

LUMA105 thru LUMA160

Glass Passivated Junction Ultra Fast Rectifiers Reverse Voltage 50 to 600V Forward Current 1.0A

FEATURES

- * Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- * High temperature metallurgically bonded construction
- * Glass passivated chip
- * Capable of meeting environmental standards of MIL-S-19500
- * For use in high frequency rectifier circuits
- * Fast switching for high efficiency
- * High temperature soldering guaranteed: 260°C/10 seconds
- * 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension

Mechanical Data

Case: JEDEC DO-214AC, molded plastic body

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

Polarity: Color band denotes cathode end

Mounting Position: Any

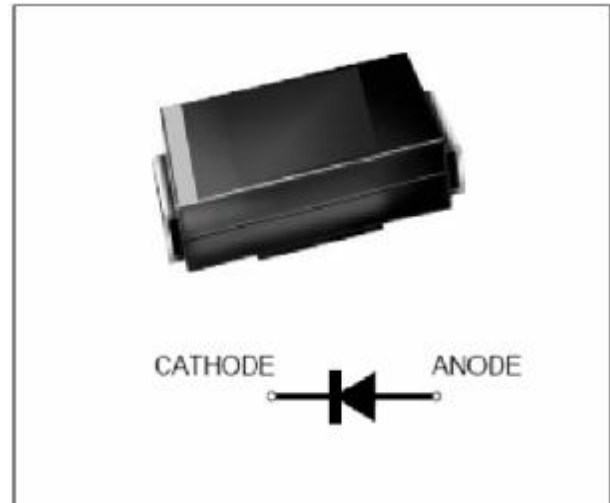
Weight: 0.0026 oz., 0.075 g

Handling precaution: None

Electrical Characteristic

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

| Parameter Symbol | symbol | LUMA 105 | LUMA 110 | LUMA 115 | LUMA 120 | LUMA 140 | LUMA 150 | LUMA 160 | Unit |
|--|----------------|-------------|----------|----------|----------|----------|----------|----------|--------------------|
| device marking code | | UM05 | UM10 | UM15 | UM20 | UM40 | UM50 | UM60 | |
| Maximum repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 150 | 200 | 400 | 500 | 600 | V |
| Maximum RSM voltage | V_{RSM} | 35 | 70 | 105 | 140 | 280 | 350 | 420 | V |
| Maximum DC blocking voltage | V_{DC} | 50 | 100 | 150 | 200 | 400 | 500 | 600 | V |
| Maximum average forward rectified current 0.375" (9.5mm) lead length at $T_A = 55^\circ\text{C}$ | $I_{F(AV)}$ | 1.0 | | | | | | | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I_{FSM} | 30 | | | | | | | A |
| Maximum full load reverse current, full cycle average, 0.375" (9.5mm) lead lengths at $T_A = 75^\circ\text{C}$ | $I_{R(AV)}$ | 100 | | | | | | | μA |
| Typical thermal resistance (Note 2) | $R\theta_{JA}$ | 72 | | | | | | | $^\circ\text{C/W}$ |
| Operating junction and storage temperature range | T_J, T_{STG} | -50 to +150 | | | | | | | $^\circ\text{C}$ |



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

| Parameter Symbol | symbol | LUMA 105 | LUMA 110 | LUMA 115 | LUMA 120 | LUMA 140 | LUMA 150 | LUMA 160 | Unit |
|---|----------|----------|----------|----------|----------|----------|----------|----------|---------------|
| Maximum Instantaneous Forward Voltage ($I_F = 1.0$ Amps, $T_J = 25^\circ\text{C}$) | V_F | 0.93 | | | 1.25 | | 1.5 | | V |
| Maximum full load reverse current, full cycle average, 0.375" (9.5mm) lead lengths (Rated dc Voltage, $T_J = 125^\circ\text{C}$) (Rated dc Voltage, $T_J = 25^\circ\text{C}$) | I_R | | | | 150 | | | | μA |
| | | | | | 5.0 | | | | |
| Typical reverse recovery time (Note 1) | T_{RR} | 35 | | | 50 | | | | ns |
| Typical junction capacitance at 4.0V, 1MHz | C_J | | | | 45 | | | | PF |

