

# RB500V-40

## Silicon Epitaxial Planar Schottky Barrier Diode

### Features

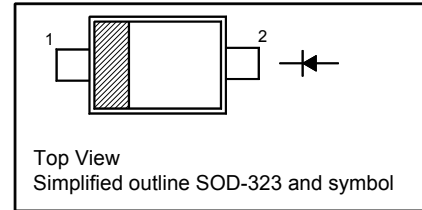
- Small surface mounting type
- Low  $I_R$
- High reliability

### Applications

- Low current rectification

### PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | Cathode     |
| 2   | Anode       |



### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

| Parameter                                     | Symbol    | Value         | Unit             |
|-----------------------------------------------|-----------|---------------|------------------|
| Peak Reverse Voltage                          | $V_{RM}$  | 45            | V                |
| Reverse Voltage                               | $V_R$     | 40            | V                |
| Mean Rectifying Current                       | $I_O$     | 0.1           | A                |
| Peak Forward Surge Current (60 Hz for 1 Cyc.) | $I_{FSM}$ | 1             | A                |
| Power Dissipation                             | $P_{tot}$ | 200           | mW               |
| Junction Temperature                          | $T_j$     | 125           | $^\circ\text{C}$ |
| Storage Temperature Range                     | $T_{stg}$ | - 40 to + 125 | $^\circ\text{C}$ |

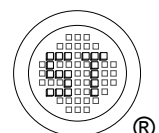
### Thermal Characteristics

| Parameter                                                 | Symbol          | Max. | Unit               |
|-----------------------------------------------------------|-----------------|------|--------------------|
| Thermal Resistance from Junction to Ambient <sup>1)</sup> | $R_{\theta JA}$ | 500  | $^\circ\text{C/W}$ |

<sup>1)</sup> Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

### Characteristics at $T_a = 25^\circ\text{C}$

| Parameter                                                                      | Symbol      | Min. | Typ. | Max. | Unit          |
|--------------------------------------------------------------------------------|-------------|------|------|------|---------------|
| Reverse Breakdown Voltage<br>at $I_R = 100 \mu\text{A}$                        | $V_{(BR)R}$ | 45   | -    | -    | V             |
| Forward Voltage<br>at $I_F = 10 \text{ mA}$                                    | $V_F$       | -    | -    | 0.45 | V             |
| Reverse Current<br>at $V_R = 10 \text{ V}$                                     | $I_R$       | -    | -    | 1    | $\mu\text{A}$ |
| Capacitance Between Terminals<br>at $V_R = 10 \text{ V}$ , $f = 1 \text{ MHz}$ | $C_T$       | -    | 2    | -    | pF            |



