

# SB202 thru SB2010

## Schottky Barrier Rectifiers Reverse Voltage 20 to 100V Forward Current 2.0A

### Feature & Dimensions

- \* Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- \* Low power loss, high efficiency
- \* For use in low voltage high frequency inverters, free wheeling, and polarity protection applications
- \* Guarding for over voltage protection
- \* High temperature soldering guaranteed:  
260°C/10 seconds at terminals

### Mechanical Data

**Case:** JEDEC DO-41, molded plastic over sky die

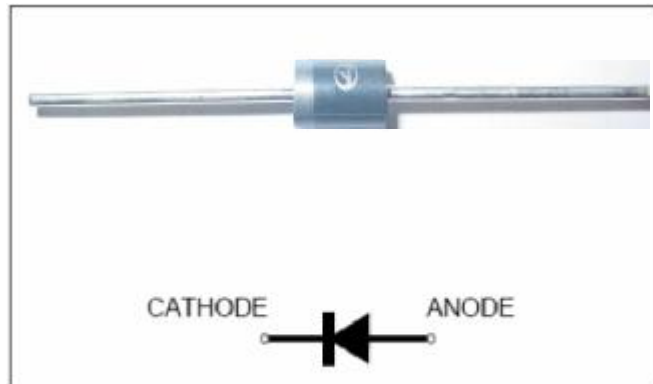
**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

**Weight:** 0.011 oz., 0.284 g

**Handling precaution:** None



We declare that the material of product compliance with ROHS requirements

### 1. Maximum & Thermal Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter Symbol   | symbol               | SB202       | SB203 | SB204 | SB205 | SB206 | SB208 | SB209 | SB2010 | Unit |
|--|----------------------|-------------|-------|-------|-------|-------|-------|-------|--------|------|
| device marking code  |                      | SB202       | SB203 | SB204 | SB205 | SB206 | SB208 | SB209 | SB2010 |      |
| Maximum repetitive peak reverse voltage  | $V_{RRM}$            | 20          | 30    | 40    | 50    | 60    | 80    | 90    | 100    | V    |
| Maximum RMS voltage  | $V_{RMS}$            | 14          | 21    | 28    | 35    | 42    | 56    | 63    | 70     | V    |
| Maximum DC blocking voltage  | $V_{DC}$             | 20          | 30    | 40    | 50    | 60    | 80    | 90    | 100    | V    |
| Maximum average forward rectified current<br>0.375" (9.5mm) lead length (See fig. 1)             | $I_F$<br>(AV)        | 2.0         |       |       |       |       |       |       |        | A    |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$            | 60          |       |       |       |       |       |       |        | A    |
| thermal resistance, junction to ambient  | $R_{\theta JA}$      | 35          |       |       |       |       |       |       |        | °C/W |
| thermal resistance, junction to case   | $R_{\theta JC}$      | 5           |       |       |       |       |       |       |        | °C/W |
| Operating junction and storage temperature range   | $T_J$ ,<br>$T_{STG}$ | -40 to +150 |       |       |       |       |       |       |        | °C   |

### Electrical Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter Symbol  | symbol | SB202 | SB203 | SB204 | SB205 | SB206 | SB208 | SB209 | SB2010 | Unit |    |
|---|--------|-------|-------|-------|-------|-------|-------|-------|--------|------|----|
| Maximum instantaneous forward voltage at 2.0A   | $V_F$  | 0.50  |       |       | 0.70  |       | 0.84  |       |        | V    |    |
| Maximum DC reverse current $T_A = 25^\circ\text{C}$<br>at rated DC blocking voltage $T_A = 125^\circ\text{C}$ | $I_R$  | 0.5   |       |       |       | 10    |       |       |        |      | mA |
| Typical junction capacitance at 4.0V, 1MHz  | $C_J$  | 170   |       |       |       |       |       |       |        | PF   |    |

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## 2. Characteristic Curves (TA = 25°C unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

