

# SB520-E thru SB5100-E

## Schottky Barrier Rectifiers

Reverse Voltage 20 to 100V Forward Current 5.0A

### 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

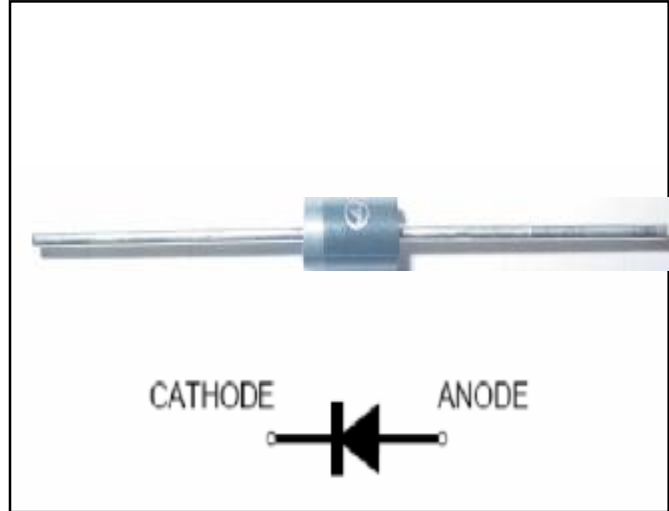
**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

**Weight:** 0.038oz., 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	SB520-E	SB530-E	SB540-E	SB550-E	SB560-E	SB580-E	SB5100-E	Unit
device marking code		SB520 ESD	SB530 ESD	SB540 ESD	SB550 ESD	SB560 ESD	SB580 ESD	SB5100 ESD	
Maximum repetitive peak reverse voltage	$V_{RRM}$	20	30	40	50	60	80	100	V
Maximum RMS voltage	$V_{RMS}$	14	21	28	35	42	56	70	V
Maximum DC blocking voltage	$V_{DC}$	20	30	40	50	60	80	100	V
Maximum average forward rectified current 0.375" (9.5mm) lead length (See fig. 1)	$I_F(AV)$	5.0							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	150							A
Operating junction and storage temperature range	TJ, TSTG	-40 to +150							°C

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

Parameter Symbol	symbol	SB520-E	SB530-E	SB540-E	SB550-E	SB560-E	SB580-E	SB5100-E	Unit
Maximum instantaneous forward voltage at 5.0A	$V_F$	0.50			0.70		0.84		V
Maximum DC reverse current $T_A = 25^\circ C$ at rated DC blocking voltage $T_A = 125^\circ C$	$I_R$	1 20							mA
thermal resistance, junction to ambient	$R_{\theta JA}$	35							°C/W
Typical junction capacitance at 4.0V, 1MHz	CJ	500			380				PF

