

# SBM245L

## ULTRA LOW VF SCHOTTKY RECTIFIER

**Voltage**

**45 V**

**Current**

**2 A**

**DO-41**

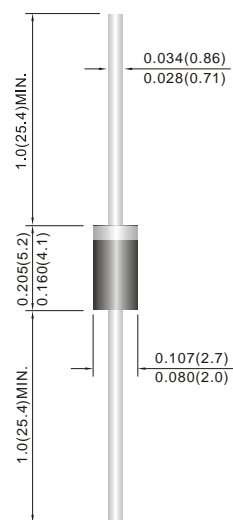
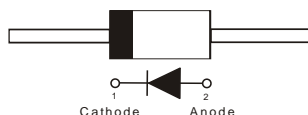
Unit : inch(mm)

### Features

- Ultra low forward voltage drop, low power loss
- High efficiency operation
- Lead free in compliance with EU RoHS 2011/65/EU directive

### Mechanical Data

- Case: Molded plastic, DO-41
- Terminals: Axial leads,solderable per MIL-STD-750, Method 2026
- Polarity : Color band denotes cathode end
- Approx. Weight: 0.012 ounces, 0.336 grams
- Marking: Part number



### Maximum Ratings ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

| PARAMETER   |          | SYMBOL          | LIMIT       | UNIT                 |
|---|----------|-----------------|-------------|----------------------|
| Maximum repetitive peak reverse voltage   |          | $V_{RRM}$       | 45          | V                    |
| Maximum rms voltage   |          | $V_{RMS}$       | 32          | V                    |
| Maximum dc blocking voltage   |          | $V_R$           | 45          | V                    |
| Maximum average forward rectified current   |          | $I_{F(AV)}$     | 2           | A                    |
| Peak forward surge current : 8.3ms single half sine-wave superimposed on rated load |          | $I_{FSM}$       | 50          | A                    |
| Typical thermal resistance  | (Note 1) | $R_{\theta JA}$ | 80          | $^{\circ}\text{C/W}$ |
|   | (Note 2) | $R_{\theta JC}$ | 40          |                      |
| Operating junction temperature range  |          | $T_J$           | -55 to +150 | $^{\circ}\text{C}$   |
| Storage temperature range   |          | $T_{STG}$       | -55 to +150 | $^{\circ}\text{C}$   |

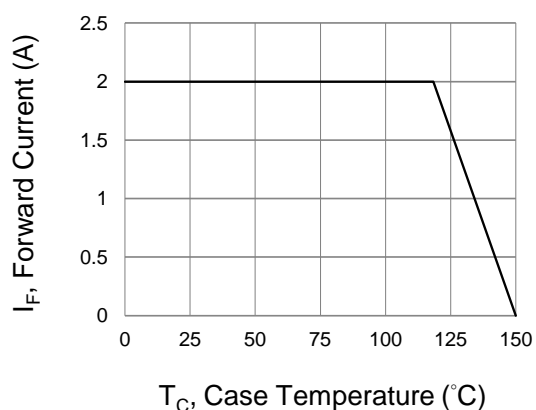
Note:1.The testing condition of the thermal resistance (junction to ambient) is based on 10 mm lead length between mini copper pads

2.The testing condition of the thermal resistance (junction to Case) is based on 10 mm lead length between two 10cm x 10cm copper pads

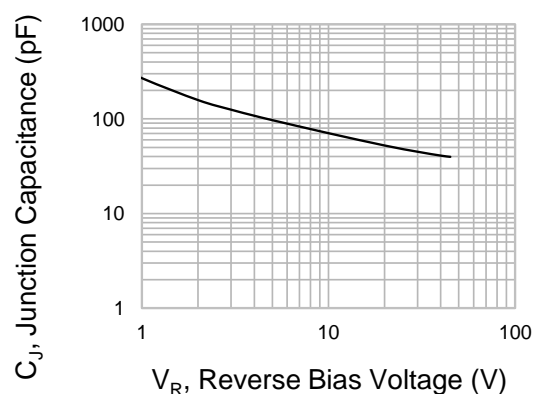
## SBM245L

Electrical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)

