

## General Purpose Schottky Barrier Diode

### General Description

The SDB110Q Schottky barrier diodes are designed for high-speed switching applications, circuit protection, and voltage clamping. Extremely low forward voltage reduces conduction losses. Miniature surface mount package is excellent for hand-held and portable applications where space is limited.

### Features and Benefits

- Low forward drop voltage and low leakage current
- Very low switching time
- “Green” device and RoHS compliant device
- Available in full lead (Pb)-free device



SOD-523



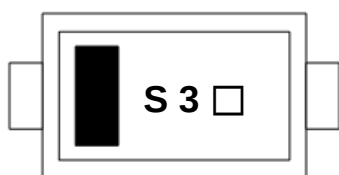
### Applications

- General purpose and high speed switching
- Protection circuit and voltage clamping

### Ordering Information

| Part Number | Marking Code | Package | Packaging   |
|-------------|--------------|---------|-------------|
| SDB110Q     | S3 □         | SOD-523 | Tape & Reel |

### Marking Information

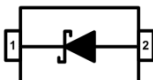


S 3 = Specific Device Code

□ = Year & Week Code Marking

■ = Color band denote cathode

### Pinning Information

| Pin | Description | Simplified Outline                                                                   | Graphic Symbol                                                                        |
|-----|-------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 1   | Cathode     |  |  |
| 2   | Anode       |                                                                                      |                                                                                       |

## Absolute Maximum Ratings (T<sub>amb</sub>=25°C, Unless otherwise specified)

| Characteristic                                    | Symbol           | Ratings | Unit |
|---------------------------------------------------|------------------|---------|------|
| DC reverse voltage                                | V <sub>R</sub>   | 10      | V    |
| Forward current                                   | I <sub>F</sub>   | 30      | mA   |
| Non-repetitive peak forward surge current(t=10ms) | I <sub>FSM</sub> | 2       | A    |
| Power dissipation <sup>1)</sup>                   | P <sub>D</sub>   | 150     | mW   |

<sup>1)</sup> Device mounted on FR-4 board with recommended pad layout.

## Thermal Characteristics (T<sub>amb</sub>=25°C, Unless otherwise specified)

| Characteristic                                        | Symbol               | Ratings   | Unit |
|-------------------------------------------------------|----------------------|-----------|------|
| Thermal resistance, junction to ambient <sup>1)</sup> | R <sub>th(j-a)</sub> | 833       | °C/W |
| Operating junction temperature                        | T <sub>j</sub>       | 150       | °C   |
| Storage temperature range                             | T <sub>stg</sub>     | -55 ~ 150 | °C   |

<sup>1)</sup> Device mounted on FR-4 board with recommended pad layout.

## Electrical Characteristics (T<sub>amb</sub>=25°C, Unless otherwise specified)

| Characteristic                        | Symbol            | Test Condition             | Min. | Typ. | Max. | Unit |
|---------------------------------------|-------------------|----------------------------|------|------|------|------|
| Forward voltage <sup>2)</sup>         | V <sub>F(1)</sub> | I <sub>F</sub> =1mA        | 0.1  | -    | 0.3  | V    |
|                                       | V <sub>F(2)</sub> | I <sub>F</sub> =10mA       | -    | -    | 0.4  | V    |
|                                       | V <sub>F(3)</sub> | I <sub>F</sub> =30mA       | -    | -    | 0.5  | V    |
| Reverse leakage current <sup>3)</sup> | I <sub>R(1)</sub> | V <sub>R</sub> =5V         | -    | -    | 0.5  | μA   |
|                                       | I <sub>R(2)</sub> | V <sub>R</sub> =10V        | -    | -    | 1    | μA   |
| Total capacitance                     | C <sub>T</sub>    | V <sub>R</sub> =5V, f=1MHz | -    | 4.2  | -    | pF   |

