

SZBF ***A Series

GLASS PASSIVATED JUNCTION Zener voltage regulator diodes 2.0 Watt Steady State

Feature

- * 2.0 W SMB-FL
- * Zener voltage regulator diodes
- * Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- * We declare that the material of product compliance with RoHS requirements.
- * Guarding for over voltage protection
- * High temperature soldering guaranteed:
260°C/10 seconds at terminals
- * IEC61000-4-2 ESD Air Contact $\geq \pm 15KV$
- * MSL: 1

Mechanical Data

Case: JEDEC SMB-FL molded plastic

Terminals: Plated terminals, solderable per MIL-STD-750, Method 2026

Polarity: Color band denoted cathode except Bipolar

Mounting Position: Any

Weight: Approximated 0.066 gram

1. Electrical Characteristic

Ratings at 25°C ambient temperature unless otherwise specified.

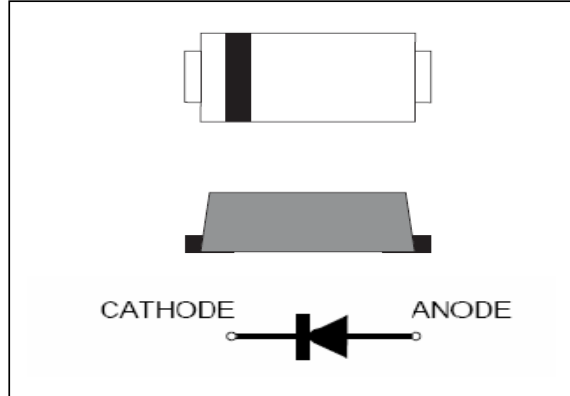
Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

| RATING | SYMBOL | VALUE | UNITS |
|-----------------------------------------------------------------------------------------------------------|----------------|-------------|-------|
| Steady State Power Dissipation at $T_L=75^\circ C$ (Note1) | $P_{M(AV)}$ | 2.0 | Watts |
| Z-current | I_Z | P_V/V_Z | mA |
| Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load(JECED Method) (Note 2) | I_{FSM} | 60 | Amps |
| Operating and Storage Temperature Range | T_J, T_{STG} | -50 to +150 | °C |

NOTES:

1. 8.0mm² (.013mm thick) land areas
2. 8.3ms single half sine-wave, duty cycle= 4 pulses per minutes maximum.



We declare that the material of product is Halogen free (green epoxy compound)

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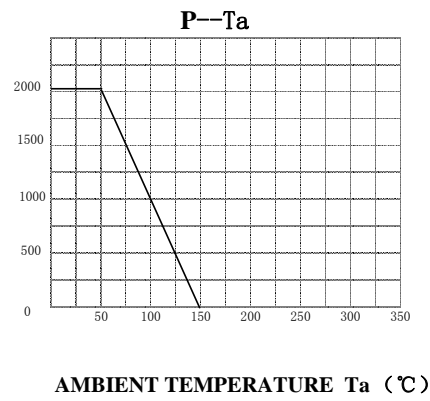
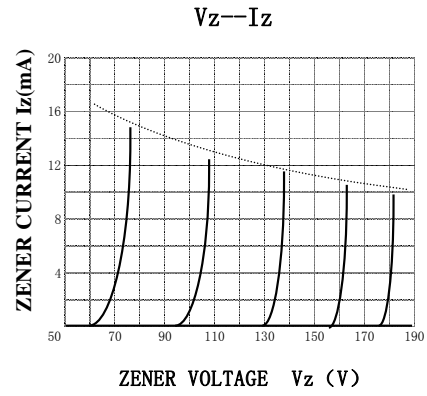
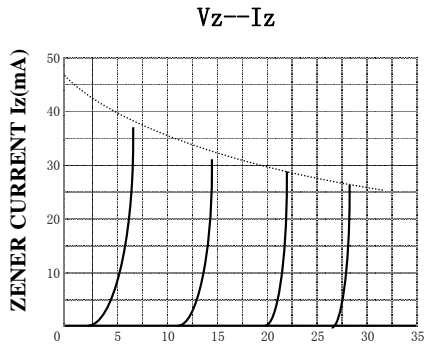
2.Product Characteristic