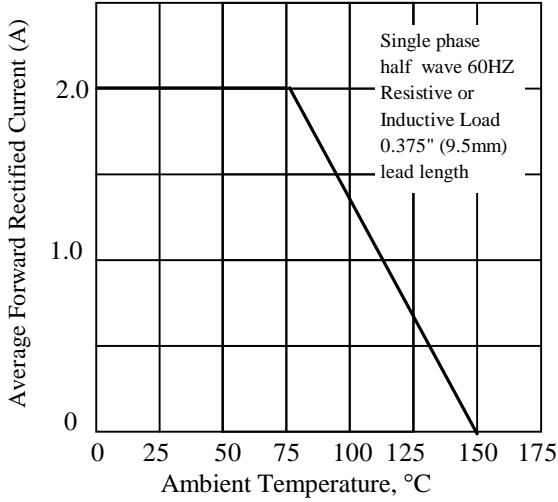


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

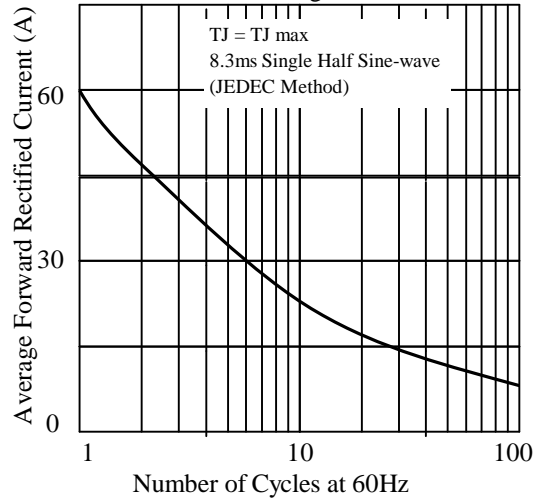


Fig 3. - Typical Instantaneous Forward Characteristics

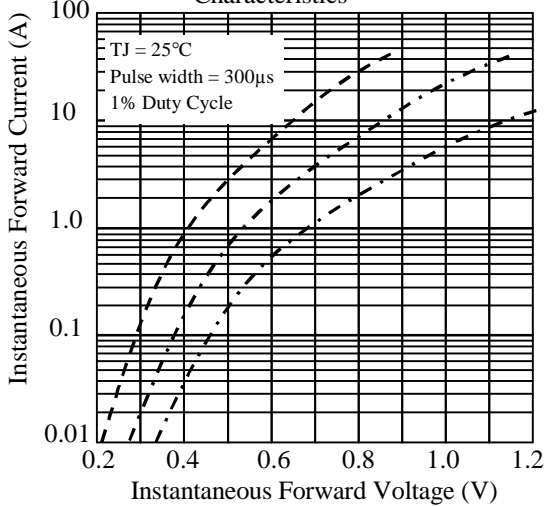