NOTES:

1. $I_F = 0.5\text{A}$, $I_R = 1.0\text{A}$, $I_{RR} = 0.25\text{A}$
2. 8.0mm² (.013mm thick) land areas

LUMA105 thru LUMA160

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

Fig. 1 - Forward Current Derating Curve

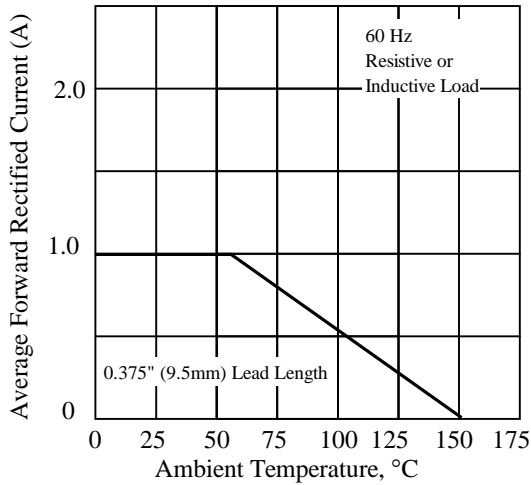


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

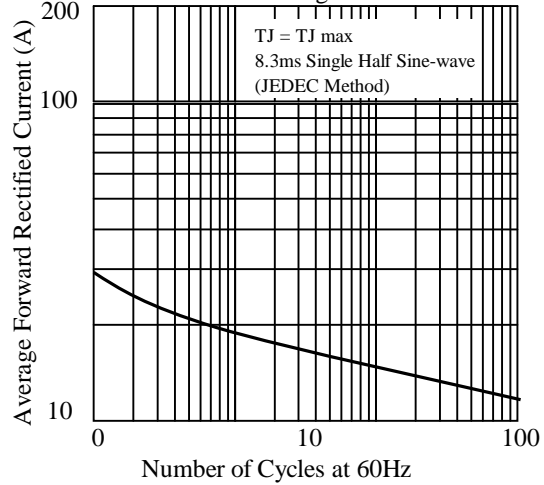


Fig 3. - Typical Instantaneous Forward Characteristics

