

SBR5100

Schottky Barrier Rectifiers

Reverse Voltage 100V Forward Current 5A

FEATURES

- * 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
- * Guardring for over voltage protection
- * High temperature soldering guaranteed:
260°C/10 seconds at terminals

Mechanical Data

Case: JEDEC TO-277A,
molded plastic over SKY body
Terminals: Plated leads, solderable per
MIL-STD-750, Method 2026

Mounting Position: Any

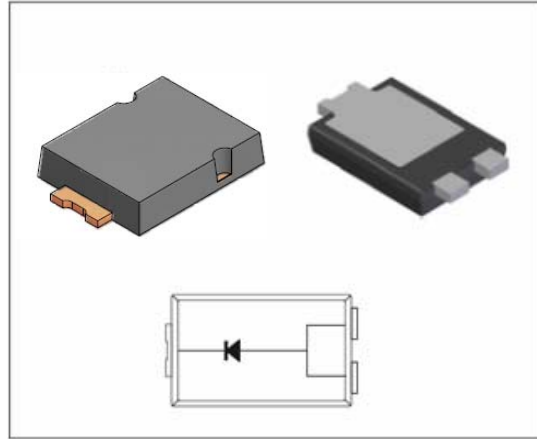
Weight: 0.108 g

Handling precaution:None

1.Electrical Characteristic

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

| Parameter Symbol | symbol | SBR5100 | Unit |
|--------------------------------------------------------------------------------------------------|---------------|-------------|--------------------|
| device marking code | | SBR5100 | |
| Maximum repetitive peak reverse voltage | V_{RRM} | 100 | V |
| Maximum RMS voltage | V_{RMS} | 70 | V |
| Maximum DC blocking voltage | V_{DC} | 100 | V |
| Maximum average forward rectified current at $T_c = 75^\circ\text{C}$ | $I_{F(AV)}$ | 5.0 | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I_{FSM} | 150 | A |
| Typical thermal resistance (Note 1) | R θ JC | 8 | $^\circ\text{C/W}$ |
| | R θ JL | 15 | |
| | R θ JA | 31 | |
| Typical thermal resistance (Note 3) | R θ JA | 135 | $^\circ\text{C/W}$ |
| Operating junction temperature range | T_J | -55 to +150 | $^\circ\text{C}$ |
| Storage temperature range | T_{STG} | -55 to +175 | $^\circ\text{C}$ |



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

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

| Parameter Symbol | symbol | SBR5100 | Unit |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------|------|
| Maximum instantaneous forward voltage at 5A at 25°C | V_F | 0.87 | V |
| Maximum DC reverse current $T_j = 25^\circ\text{C}$ at rated DC blocking voltage $T_j = 100^\circ\text{C}$ (note2) at rated DC blocking voltage $T_j = 125^\circ\text{C}$ (note2) | IR | 0.015 | mA |
| | | 10.0 | |
| | | 20 | |
| Typical junction capacitance at 4.0V, 1MHz | CJ | 500 | PF |

NOTES:

1. Polyimide PCB, 2oz. Copper. Cathode pad dimensions 18.8mm x 14.4mm. Anode pad dimensions 5.6mm x 14.4mm.
- 2.Short duration pulse test used to minimize self-heating sffect .
- 3.FR-4 PCB, 2oz.Copper.