Vz tolerance : ±5%; Ta=25°C Vmax =1.2V @ IF = 200mA P=2 W; Tested with pulse tp=40ms

| Type | Device marking code | Zener | Current | A and B Suffix only | | | Leakage Current | | Maximum Regulator Current ²⁾ | |
|----------|---------------------|---------------------------------|-----------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------|----------------|-----------------------------------------|-----------------|
| | | Voltage | I _{zt} | Z _{zt} @ I _{zt} | Z _{zk} @ I _{zk} | Z _{zk} @ I _{zk} | I _R | V _R | | I _{ZM} |
| | | V _z @I _{zt} | | | | | | | | |
| | | Volts | mA | Ohms | Ohms | m A | uA Max | Volts | | mA |
| SZBF5.1A | SZBF5.1A | 5.1 | 98 | 7 | 550 | 1 | 100 | 1.0 | 178 | |
| SZBF5.6A | SZBF5.6A | 5.6 | 90 | 5 | 600 | | | 2.0 | 164 | |
| SZBF6.2A | SZBF6.2A | 6.2 | 82 | 2 | 700 | | | 3.0 | 146 | |
| SZBF6.8A | SZBF6.8A | 6.8 | 74 | 4 | 1300 | | | 4 | 294 | |
| SZBF7.5A | SZBF7.5A | 7.5 | 67 | 4.5 | 1300 | | | 0.5 | 5 | 267 |
| SZBF8.2A | SZBF8.2A | 8.2 | 61 | 5.5 | 1300 | | | 0.5 | 6 | 244 |
| SZBF9.1A | SZBF9.1A | 9.1 | 55 | 6 | 1300 | | | 0.5 | 7 | 220 |
| SZBF10A | SZBF10A | 10 | 50 | 7 | 1300 | 0.25 | 20 | 7.6 | 200 | |
| SZBF11A | SZBF11A | 11 | 45 | 8 | 1300 | | | 8.4 | 182 | |
| SZBF12A | SZBF12A | 12 | 42 | 9 | 1300 | | | 9.1 | 167 | |
| SZBF13A | SZBF13A | 13 | 38 | 10 | 1300 | | | 9.9 | 154 | |
| SZBF15A | SZBF15A | 15 | 33 | 14 | 1300 | | | 11.4 | 133 | |
| SZBF16A | SZBF16A | 16 | 31 | 16 | 1300 | | | 12.2 | 125 | |
| SZBF18A | SZBF18A | 18 | 28 | 20 | 1300 | | | 13.7 | 111 | |
| SZBF20A | SZBF20A | 20 | 25 | 22 | 1300 | | | 15.2 | 100 | |
| SZBF22A | SZBF22A | 22 | 23 | 23 | 1300 | | | 16.7 | 91 | |
| SZBF24A | SZBF24A | 24 | 21 | 25 | 1300 | | | 18.2 | 83 | |
| SZBF27A | SZBF27A | 27 | 19 | 35 | 1300 | | | 20.6 | 74 | |
| SZBF30A | SZBF30A | 30 | 17 | 40 | 1500 | | | 22.8 | 67 | |
| SZBF33A | SZBF33A | 33 | 15 | 45 | 1500 | | | 25.1 | 61 | |
| SZBF36A | SZBF36A | 36 | 14 | 50 | 1500 | | | 27.4 | 56 | |
| SZBF39A | SZBF39A | 39 | 13 | 60 | 1500 | | | 29.7 | 51 | |
| SZBF43A | SZBF43A | 43 | 12 | 70 | 2500 | | | 32.7 | 47 | |
| SZBF47A | SZBF47A | 47 | 11 | 80 | 2500 | | | 35.8 | 43 | |
| SZBF51A | SZBF51A | 51 | 10 | 95 | 2500 | 38.8 | 39 | | | |
| SZBF56A | SZBF56A | 56 | 9 | 110 | 2500 | 42.6 | 36 | | | |
| SZBF62A | SZBF62A | 62 | 8 | 125 | 2500 | 47.1 | 32 | | | |
| SZBF68A | SZBF68A | 68 | 7 | 150 | 2500 | 51.7 | 29 | | | |
| SZBF75A | SZBF75A | 75 | 7 | 175 | 2500 | 56 | 27 | | | |
| SZBF82A | SZBF82A | 82 | 6 | 200 | 3000 | 62.2 | 24 | | | |
| SZBF91A | SZBF91A | 91 | 5 | 250 | 3000 | 69.2 | 22 | | | |
| SZBF100A | SZBF100A | 100 | 5 | 350 | 3000 | 76 | 20 | | | |
| SZBF110A | SZBF110A | 110 | 5 | 550 | 5000 | 83 | 18 | | | |
| SZBF120A | SZBF120A | 120 | 4 | 750 | 5500 | 90 | 17 | | | |
| SZBF130A | SZBF130A | 130 | 4 | 900 | 6000 | 98 | 15 | | | |
| SZBF150A | SZBF150A | 150 | 3 | 1200 | 6500 | 113 | 13 | | | |
| SZBF160A | SZBF160A | 160 | 3 | 1350 | 7000 | 120 | 13 | | | |
| SZBF180A | SZBF180A | 180 | 3 | 1650 | 8500 | 135 | 11 | | | |
| SZBF200A | SZBF200A | 200 | 3 | 1950 | 10000 | 150 | 10 | | | |