<sup>2)</sup> Pulse test: t<sub>p</sub>≤380μs, Duty cycle≤2%

<sup>3)</sup> Pulse test: t<sub>p</sub>≤5ms, Duty cycle≤2%

## Rating and Characteristic Curves

Fig. 1) Typical Forward Characteristics

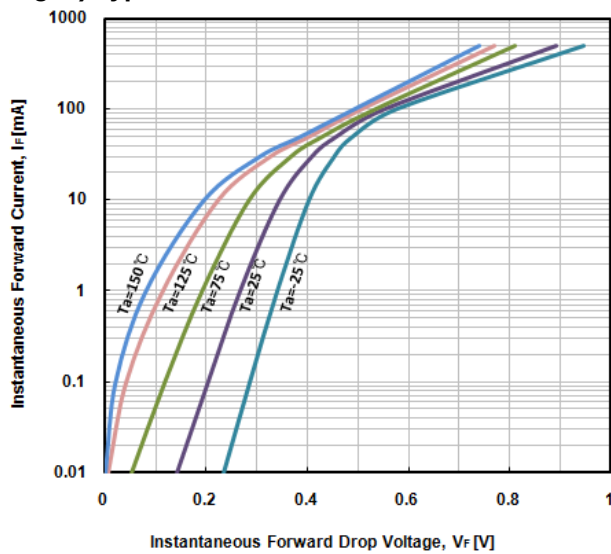


Fig. 2) Typical Reverse Characteristics

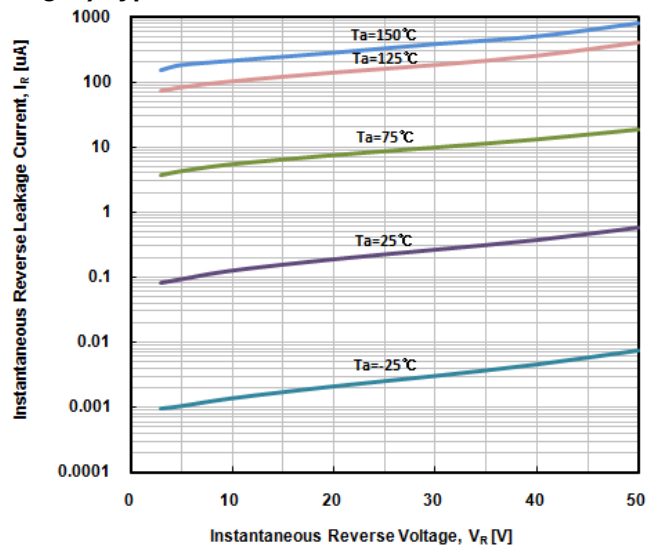


Fig. 3) Typical Total Capacitance Characteristics

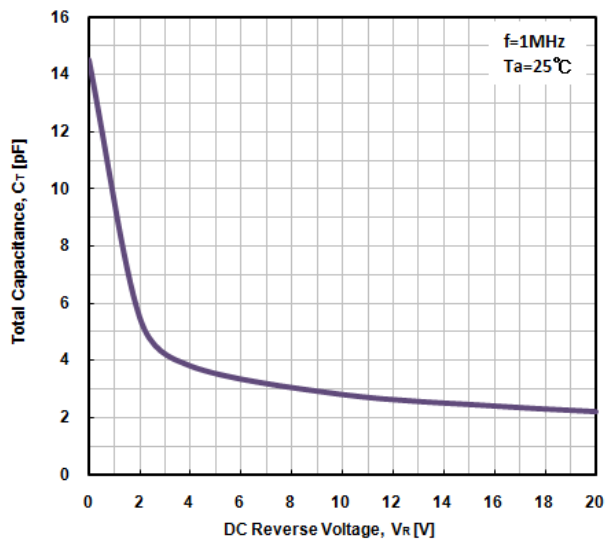
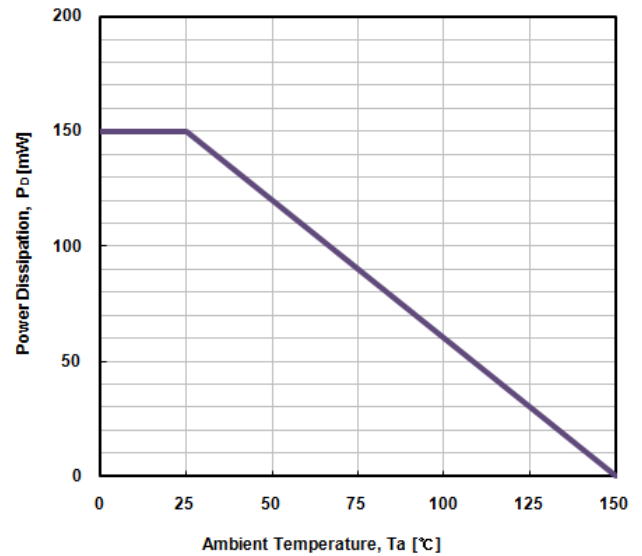
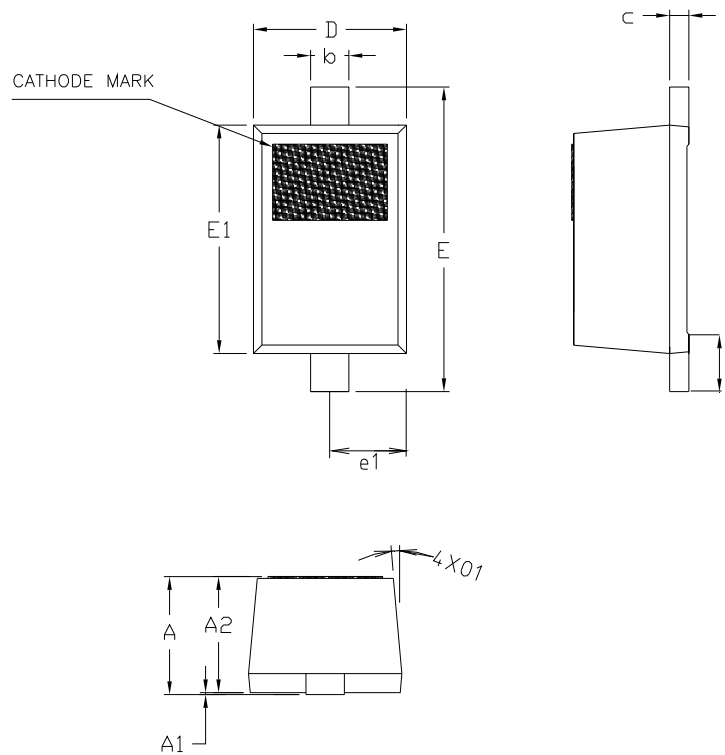


Fig. 4) Power dissipation vs. Ambient temperature

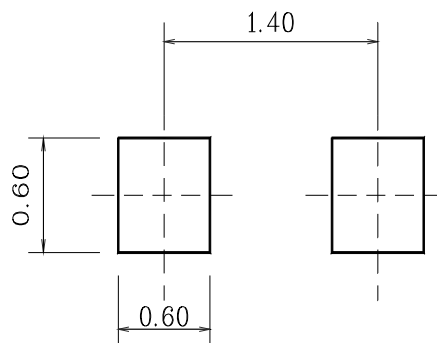


## Package Outline Dimensions



| SYMBOL | MILLIMETERS |         |         | NOTE |
|--------|-------------|---------|---------|------|
|        | MINIMUM     | NOMINAL | MAXIMUM |      |
| A      | 0.60        | 0.70    | 0.80    |      |
| A1     | 0.00        | —       | 0.10    |      |
| A2     | 0.50        | 0.60    | 0.70    |      |
| b      | 0.18        | 0.25    | 0.32    |      |
| c      | 0.08        | 0.12    | 0.16    |      |
| D      | 0.70        | 0.80    | 0.90    |      |
| E      | 1.50        | 1.60    | 1.70    |      |
| E1     | 1.10        | 1.20    | 1.30    |      |
| e1     | 0.40 BSC    |         |         |      |
| L      | 0.20        | 0.30    | 0.40    |      |
| θ1     | 4°          | —       | 10°     |      |

※ Recommend PCB solder land (Unit : mm)



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