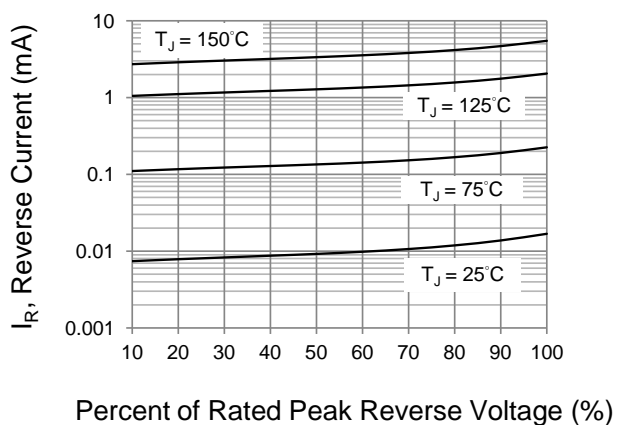
| PARAMETER                     | SYMBOL   | TEST CONDITION     |   | MIN.   | TYP.   | MAX.    | UNITS               |
|-------------------------------|----------|--------------------|---|--------|--------|---------|---------------------|
| Breakdown voltage             | $V_{BR}$ | $I_R=0.5\text{mA}$ | $T_J=25^\circ\text{C}$                            | 45     | -      | -       | V                   |
| Instantaneous forward voltage | $V_F$    | $I_F=0.5\text{A}$  | $T_J=25^\circ\text{C}$                            | -      | 0.33   | -       | V                   |
|                               |          | $I_F=2\text{A}$    | $T_J=25^\circ\text{C}$                            | -      | 0.43   | 0.47    | V                   |
|                               |          | $I_F=0.5\text{A}$  | $T_J=125^\circ\text{C}$                           | -      | 0.25   | -       | V                   |
|                               |          | $I_F=2\text{A}$    | $T_J=125^\circ\text{C}$                           | -      | 0.4    | -       | V                   |
| Reverse current               | $I_R$    | $V_R=36\text{V}$   | $T_J=25^\circ\text{C}$                            | -      | 12     | -       | $\mu\text{A}$       |
|                               |          | $V_R=45\text{V}$   | $T_J=25^\circ\text{C}$<br>$T_J=125^\circ\text{C}$ | -<br>- | -<br>2 | 40<br>- | $\mu\text{A}$<br>mA |



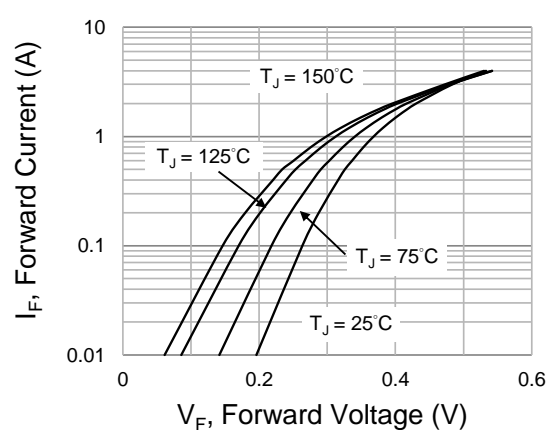
**Fig.1 Forward Current Derating Curve**



**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



## SBM245L

### Part No\_packing code\_Version

SBM245L\_AY\_00001

SBM245L\_AY\_10001

SBM245L\_B0\_00001

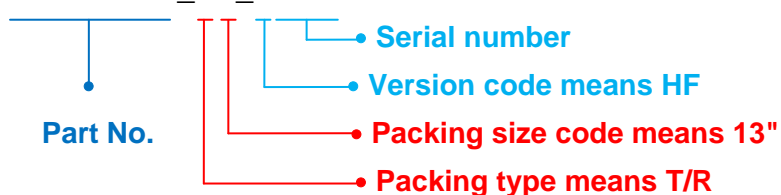
SBM245L\_B0\_10001

SBM245L\_R2\_00001

SBM245L\_R2\_10001

### For example :

**RB500V-40\_R2\_00001**



| Packing Code <b>XX</b>               |                         |                                     |                         | Version Code <b>XXXXXX</b> |                         |  |
|--------------------------------------|-------------------------|-------------------------------------|-------------------------|----------------------------|-------------------------|--|
| Packing type                         | 1 <sup>st</sup><br>Code | Packing size code                   | 2 <sup>nd</sup><br>Code | HF or<br>RoHS              | 1 <sup>st</sup><br>Code | 2 <sup>nd</sup> ~5 <sup>th</sup><br>Code |
| Tape and Ammunition Box (T/B)        | <b>A</b>                | N/A                                 | <b>0</b>                | <b>HF</b>                  | <b>0</b>                | serial number                            |
| Tape and Reel (T/R)                  | <b>R</b>                | 7"                                  | <b>1</b>                | <b>RoHS</b>                | <b>1</b>                | serial number                            |
| Bulk Packing (B/P)                   | <b>B</b>                | 13"                                 | <b>2</b>                |                            |                         |  |
| Tube Packing (T/P)                   | <b>T</b>                | 26mm                                | <b>X</b>                |                            |                         |  |
| Tape and Reel (Right Oriented) (TRR) | <b>S</b>                | 52mm                                | <b>Y</b>                |                            |                         |  |
| Tape and Reel (Left Oriented) (TRL)  | <b>L</b>                | PANASERT T/B<br>CATHODE UP (PBCU)   | <b>U</b>                |                            |                         |  |
| FORMING                              | <b>F</b>                | PANASERT T/B<br>CATHODE DOWN (PBCD) | <b>D</b>                |                            |                         |  |



## **SBM245L**

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