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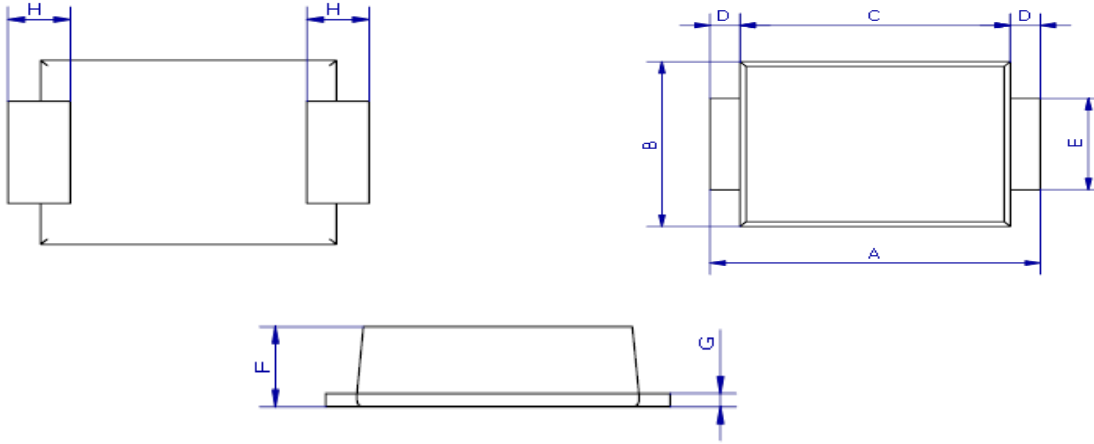
3.Characteristic Curves



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3. dimension:

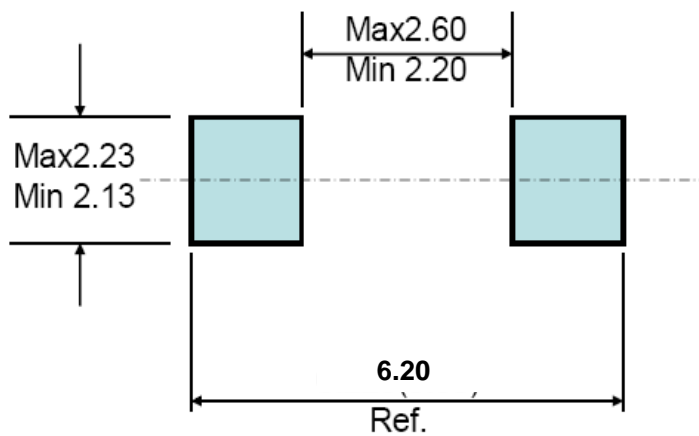
SMB-FL



| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|------|----------|---------|
| | MIN | MAX | MIN | MAX |
| A | 5.3 | 5.7 | 0.209 | 0.224 |
| B | 3.4 | 3.8 | 0.134 | 0.150 |
| C | 4.3 | 4.7 | 0.169 | 0.185 |
| D | 0.45Typ | | 0.018Typ | |
| E | 1.9 | 2.1 | 0.0748 | 0.08268 |
| F | 1.05 | 1.40 | 0.04134 | 0.05512 |
| G | 0.2 | 0.3 | 0.00591 | 0.00984 |
| H | 0.95Typ | | 0.037Typ | |

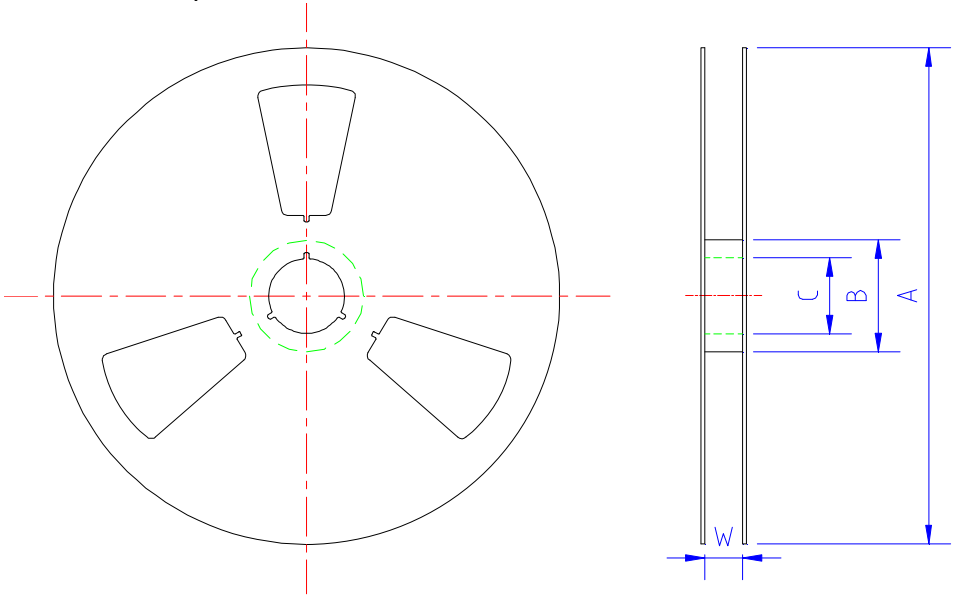
Mounting Pad Layout

--- SMB-FL



5.1 、 SMD Packing Reel Spec & Packing Quantity

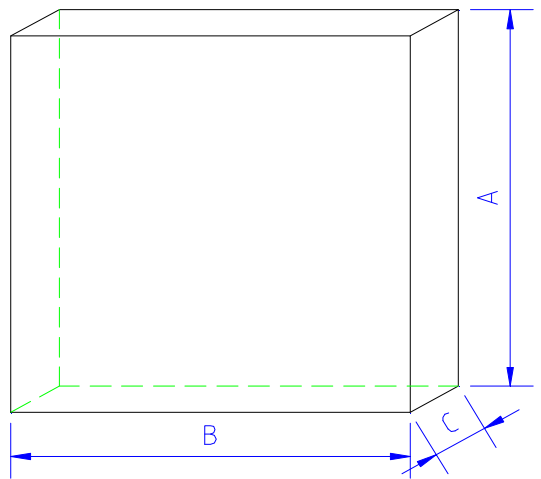
5.1.1 Reel Packing
A. Reel Spec



unit: mm

| SPEC | A | B | C | W | Quantity/Reel |
|------------------|-----------|----------|----------|----------|---------------|
| SMA-FL 7" reel | 177.0±2.0 | 54.0±0.5 | 13.0±0.5 | 13.2±0.2 | 3K |
| TO277 13" reel | 330.0±2.0 | 75.0±0.5 | 13.0±0.5 | 13.2±0.2 | 5K |
| SOD123FL 7" reel | 177.0±2.0 | 50.0±0.5 | 13.0±0.5 | 9.4±1.5 | 3K |
| SOD323HE 7" reel | 177.0±2.0 | 50.0±0.5 | 13.0±0.5 | 9.4±1.5 | 3K |
| SMB-FL 13" reel | 330.0±2.0 | 75.0±0.5 | 13.0±0.5 | 13.2±0.2 | 5K |