SBR5100

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

Fig. 1 - Forward Current Derating

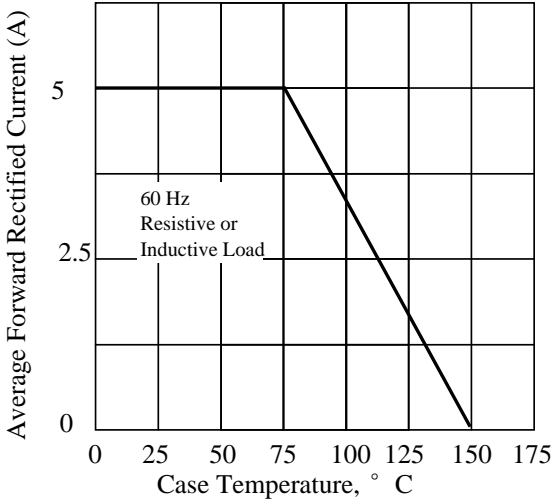


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

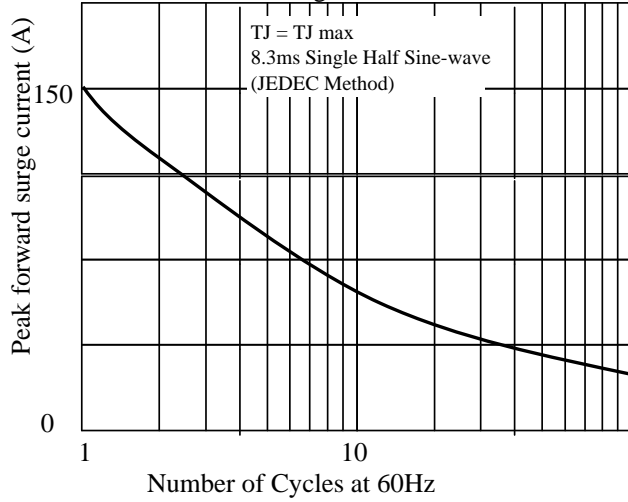


Fig 3. - Typical Instantaneous Forward Characteristics

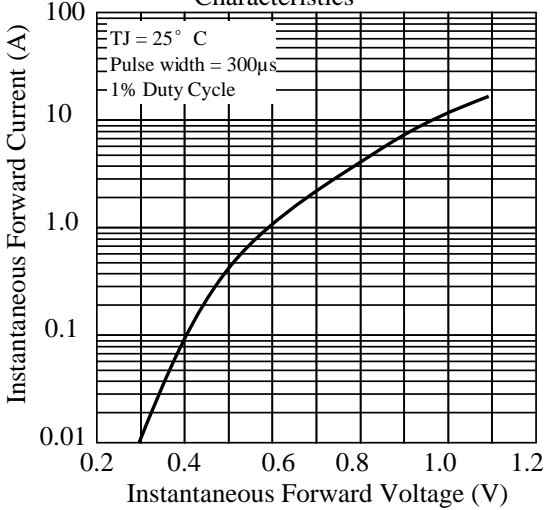


Fig 4. - Typical Reverse Characteristics

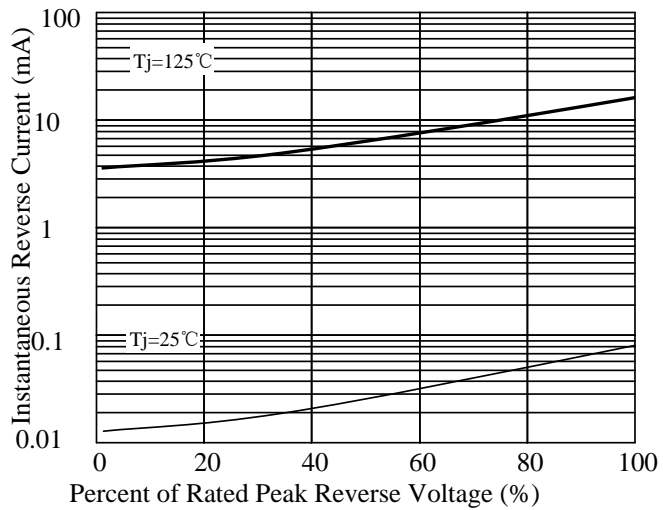


Fig 5. - typical transient thermal impedance(Note 3)