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

Fig. 1 - Forward Current Derating Curve

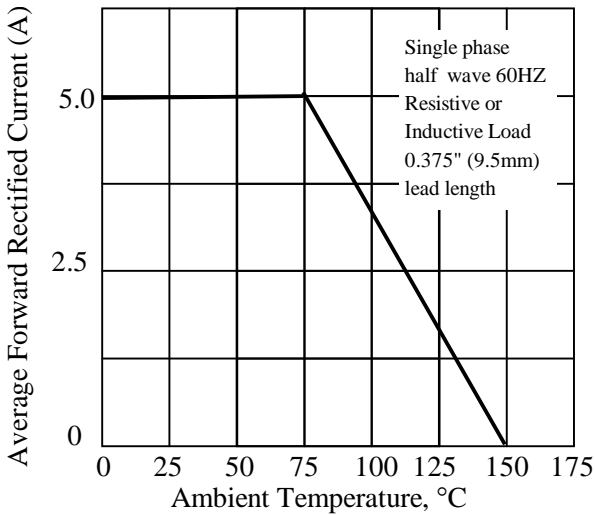


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

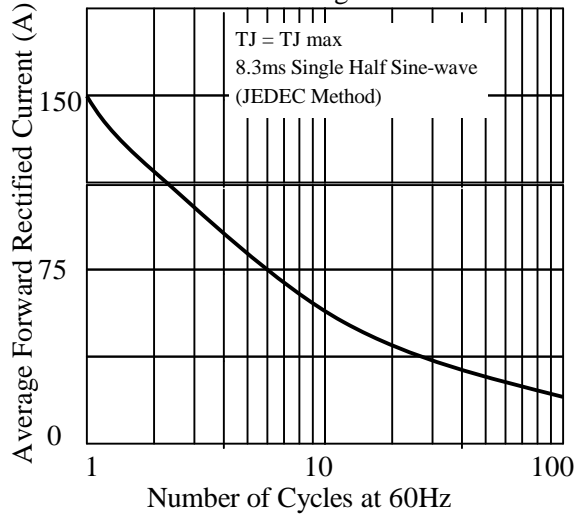


Fig. 3 - Typical Instantaneous Forward Characteristics