Fig 4. - Typical Reverse Characteristics

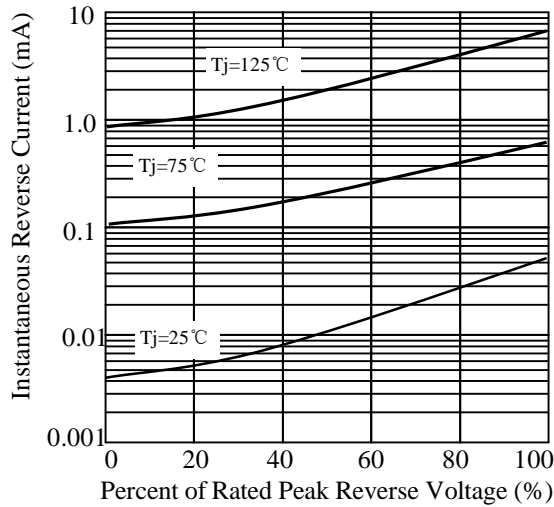


Fig 5. - typical transient thermal impedance

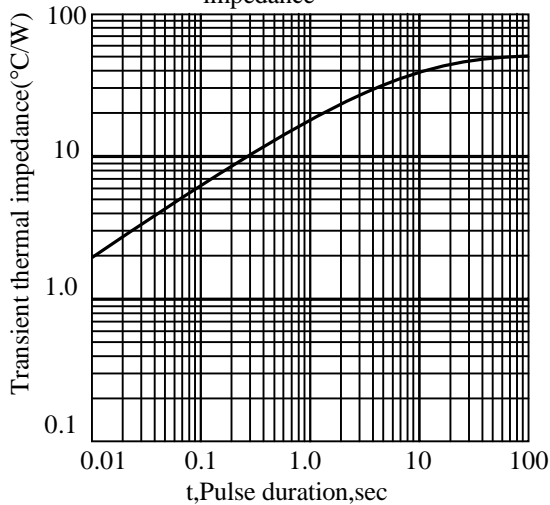
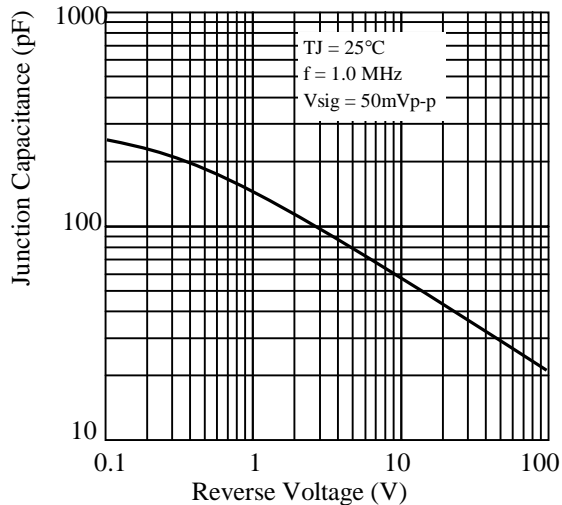
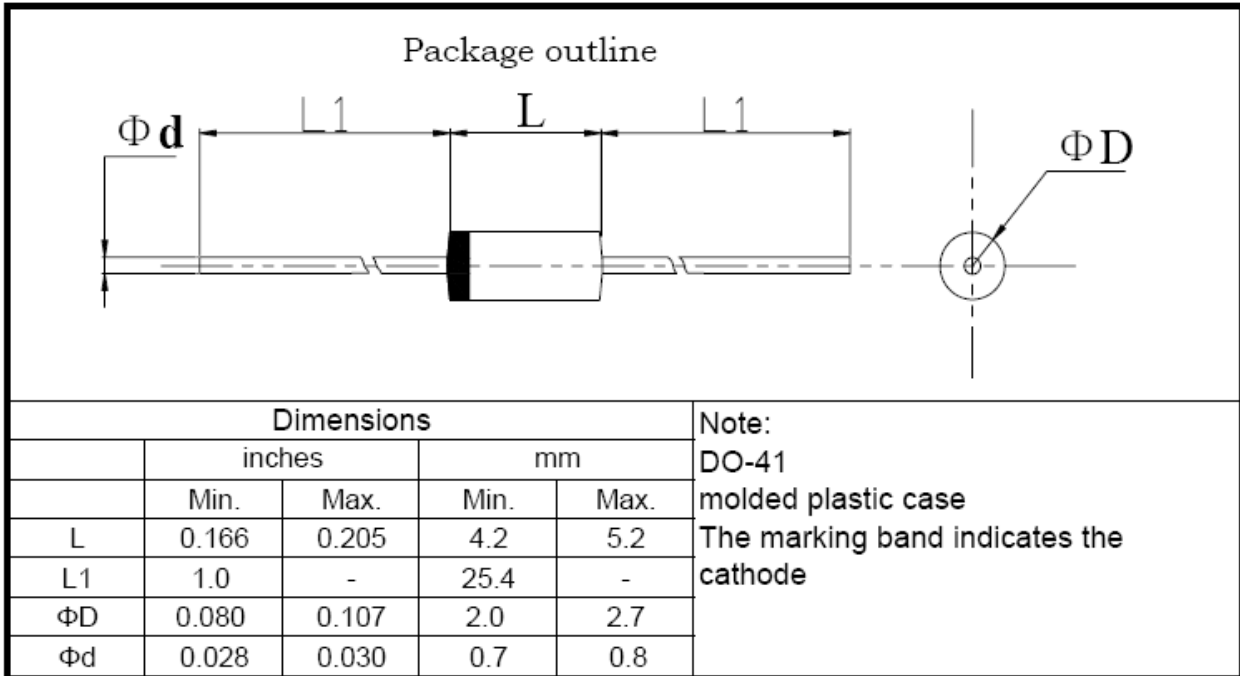