## Electrical Characteristics Curves

Fig 1. Reverse Characteristics Curve

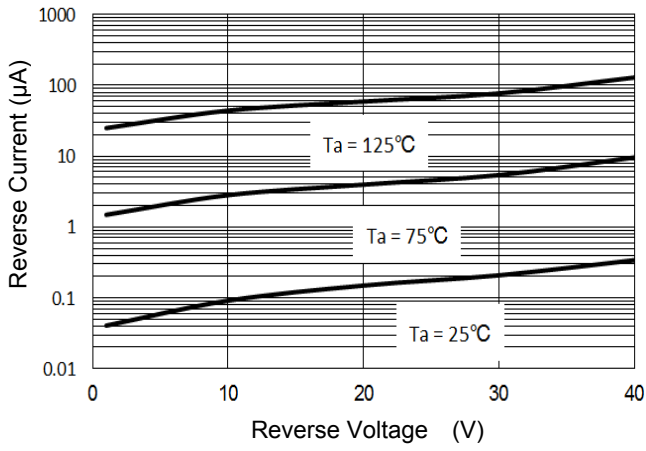


Fig 2. Forward Characteristics Curve

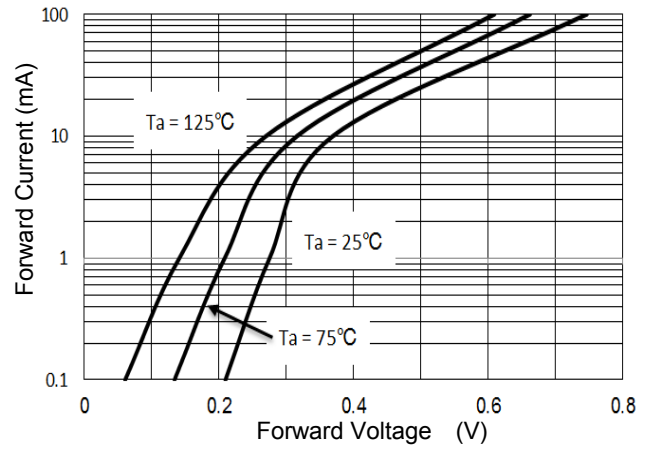


Fig 3. Junction Capacitance

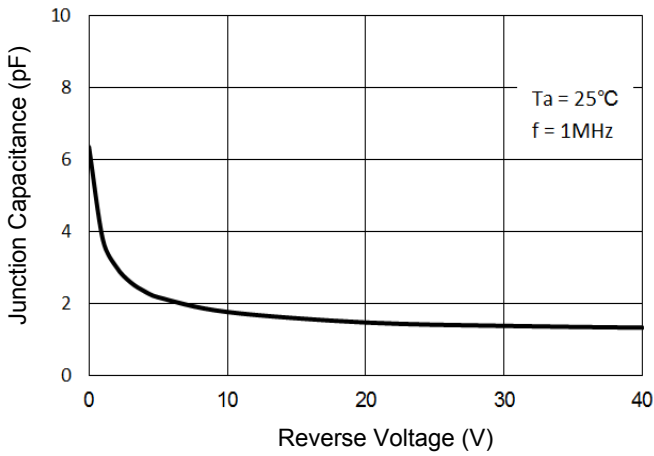
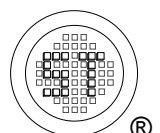
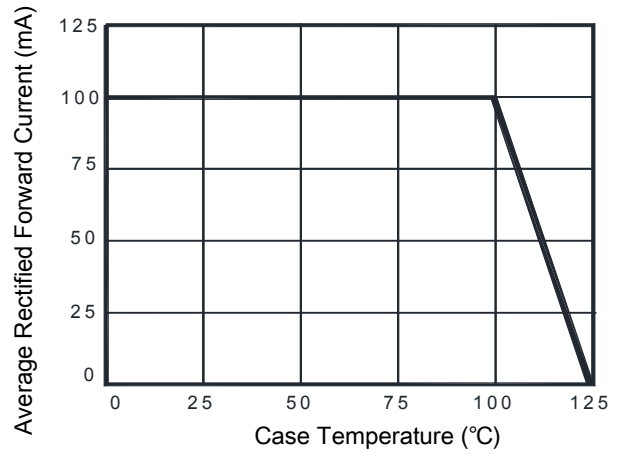


Fig 4. Forward Current Derating Curve

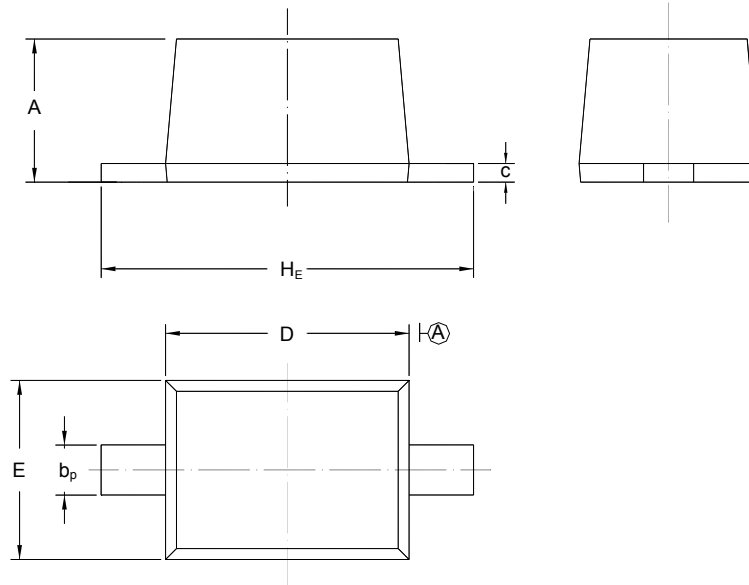


# RB500V-40

## PACKAGE OUTLINE

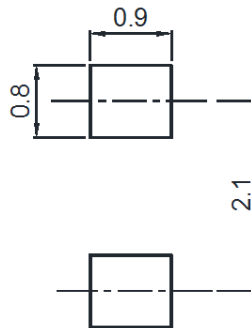
Plastic surface mounted package; 2 leads

SOD-323



| UNIT | A            | b <sub>p</sub> | C            | D            | E            | H <sub>E</sub> |
|------|--------------|----------------|--------------|--------------|--------------|----------------|
| mm   | 1.10<br>0.80 | 0.40<br>0.25   | 0.15<br>0.10 | 1.80<br>1.60 | 1.35<br>1.15 | 2.80<br>2.30   |

## Recommended Soldering Footprint

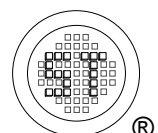


## Packing information

| Package | Tape Width (mm) | Pitch   |               | Reel Size |      | Per Reel Packing Quantity |
|---------|-----------------|---------|---------------|-----------|------|---------------------------|
|         |                 | mm      | inch          | mm        | inch |                           |
| SOD-323 | 8               | 4 ± 0.1 | 0.157 ± 0.004 | 178       | 7    | 3,000                     |

## Marking information

" \*\*\* " = Part No.  
 " III " = Cathode line  
 " S9 " = Part No.  
 Font type: Arial



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