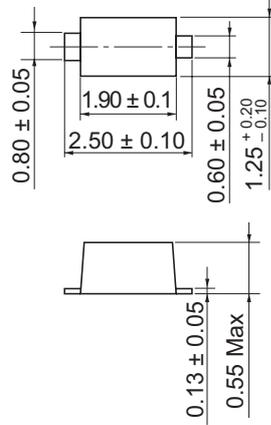


Fig.6 Average rectified current vs. Ambient temperature

Package Dimensions

Unit: mm



|                        |         |
|------------------------|---------|
| Package Code           | TURP    |
| JEDEC                  | —       |
| JEITA                  | —       |
| Mass (reference value) | 0.004 g |

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