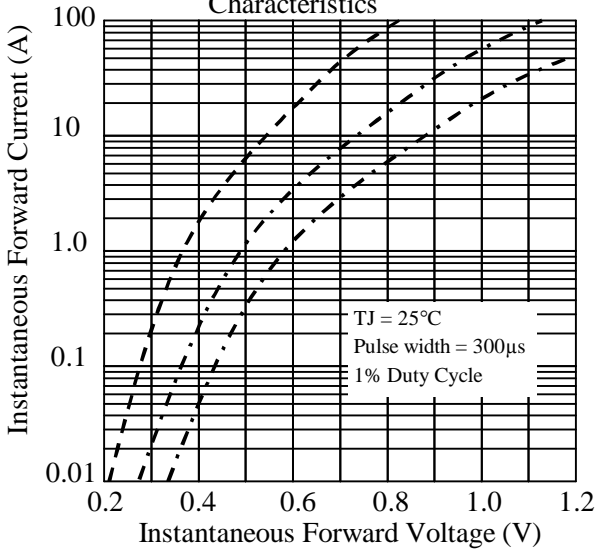


Fig. 4 - Typical Reverse Characteristics

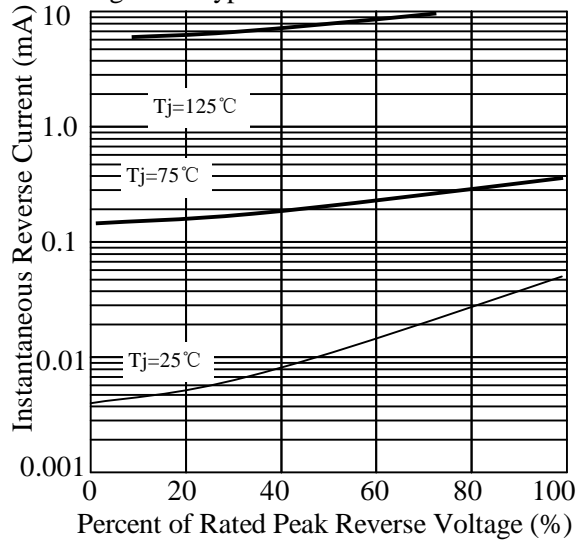


Fig. 5 - typical transient thermal impedance

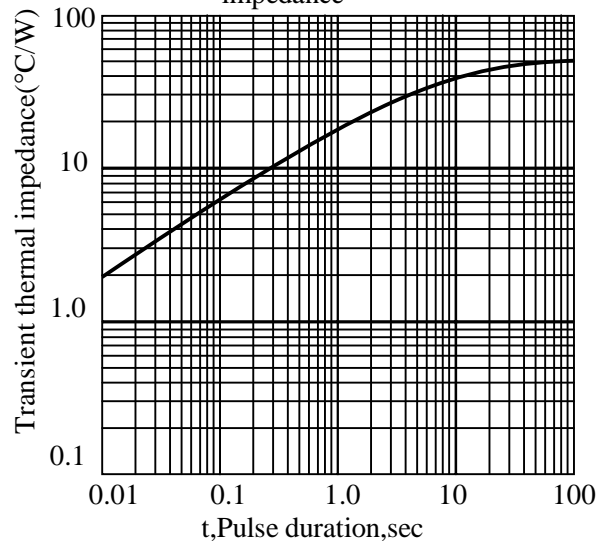
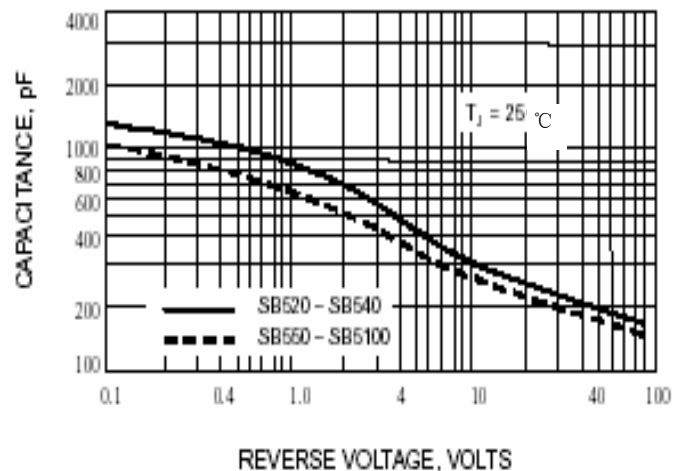
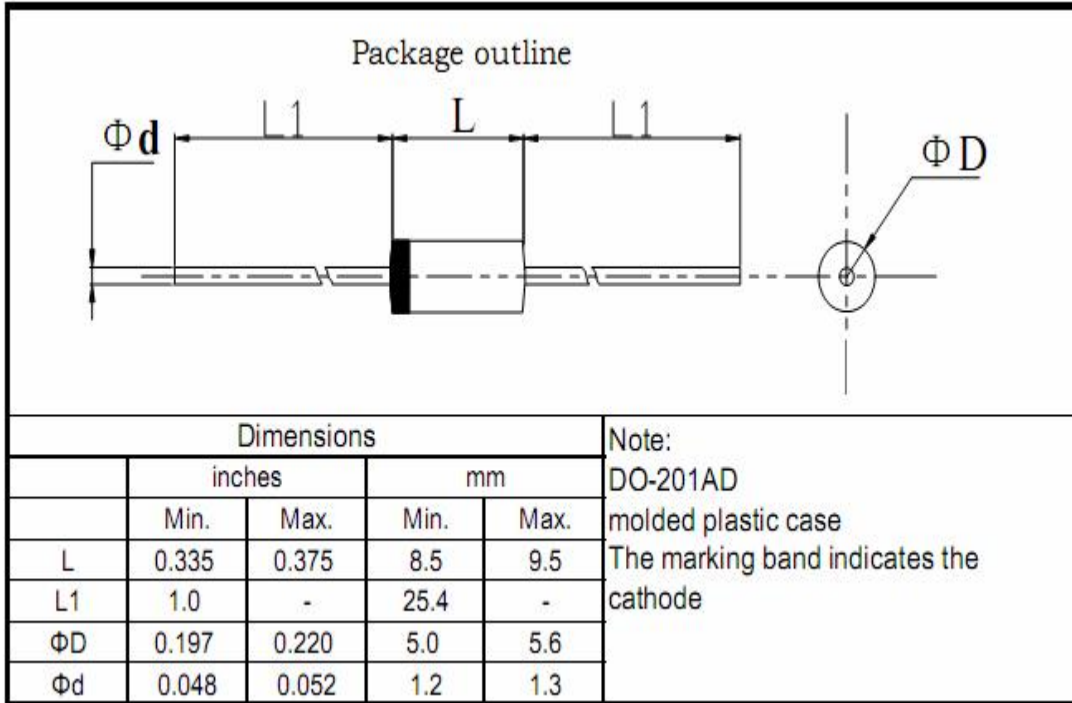