B. 13" reel packing box



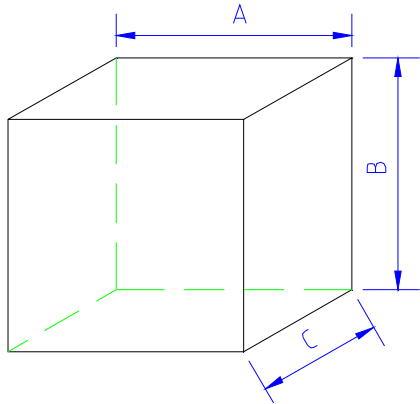
unit: mm

| size | A | B | C |
|------|---------|---------|--------|
| | 335±5.0 | 335±2.0 | 40±1.0 |

as per above packing

| Spec | Q' ty/Box |
|-----------------|-----------|
| TO277 13" reel | 10K |
| SMB-FL 13" reel | 10K |

C. 7" reel packing box



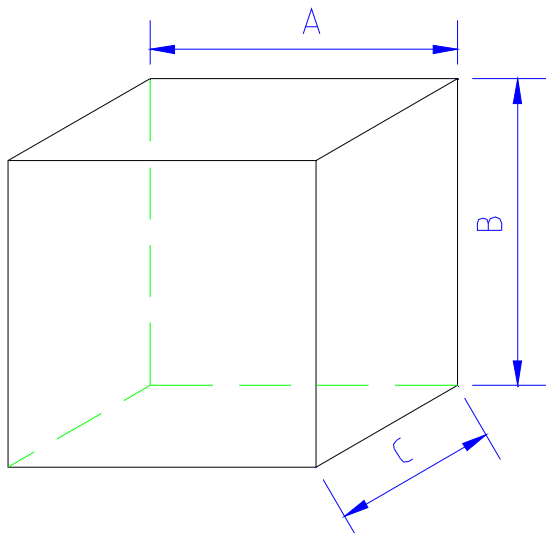
unit: mm

| | A | B | C |
|--------------------------------|---------|---------|---------|
| SMA-FL SOD123FL SOD323HE | 186±2.0 | 139±2.0 | 185±2.0 |

as per above packing

| | Q' ty/Box |
|----------|-----------|
| SMA-FL | 30K |
| SOD123FL | 30K |
| SOD323HE | 30K |

D. reel packing carton



unit: mm

| | A | B | C |
|------|---------|---------|---------|
| size | 350±2.0 | 340±2.0 | 350±2.0 |

as per above packing

| Spec | Q' ty/Carton |
|-----------------|--------------|
| TO277 13" reel | 80K |
| SMB-FL 13" reel | 80K |

unit: mm

| | A | B | C |
|--------------------------------|---------|---------|---------|
| SMA-FL SOD123FL SOD323HE | 455±2.0 | 400±2.0 | 410±2.0 |

as per above packing

| Spec | Q' ty/Carton |
|-------------------|--------------|
| SMA-FL 7" reel | 360K |
| SOD123-FL 7" reel | 360K |
| SOD323HE 7" reel | 360K |