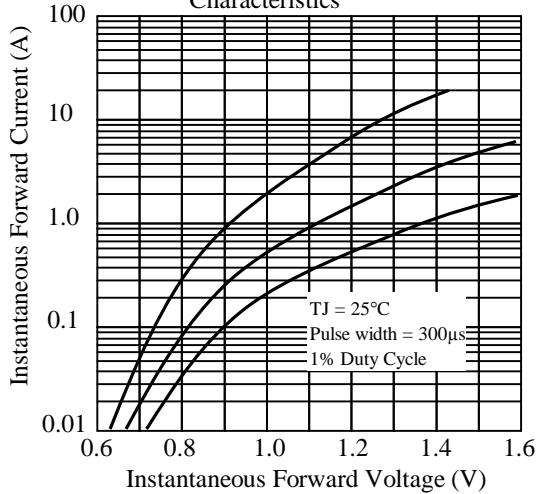


Fig 4. - Typical Reverse Characteristics

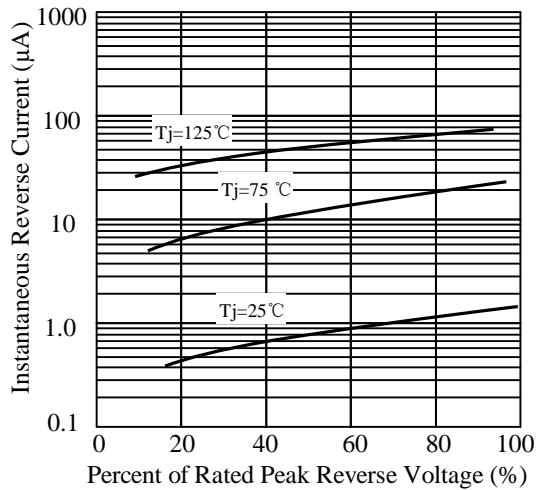


Fig 5. - typical transient thermal impedance

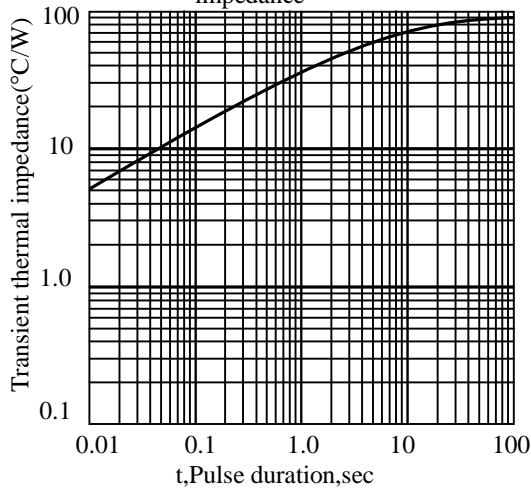
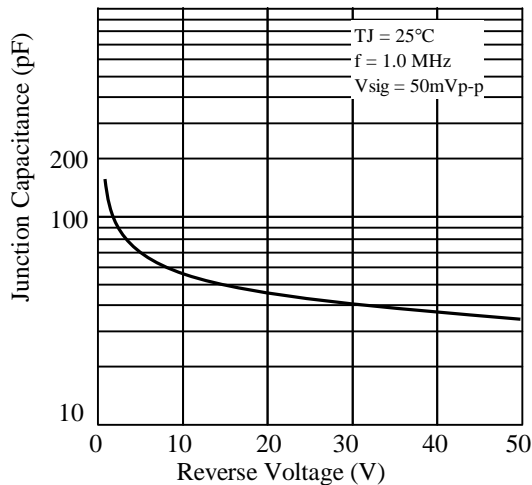
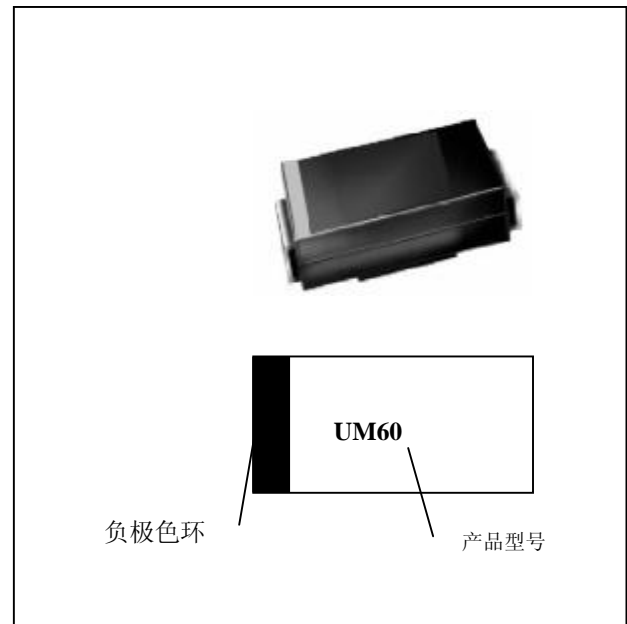
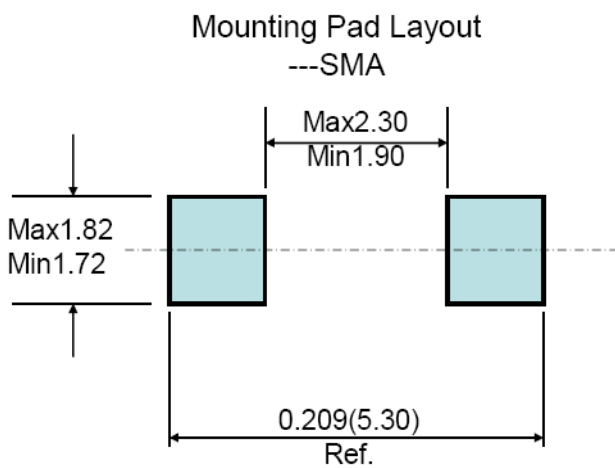
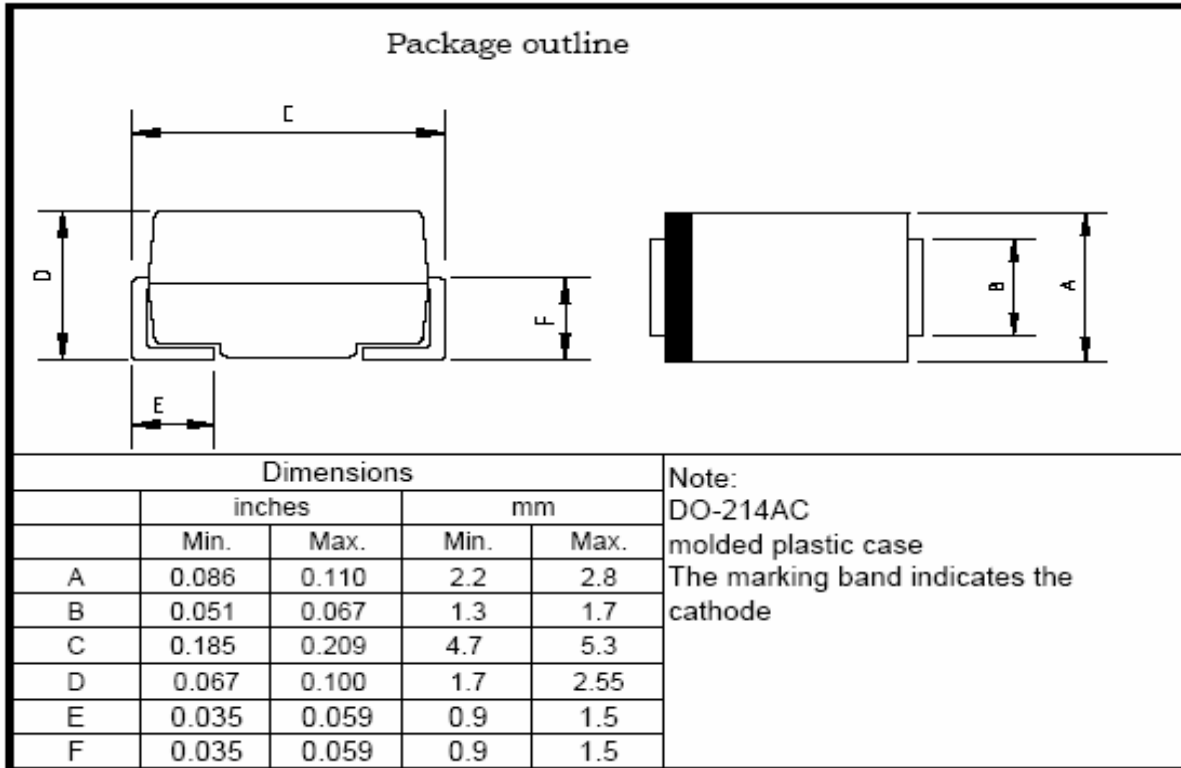