Fig 6. - Typical Junction Capacitance



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### 3. dimension:

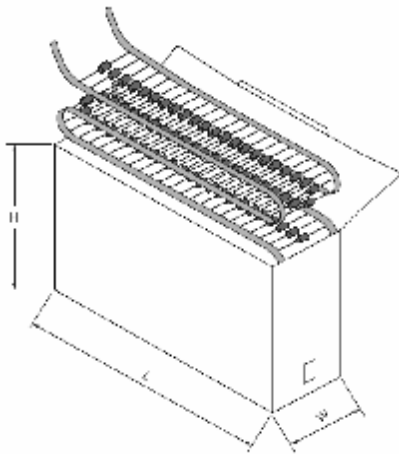


|     |               |
|-----|---------------|
| 标题: | 文件编号: WI-250  |
|     | 第 4 版 第 0 次修改 |
|     | 第 1 页         |

塑封生产线轴向产品包装规范

1 弹带盒装 ammo and box

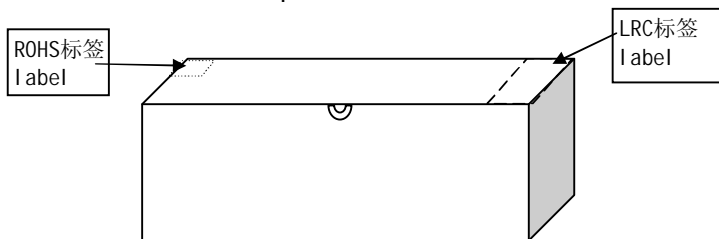
1.1. 弹带盒规格 ammo spec.



单位: mm

|     | L     | W    | H    |
|-----|-------|------|------|
| T52 | 262±2 | 76±2 | 90±2 |
| T42 | 262±2 | 64±2 | 90±2 |
| T26 | 250±3 | 45±3 | 95±3 |

1.2 弹带内盒要求 inner box spec.



|                             |               |
|-----------------------------|---------------|
| 标题:<br><b>塑封生产线轴向产品包装规范</b> | 文件编号: WI-250  |
|                             | 第 4 版 第 0 次修改 |
|                             | 第 2 页         |

1.4 标签要求 label spec.

1.4.1 LRC标签 LRC label

成型 FORMING \*\*\*\*\* ← 成型规格forming spec.

