

# SB320-E thru SB3100-E

## Schottky Barrier Rectifiers Reverse Voltage 20 to 100V Forward Current 3.0A

### 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
- \* IEC61000-4-2 ESD Air Contact  $\geq \pm 15KV$

### Mechanical Data

**Case:** JEDEC DO-201AD, molded plastic over sky die

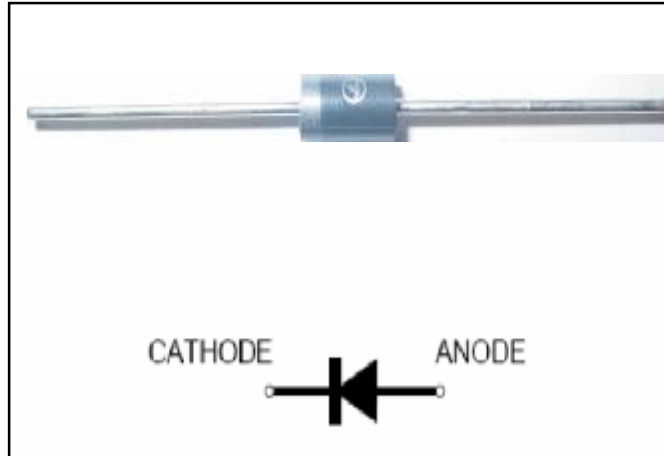
**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

**Weight:** 0.038 oz., 1.03 g

**Handling precaution:** None



We declare that the material of product compliance with ROHS requirements

### 1. Electrical Characteristic

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

| Parameter Symbol   | symbol          | SB320-E     | SB330-E   | SB340-E   | SB350-E   | SB360-E   | SB380-E   | SB390-E   | SB3100-E   | Unit |
|--|-----------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------|
| device marking code  |                 | SB320 ESD   | SB330 SDE | SB340 ESD | SB350 ESD | SB360 ESD | SB380 SDE | SB390 ESD | SB3100 ESD |      |
| 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 0.375" (9.5mm) lead length (See fig. 1)                | $I_F(AV)$       | 3.0         |           |           |           |           |           |           |            | A    |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$       | 80          |           |           |           |           |           |           |            | A    |
| Typical thermal resistance (Note 1)  | $R_{\theta JA}$ | 50          |           |           |           |           |           |           |            | °C/W |
| Operating junction and storage temperature range   | $T_J, T_{STG}$  | -40 to +125 |           |           |           |           |           |           |            | °C   |

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|---|--------|---------|---------|---------|---------|---------|---------|---------|----------|------|----|
| Maximum instantaneous forward voltage at 3.0A   | $V_F$  | 0.50    |         |         | 0.70    |         | 0.84    |         |          | V    |    |
| Maximum DC reverse current $T_A = 25^\circ C$<br>at rated DC blocking voltage $T_A = 100^\circ C$ | $I_R$  | 0.5     |         |         |         | 20      |         |         |          |      | mA |
| Typical junction capacitance at 4.0V, 1MHz  | $C_J$  | 250     |         |         |         |         |         |         |          | PF   |    |