Fig 6. - Typical Junction Capacitance



LUMA105 thru LUMA160

3. dimension:



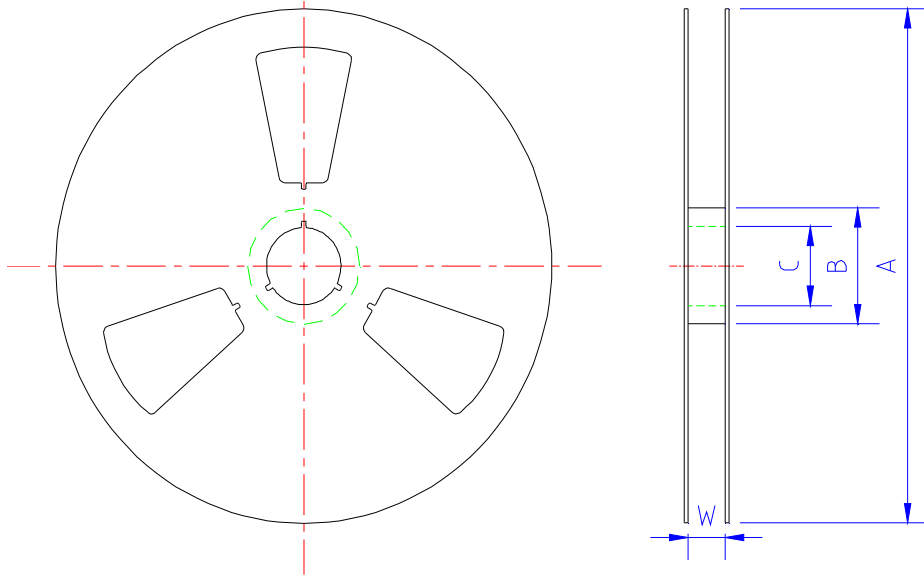
LUMA160: L---LRC; U---超快二极管; M---贴片产品; A---SMA封装; 1---IF=1A; 60---VB=600V;