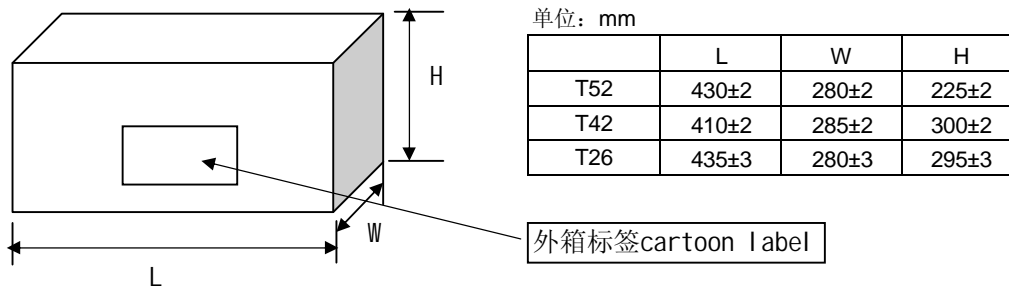
型号 TYPE \*\*\*\*\* ← LRC产品型号 type

|                                |       |                                   |
|--------------------------------|-------|-----------------------------------|
| 重复峰压 (V)<br>PRV (V)            | ****  | ← 产品重复峰压值 peak repetitive voltage |
| 额定电流 (A)<br>I <sub>o</sub> (A) | **    | ← 产品额定电流值 average output current  |
| 数量 (只)<br>QTY (pcs)            | ****  | ← 产品数量 quantity                   |
| 检验员<br>CHECKER                 | 02    |                                   |
| 日期:<br>DATE:                   | ***** | ← 产品生产日期 date                     |

1.4.2环保标签 environmental protection label



2.外箱规格 carton spec.



3 按以上包装方式, 编带数量和外包装箱产品数量: typing and carton spec.

|                                  | 塑封外型                |       |                      |          |
|----------------------------------|---------------------|-------|----------------------|----------|
|                                  | A-405 & DO-41 & R-1 | R-3   | DO-15                | DO-201AD |
| 每根编带数量<br>quantity/ammo          | 3K                  | 1.8K  | 2K(T52)<br>1.8K(T26) | 0.8K     |
| 外箱数量 (T52编带)<br>quantity/cartoon | 30K                 | 18K   | 20K                  | 8.0K     |
| 外箱数量 (T26编带)<br>quantity/cartoon | 60K                 | 36K   | 36K                  | -        |
| 外箱数量 (T42编带)<br>quantity/cartoon | 54K                 | 32.4K | 36K                  | -        |

标题:

塑封生产线轴向产品包装规范

文件编号: WI-250

第 4 版 第 0 次修改

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4 编带规格 brede spec



| 尺寸代号  | 编带尺寸 typing dimension |              |              |              |              |              |
|-------|-----------------------|--------------|--------------|--------------|--------------|--------------|
|       | 26/tape               | 35/tape      | 40/tape      | 42/tape      | 52/tape      | 52/tape#     |
| W     | 26 0.0/+1.6           | 35 -1.0/+0.5 | 40 -1.0/+0.5 | 42 -1.0/+1.0 | 52 -1.0/+2.0 | 52 -1.0/+2.0 |
| P     | 5±0.5                 | 5±0.5        | 5±0.5        | 5±0.5        | 5±0.5        | 10±0.5       |
| L1-L2 | <1.0                  | <1.0         | <1.0         | <1.0         | <1.0         | <1.0         |
| H     | 6±1.0                 | 6±1.0        | 6±1.0        | 6±1.0        | 6±1.0        | 6±1.0        |
| Z     | <1.0                  | <1.0         | <1.0         | <1.0         | <1.0         | <1.0         |
| R     | <1.0                  | <1.0         | <1.0         | <1.0         | <1.0         | <1.0         |
| T     | >3.5                  | >3.5         | >3.5         | >3.5         | >3.5         | >3.5         |

注: 52编带# 为DO-201AD编带规格 "52编带#" just for D0-201AD

1. 红白编带厚度为0.05mm; 两种胶带各自之间无明显色差; 编带要求均为胶带。  
The typing thickness is 0.05mm and color is obvious difference
2. 两端引带20~40cm. Typing lead over 20~40cm
3. 红色编带一端为二极管“负极”; 白色编带一端为二极管“正极”。  
red color is cathode ,white color is anode
4. 无卤 green epoxy compound (无卤产品才贴HF only)

**Green**

## SB202 thru SB2010

### 4. Update Record

| 版次 | 更新记录   | 更新作者 | 更新日期      |
|----|--------|------|-----------|
| 1  | 第一版    | 周杰   | 2010-3-3  |
| 2  | 增加包装规范 | 周杰   | 2011-9-23 |