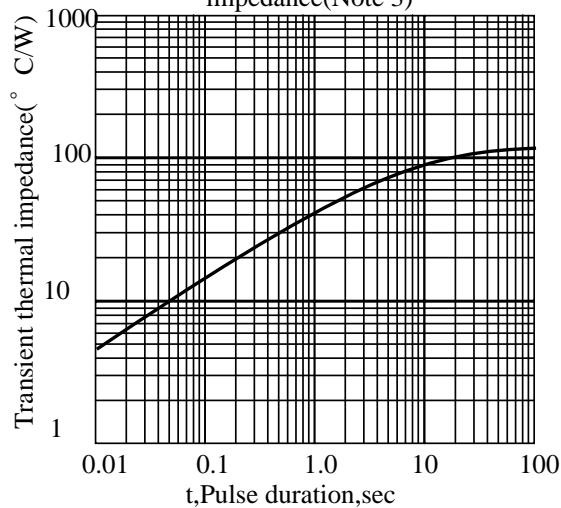
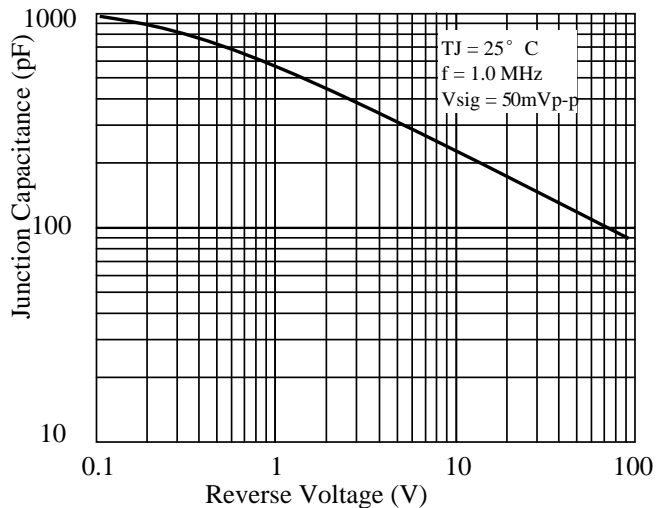