| | |
|--|---------------|
| 标题Title: 塑封生产线SMD产品包装规范 Packaging specification of SMD | 文件编号: WI-258 |
| | 第 3 版 第 0 次修改 |
| | 第 2 页 |

SMD产品通用包装材料规格以及包装产品数量
General packaging materials spec. and quantity

1.1 卷装 reel

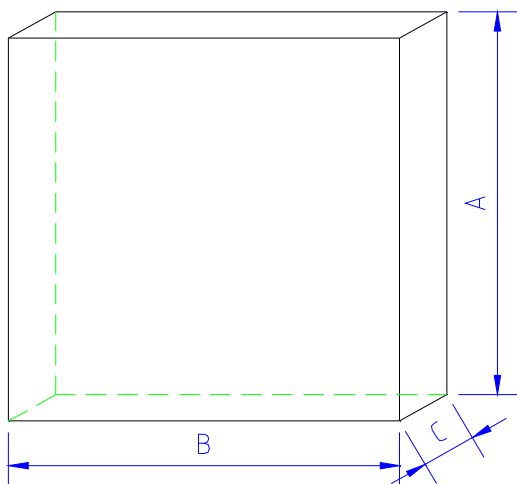
A. 卷盘规格 reel spec



单位: mm

| 规格 | A | B | C | W | 每卷数量 |
|----------|-----------|----------|----------|----------|------|
| SMA 7"卷盘 | 177.0±2.0 | 54.0±0.5 | 13.0±0.5 | 13.2±0.2 | 2K |
| SMA13"卷盘 | 330.0±2.0 | 75.0±0.5 | 13.0±0.5 | 13.2±0.2 | 5K |
| SMB13"卷盘 | 330.0±2.0 | 75.0±0.5 | 13.0±0.5 | 13.5±0.5 | 3K |
| SMC13"卷盘 | 330.0±2.0 | 75.0±0.5 | 13.0±0.5 | 17.0±0.5 | 3K |

B. 13"卷盘内盒 inner box



单位: mm

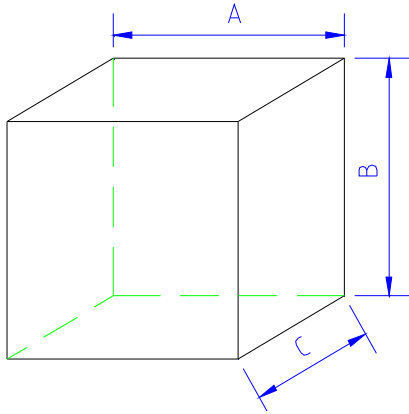
| | A | B | C |
|----|---------|---------|--------|
| 尺寸 | 335±5.0 | 335±2.0 | 40±1.0 |

按以上包装方式, 产品包装数量: quantity

| 规格 | 每盒数量 |
|----------|------|
| SMA13"卷盘 | 10K |
| SMB13"卷盘 | 6K |
| SMC13"卷盘 | 6K |

| | |
|--|--------------|
| 标题Title: 塑封生产线SMD产品包装规范 Packaging specification of SMD | 文件编号: WI-258 |
| | 文件编号: WI-258 |
| | 第 3 页 |