Fig. 6 - Typical Junction Capacitance



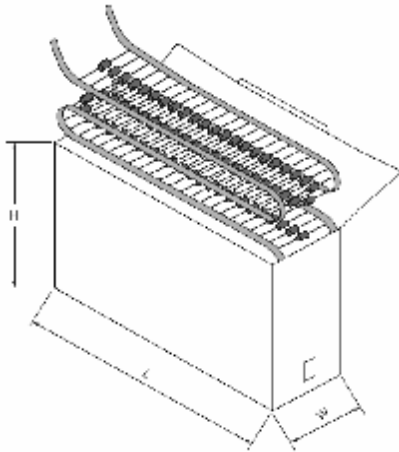
## SB520-E thru SB5100-E

### 3. dimension:



标题：  <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 1 页

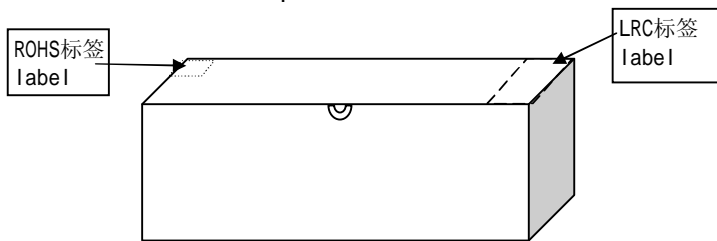
- 1 弹带盒装 ammo and box
- 1.1. 弹带盒规格 ammo spec.



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: <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.

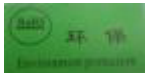
1.4.1 LRC标签 LRC label

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

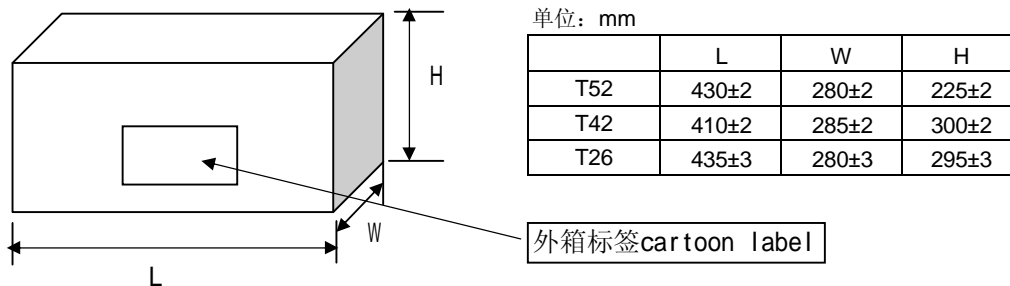
型号 TYPE \*\*\*\*\* ← LRC产品型号 type

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

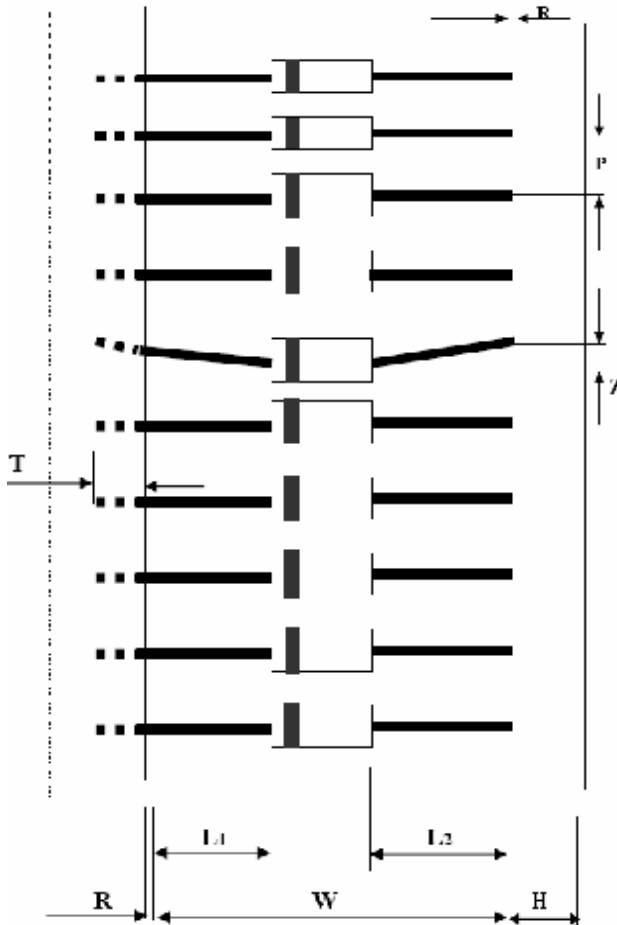


3 按以上包装方式, 编带数量和外包装箱产品数量: typing and carton spec.

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

标题： <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 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#
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**

## SB520-E thru SB5100-E

### 4. Update Record

版次	更新记录	更新作者	更新日期
1	第一版	周杰	2010-6-11
2	调整存储温度;	周杰	2012.07.31