#### NOTES:

1. Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length, P.C.B. mounted

# SB320-E thru SB3100-E

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

Fig. 1 - Forward Current Derating Curve

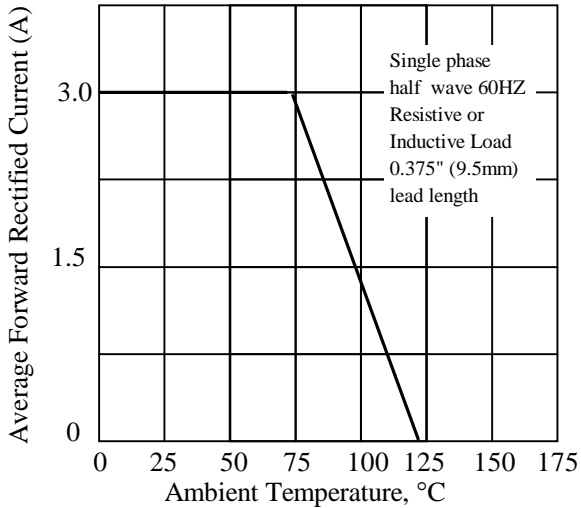


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

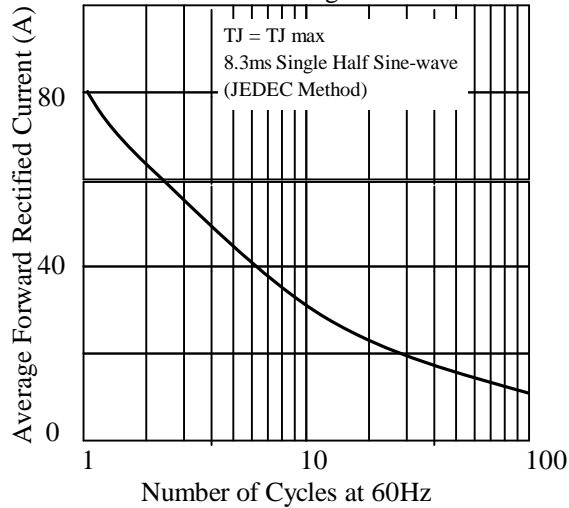


Fig. 3 - Typical Instantaneous Forward Characteristics

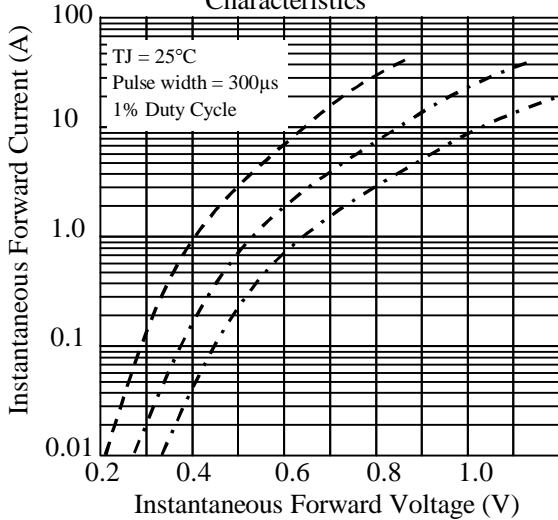


Fig. 4 - Typical Reverse Characteristics

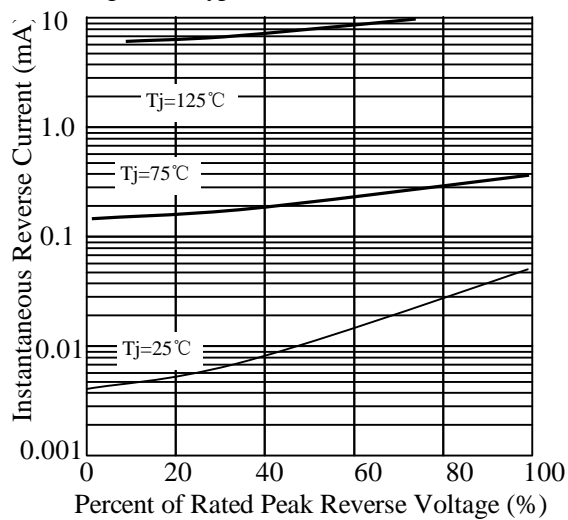