C. 7"卷盘盒 box



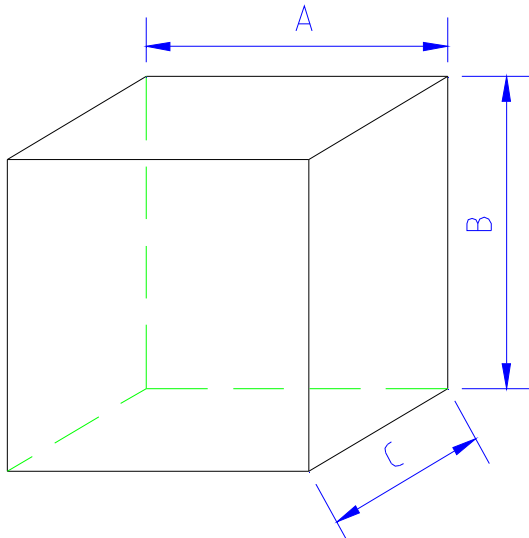
单位: mm

| | A | B | C |
|----|---------|---------|---------|
| 尺寸 | 188±2.0 | 188±2.0 | 138±2.0 |

按以上包装方式, 产品包装数量: quantity

| | 每盒数量 |
|------|------|
| 7"卷盘 | 16K |

D. 卷盘外箱 reel carton



单位: mm

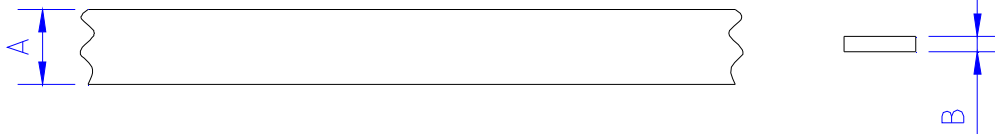
| | A | B | C |
|----|---------|---------|---------|
| 尺寸 | 350±2.0 | 340±2.0 | 350±2.0 |

按以上包装方式, 产品包装数量:

| 规格 | 每箱数量 |
|----------|------|
| SMA 7"卷盘 | 80K |
| SMA13"卷盘 | 80K |
| SMB13"卷盘 | 48K |
| SMC13"卷盘 | 36K |

1.2 编带规格 tape spec

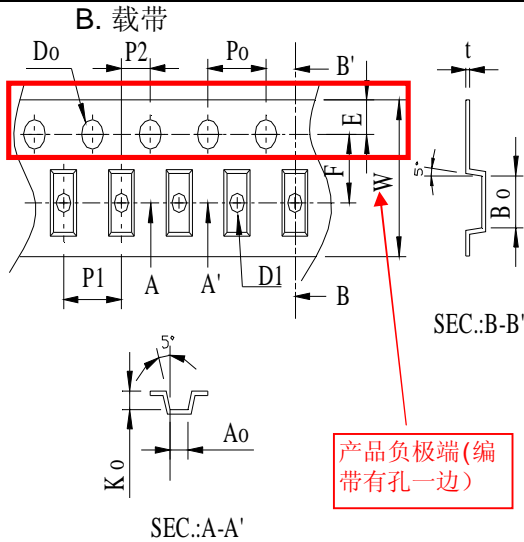
A. 盖带 Cover tape



单位: mm

| | A | B |
|-----|-----------|-------------|
| SMA | 9.30±0.10 | 0.068±0.005 |
| SMB | | |
| SMC | | |

| | |
|--|---------------|
| 标题Title: 塑封生产线SMD产品包装规范 Packaging specification of SMD | 文件编号: WI-258 |
| | 第 3 版 第 0 次修改 |
| | 第 4 页 |