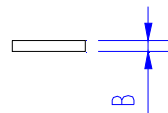
5.1.2 Tape Spec

A. Cover Tape

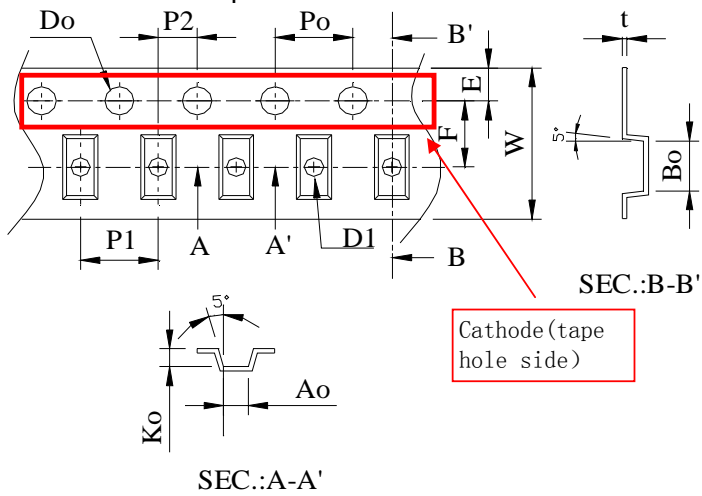


unit: mm

| | A | B |
|---------------------------|----------|-------------|
| SMA-FL SMB-FL TO277 | 9.5±0.10 | 0.062±0.007 |
| SOD123FL SOD323HE | 5.4±0.10 | |



B. Carrier Tape



| Item | SOD323HE | SOD123FL | SMA-FL | SMB-FL | TO277 |
|------|-----------|-----------|-----------|-----------|-----------|
| W | 8±0.3 | 8±0.3 | 12±0.3 | 12±0.3 | 12±0.3 |
| P1 | 4±0.1 | 4±0.1 | 4±0.1 | 8±0.1 | 8±0.1 |
| E | 1.75±0.1 | 1.75±0.1 | 1.75±0.1 | 1.75±0.1 | 1.75±0.1 |
| F | 3.5±0.05 | 3.5±0.05 | 5.5±0.05 | 5.5±0.05 | 5.5±0.05 |
| D0 | 1.55±0.05 | 1.55±0.05 | 1.55±0.05 | 1.55±0.05 | 1.55±0.05 |
| D1 | 1.1±0.1 | 1.1±0.1 | 1.5±0.1 | 1.55±0.05 | 1.5±0.1 |
| P0 | 4±0.1 | 4±0.1 | 4±0.1 | 4±0.1 | 4±0.1 |
| P2 | 2±0.05 | 2±0.05 | 2±0.05 | 2±0.05 | 2±0.05 |
| 10P0 | 40±0.2 | 40±0.2 | 40±0.2 | 40±0.2 | 40±0.2 |
| A0 | 1.45±0.1 | 1.95±0.1 | 2.83±0.1 | 3.8±0.1 | 4.3±0.1 |
| B0 | 2.75±0.1 | 3.95±0.1 | 4.75±0.1 | 5.75±0.1 | 6.8±0.1 |
| K0 | 0.80±0.1 | 1.30±0.1 | 1.42±0.1 | 1.4±0.1 | 1.35±0.1 |
| T | 0.25±0.05 | 0.25±0.05 | 0.25±0.05 | 0.25±0.05 | 0.25±0.05 |

Title:

Power Diode SMD Package Packing Spec

DOC NO.: WI-258

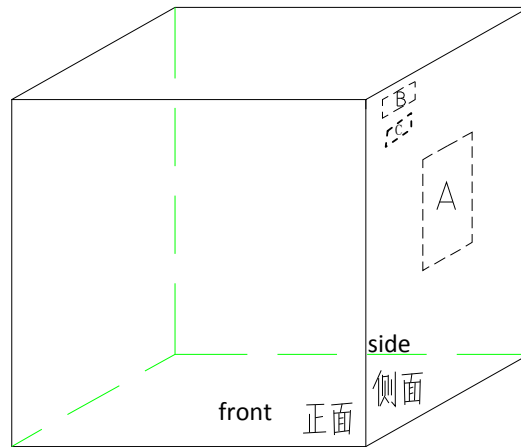
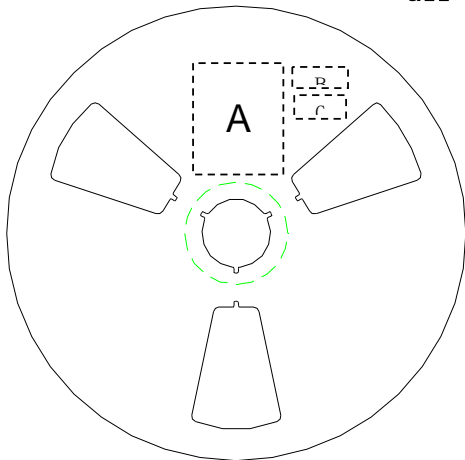
Version: 5 Modification: 0