Fig. 5 - typical transient thermal impedance

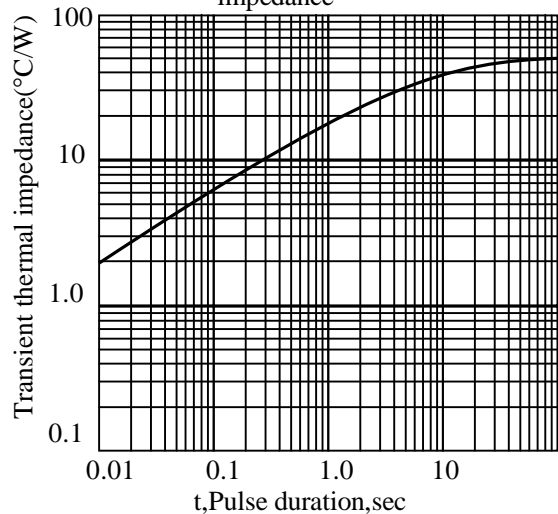
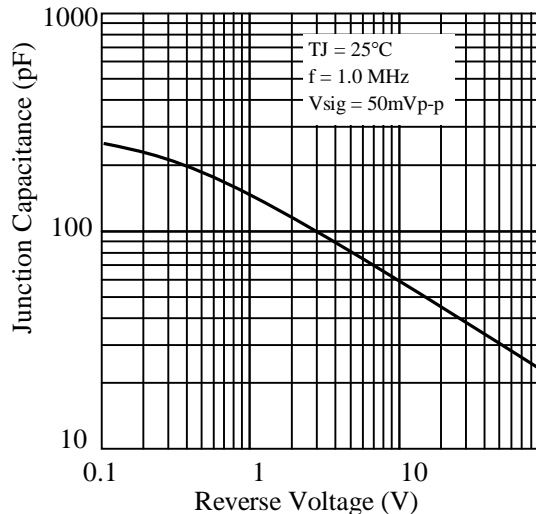
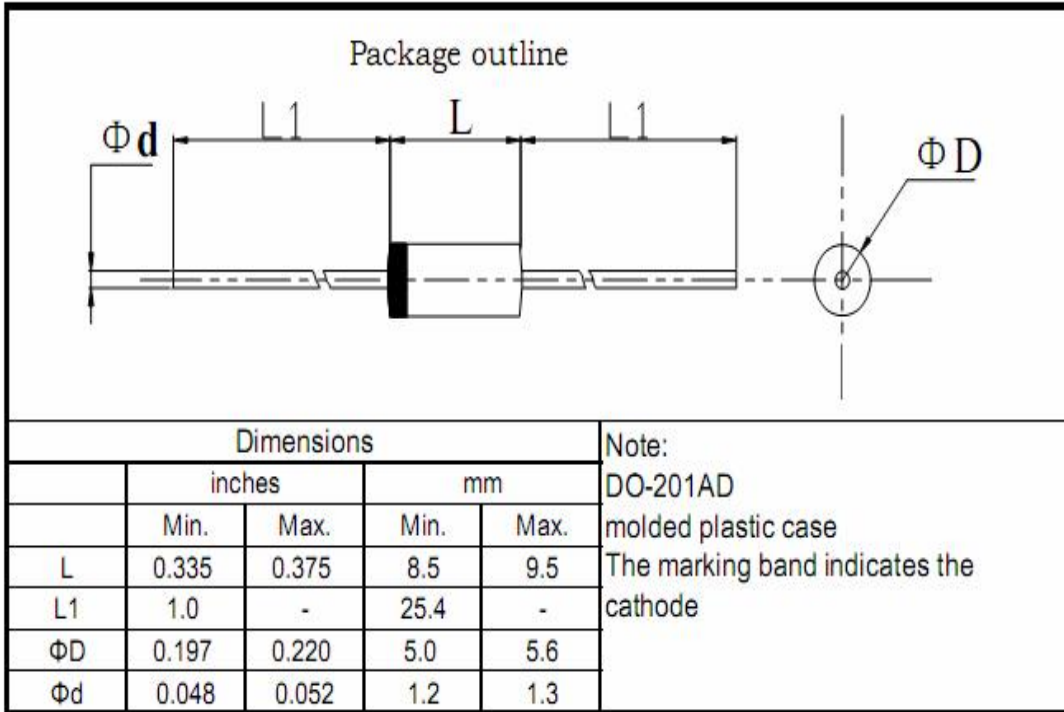


Fig. 6 - Typical Junction Capacitance



## SB320-E thru SB3100-E

### 3. dimension:

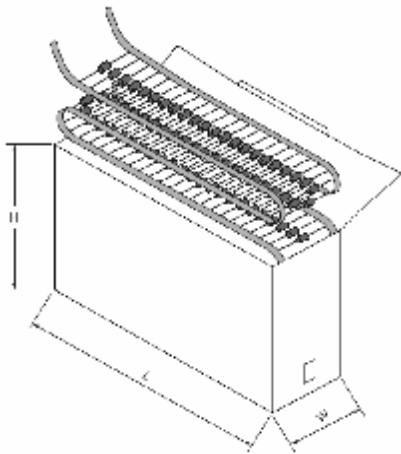


|     |               |
|-----|---------------|
| 标题: | 文件编号: WI-250  |
|     | 第 4 版 第 0 次修改 |
|     | 第 1 页         |

塑封生产线轴向产品包装规范

1 弹带盒装 ammo and box

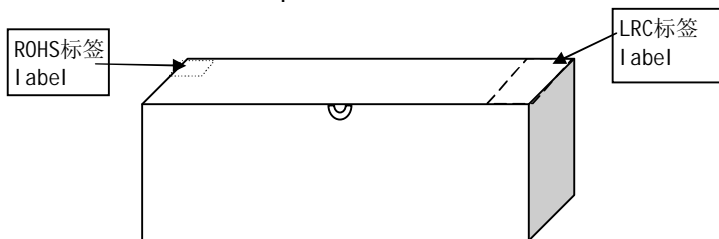
1.1. 弹带盒规格 ammo spec.