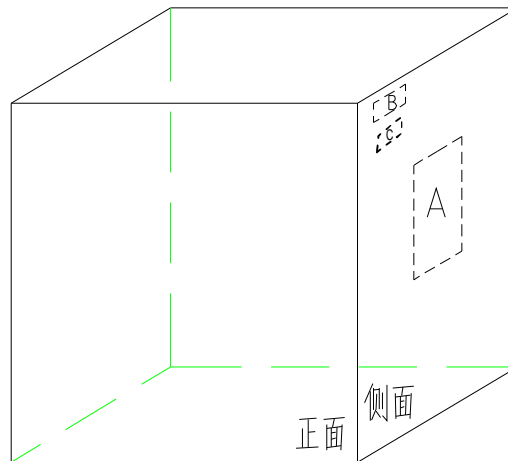
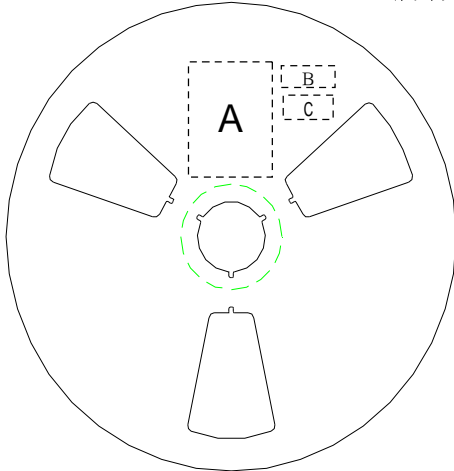
| 类型 | SMA | SMB | SMC |
|------|-----------|-----------|-----------|
| W | 12±0.3 | 12±0.3 | 16±0.3 |
| P1 | 4±0.1 | 8±0.1 | 8±0.1 |
| E | 1.75±0.1 | 1.75±0.1 | 1.75±0.1 |
| F | 5.5±0.05 | 5.5±0.05 | 7.5±0.05 |
| D0 | 1.55±0.05 | 1.55±0.05 | 1.55±0.05 |
| D1 | 1.5±0.1 | 1.55±0.05 | 1.55±0.05 |
| P0 | 4±0.1 | 4±0.1 | 4±0.1 |
| P2 | 2±0.05 | 2±0.05 | 2±0.05 |
| 10P0 | 40±0.2 | 40±0.2 | 40±0.2 |
| A0 | 2.79±0.1 | 3.8±0.1 | 6.05±0.1 |
| B0 | 5.33±0.1 | 5.4±0.1 | 8.31±0.1 |
| K0 | 2.36±0.1 | 2.45±0.1 | 2.54±0.1 |
| T | 0.25±0.05 | 0.25±0.05 | 0.25±0.05 |

2. SMD产品通用包装规范 General spec of SMD

5.2.1国内客户domestic

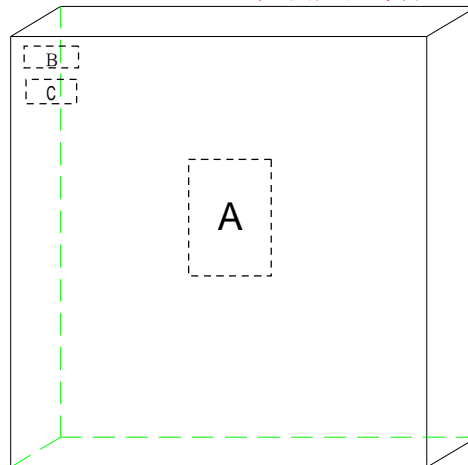
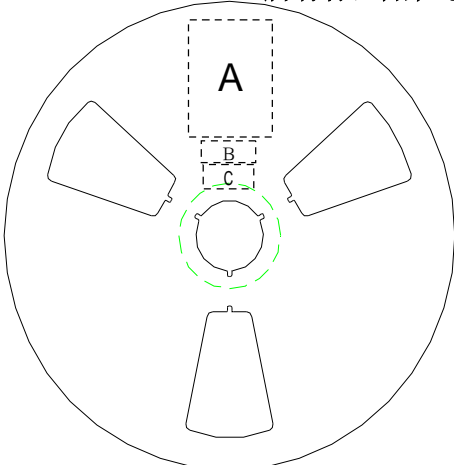
A. 7"卷盘reel

所有标签贴在卷盘负极 all the label on cathode side



A处:贴LRC标签; B处:贴ROHS标签 C处:贴无卤标签 HF label

B. 13"卷盘 所有标签贴在卷盘负极 all the label (无卤产品才贴HF only)




A处:贴LRC标签; B处:贴ROHS标签 C处:贴无卤标签 (无卤产品才贴HF only)

| | |
|--|---------------|
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| | 第 5 页 |