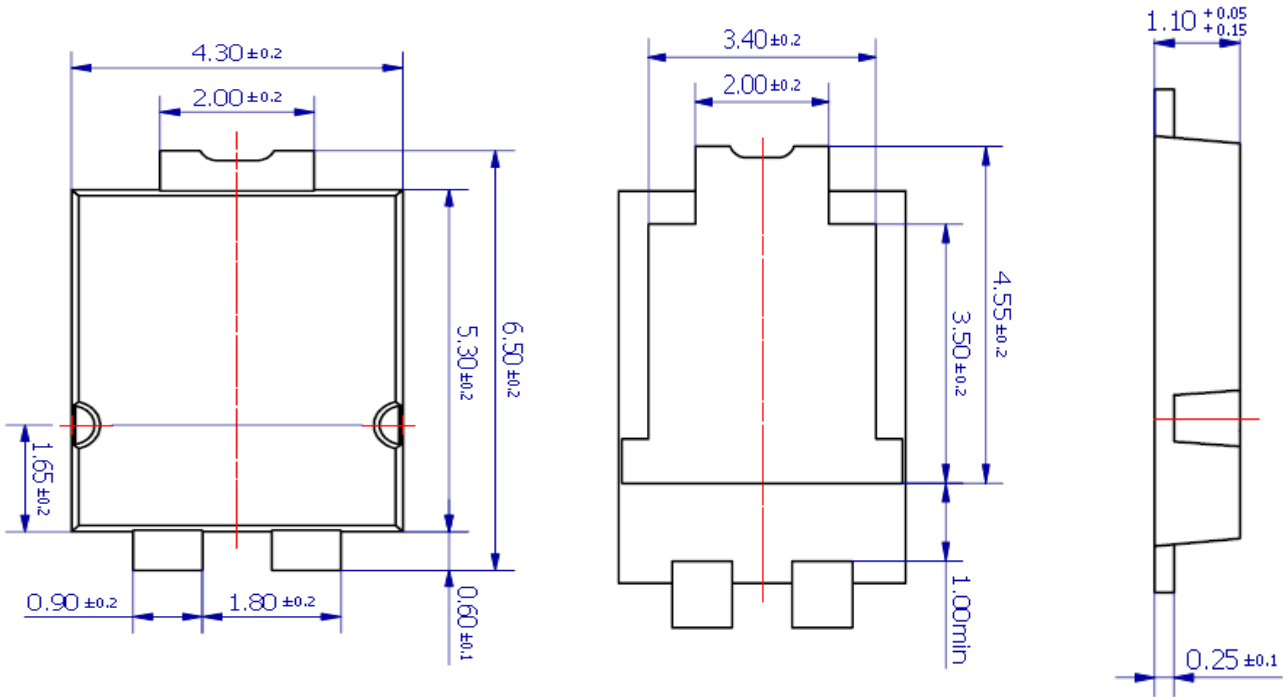
Fig 6. - Typical Junction Capacitance



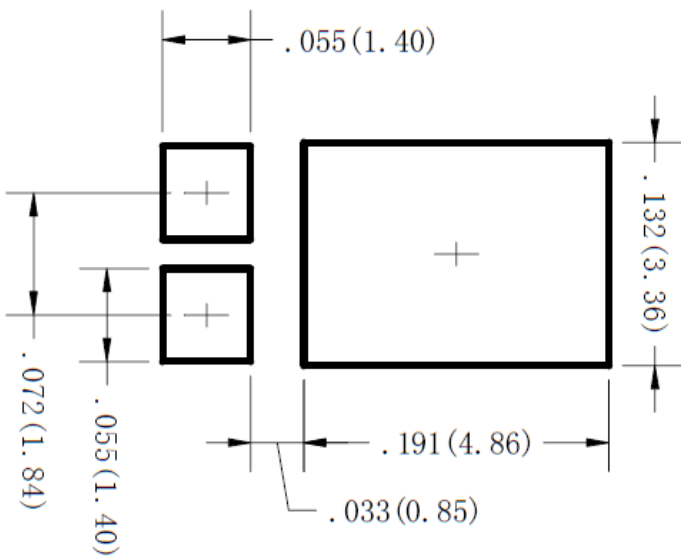
SBR5100

3. dimension:

TO-277A



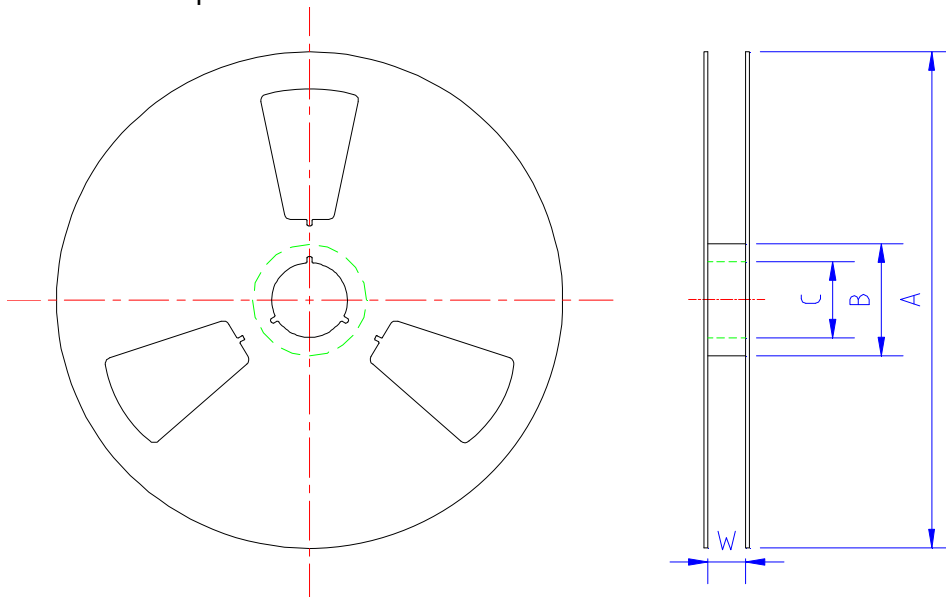
Mounting PAD layout



5.1 、 SMD Packing Reel Spec & Packing Quantity

5.1.1 Reel Packing

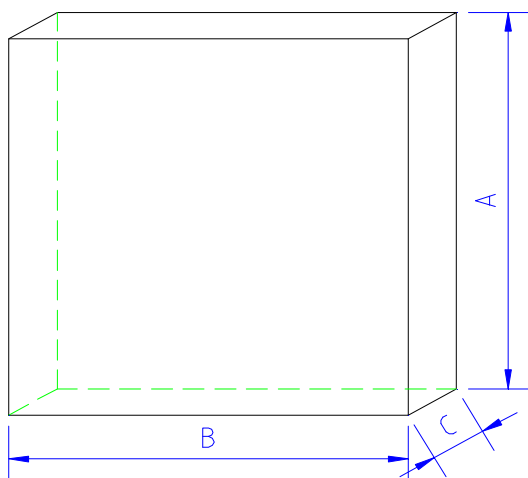
A. Reel Spec



unit: mm

| SPEC | A | B | C | W | Quantity/Reel |
|------------------|-----------|----------|----------|----------|---------------|
| SMA 7" reel | 177.0±2.0 | 54.0±0.5 | 13.0±0.5 | 13.2±0.2 | 2K |
| SMA13" reel | 330.0±2.0 | 75.0±0.5 | 13.0±0.5 | 13.2±0.2 | 5K |
| SMA-FL13" reel | 330.0±2.0 | 75.0±0.5 | 13.0±0.5 | 13.2±0.2 | 5K |
| TO277 13" reel | 330.0±2.0 | 75.0±0.5 | 13.0±0.5 | 13.2±0.2 | 5K |
| SMB13" reel | 330.0±2.0 | 75.0±0.5 | 13.0±0.5 | 13.5±0.5 | 3K |
| SMC13" reel | 330.0±2.0 | 75.0±0.5 | 13.0±0.5 | 17.0±0.5 | 3K |
| 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 |
|-----------------|-----------|
| SMA13" reel | 10K |
| SMB13" reel | 6K |
| SMC13" reel | 6K |
| TO277 13" reel | 10K |
| SMB-FL 13" reel | 10K |

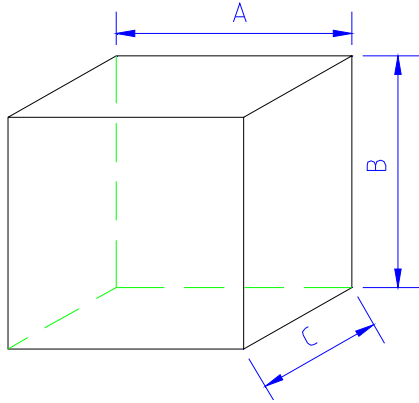
Title:
Power Diode SMD Package Packing Spec

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C. 7" reel packing box



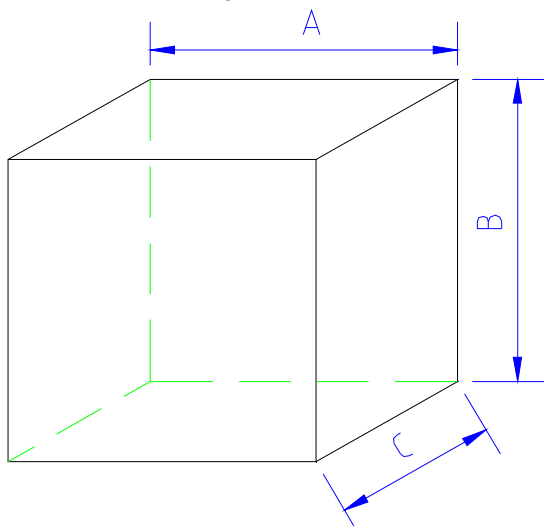
unit: mm

| | A | B | C |
|----------------------|---------|---------|---------|
| SMA/SMA-FL | 188±2.0 | 188±2.0 | 138±2.0 |
| SOD123FL SOD323HE | 186±2.0 | 139±2.0 | 185±2.0 |

as per above packing

| | Q' ty/Box |
|------------|-----------|
| SMA/SMA-FL | 16K |
| 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 |
|--------------------|--------------|
| SMA/SMA-FL 7" reel | 80K |
| SMA13"reel | 80K |
| SMB13"reel | 48K |
| SMC13"reel | 36K |
| SMA-FL13"reel | 80K |
| TO277 13" reel | 80K |
| SMB-FL 13" reel | 80K |

unit: mm

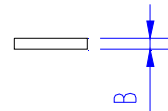
| | A | B | C |
|----------------------|---------|---------|---------|
| SOD123FL SOD323HE | 455±2.0 | 400±2.0 | 410±2.0 |