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.

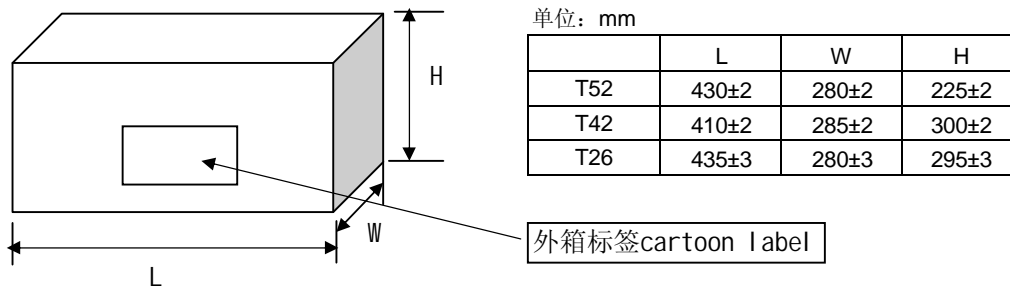
型号 TYPE \*\*\*\*\* ← LRC产品型号 type

|                                |       |                                   |
|--------------------------------|-------|-----------------------------------|
| 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:

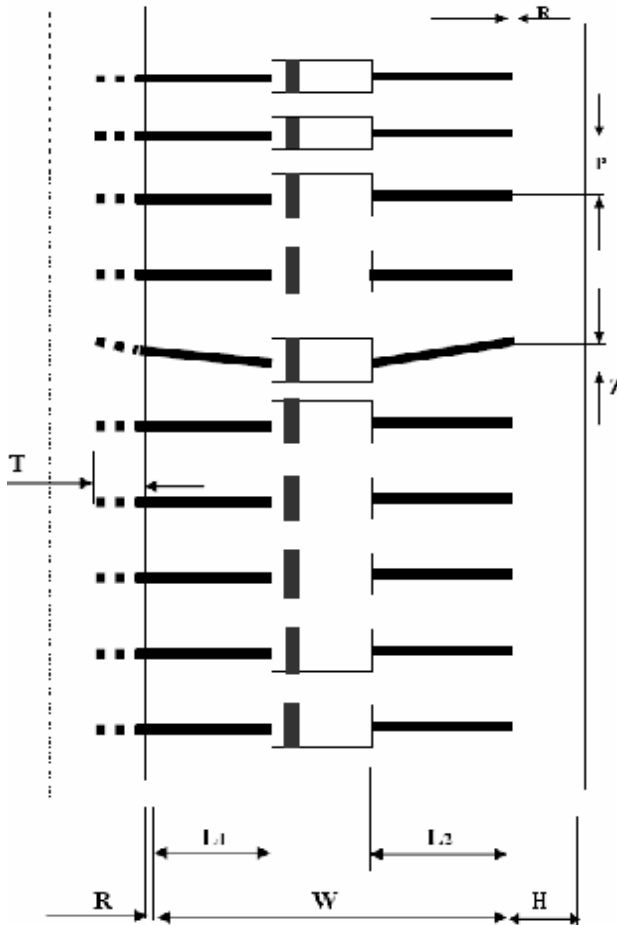
塑封生产线轴向产品包装规范

文件编号: WI-250

第 4 版 第 0 次修改

第 3 页

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#     |
| <b>W</b>     | 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 |
| <b>P</b>     | 5±0.5                 | 5±0.5        | 5±0.5        | 5±0.5        | 5±0.5        | 10±0.5       |
| <b>L1-L2</b> | <1.0                  | <1.0         | <1.0         | <1.0         | <1.0         | <1.0         |
| <b>H</b>     | 6±1.0                 | 6±1.0        | 6±1.0        | 6±1.0        | 6±1.0        | 6±1.0        |
| <b>Z</b>     | <1.0                  | <1.0         | <1.0         | <1.0         | <1.0         | <1.0         |
| <b>R</b>     | <1.0                  | <1.0         | <1.0         | <1.0         | <1.0         | <1.0         |
| <b>T</b>     | >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

## SB320-E thru SB3100-E

### 4. Update Record

| 版次 | 更新记录   | 更新作者 | 更新日期       |
|----|--------|------|------------|
| 1  | 第一版    | 周杰   | 2010.05.28 |
| 2  | 增加包装规范 | 周杰   | 2012.03.28 |