C. 标签要求label spec:

LRC标签label

| | | |
|-------------------|---|-----------------|
| 型号 TYPE | ***** | ← LRC产品型号 type |
| 数量(只) QTY(PCS) | ***** | ← 产品数量 quantity |
| 批号 LOT | ***** | ← 产品批号 LOT |
| 日期 DATE | ***** | ← 产品生产日期 date |
| 检验员: CHECKER |  | |

ROHS标签

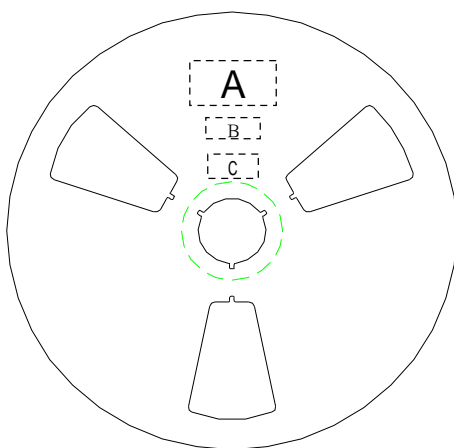


无卤标签 HF label

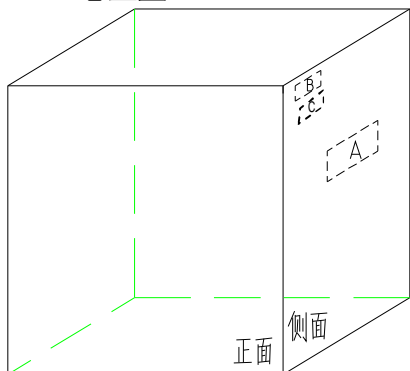


2.2 国外客户
overseas

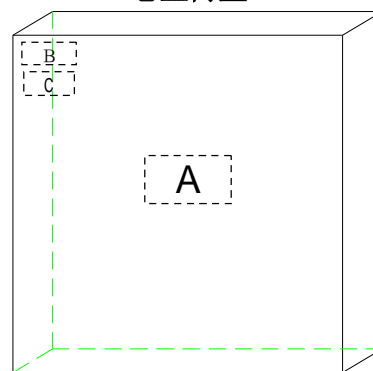
所有标签贴在卷盘负极 all the label on cathode side



7"卷盘盒 inner box



13"卷盘内盒inner box



A处:贴LRC标签;

B处:贴ROHS标签

C处:贴无卤标签HF label
(无卤产品才贴HF only)

| | |
|--|---------------|
| 标题Title: 塑封生产线SMD产品包装规范 Packaging specification of SMD | 文件编号: WI-258 |
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LRC标签label

| | |
|-------------------|-----------|
| TYPE:***** | ← LRC产品型号 |
| MARK:***** | ← 印字型号 |
| Q'TY:***** | ← 产品数量 |
| DATE:***** | ← 产品生产日期 |

ROHS标签



无卤标签 HF label



注意事项NOTE:

- 13"卷盘内盒装好产品,需用热缩膜包装;13"reel'inner box must be packed by shrink film
- 所有编带产品卷装完成后,用白色胶带将编带粘牢;
every tape after packing, must be fixed by white adhesive tape

3.1产品出厂检验报告 testing report of the OQC

每批出货时,需要附上出厂检验报告 every lot must with test report

3.2尾箱

同一编码每批次只允许出现一个尾数箱,对于尾数物料,须用缓冲材料对空余部分填充好,保证物料在受到一定的外作用力下不发生明显移动,且物料间无碰撞。

The same coding is only one ending for each batch box materials for the mantissa to be good filled with cushioning material.

LUMA105 thru LUMA160

4. Update Record

| 版次 | 更新记录 | 更新作者 | 更新日期 |
|----|------------------------------|------|-----------|
| 1 | 第一版 | 周杰 | 2010-3-18 |
| 2 | 增加印字标识 | 周杰 | 2010-9-30 |
| 3 | 增加命名说明；将LUM160系列改为LUMA160系列。 | 周杰 | 2012-5-29 |