Page: 5

5.2、SMD Power Diode General Packing Spec

A. 7" reel

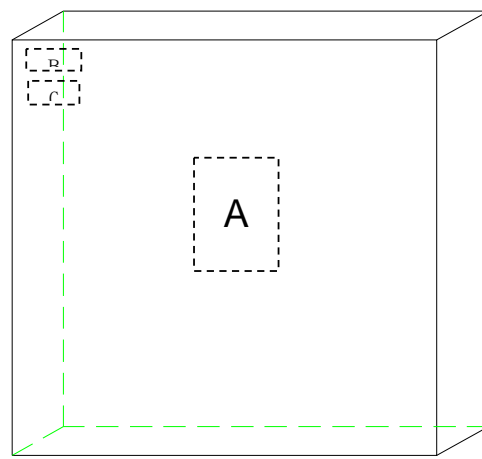
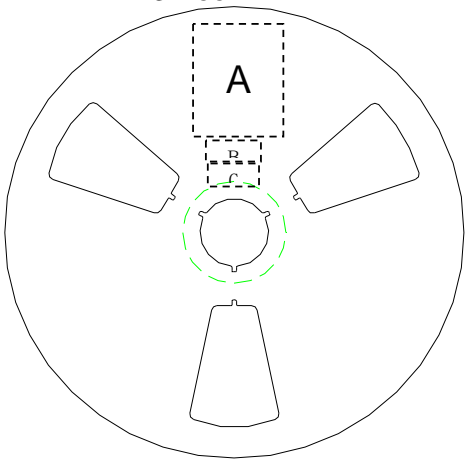
all labels will be at cathode side of reel ;



A:LRC label;

B:Environment Label C:Halide free label

B. 13" reel



A:LRC label;

B:Environment Labe C:Halide free label

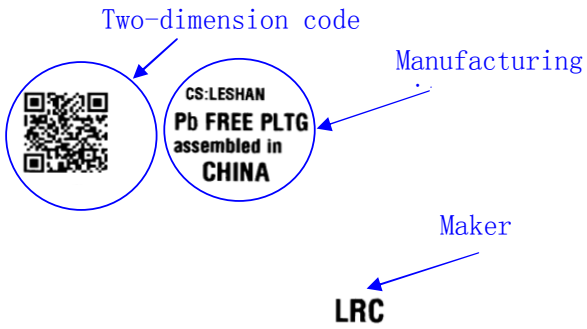
C. Tape lead: face anode side of the reel, upper side is the tape lead position. All labels are at cathode side of the reel.



| | |
|----------------------------------------------------|-------------------------------|
| 标题: Power Diode SMD Package Packing Spec | DOC NO.: WI-258 |
| | Version: 5 Modification: 0 |
| | Page: 6 |

C. Label Content :
LRC Label

P/N → (1P) LPN: **SM140A**
 Lot No. → (1T) LOT: **140106049X**
 Date code → (9D) DTE: **1403**
 Quantity → (Q) QTY: **10000**



lot: 140106049X: 140106---2014/1/6; 049----lot number:49; X: product code

Environment Label



Halide-free Label



SZBF ***A Series

7. Update Record

| 版次 | 更新记录 | 更新作者 | 更新日期 |
|----|-----------|------|------------|
| 1 | 第一版 | 周杰 | 2014.05.23 |
| 2 | 增加5.1~6.2 | 周杰 | 2014.08.14 |

单击下面可查看定价，库存，交付和生命周期等信息

[>>LRC\(乐山无线电\)](#)