as per above packing

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

5.1.2 Tape Spec

A. Cover Tape

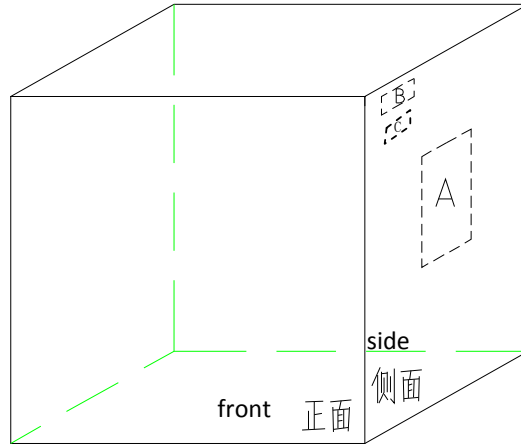
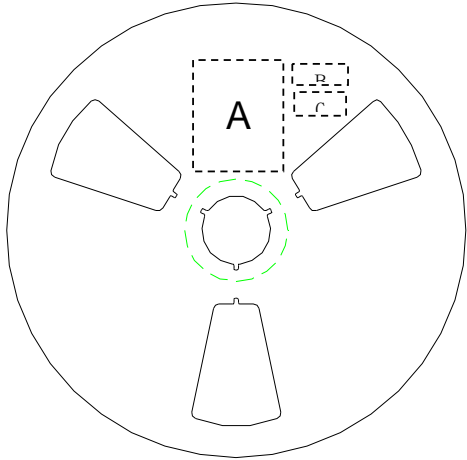


unit: mm

| | A | B |
|--------------------------------------------|------------|-------------|
| SMA /SMA-FL SMB-FL /SMB /TO277 | 9.5±0.10 | 0.062±0.007 |
| SMC | 13.30±0.10 | |
| SOD123FL SOD323HE | 5.4±0.10 | |

5.2、SMD Power Diode General Packing Spec

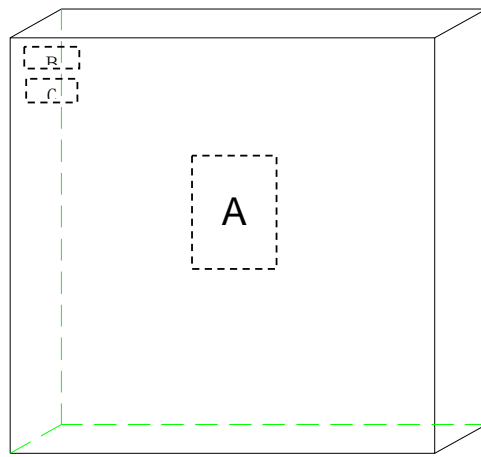
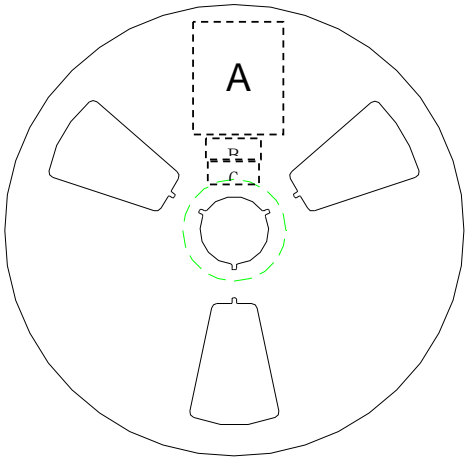
A. 7" reel all labels will be at cathode side of reel ;



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

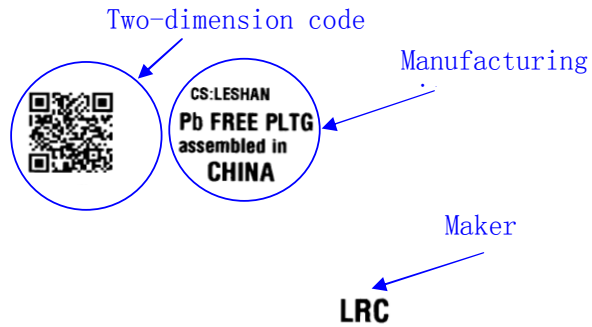
DOC NO.: WI-258

Version: 5 Modification: 0

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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



SBR5100

4. Update Record

| 版次 | 更新记录 | 更新作者 | 更新日期 |
|----|----------------|------|--------------|
| 1 | 第一版 | 周杰 | 2013. 12. 13 |
| 2 | 更新产品尺寸为T0-277A | 周杰 | 2014-1-17 |

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[NRVB130LSFT1G](#) [CRS08TE85LQM](#) [PMAD1108-LF](#) [B120Q-13-F](#) [1N5819T-G](#) [B0530WSQ-7-F](#)