

# EFMA210 thru EFMA280

## Surface Mount Glass Passivated Super Fast Rectifiers Reverse Voltage 50 to 600V Forward Current 2.0A

### .FEATURES

- \* Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- \* High temperature metallurgically bonded construction
- \* For use in high frequency rectifier circuits
- \* Fast switching for high efficiency
- \* Cavity-free glass passivated junction
- \* Capable of meeting environmental standards of MIL-S-19500
- \* 1.0 A operation at  $T_A=75^{\circ}\text{C}$  with no thermal runaway
- \* Typical IR less than  $1.0\mu\text{A}$
- \* High temperature soldering guaranteed:  $260^{\circ}\text{C}/10$  seconds

### .Mechanical Data

**Case:** JEDEC DO-214AC, molded plastic over glass die

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

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

**Weight:** 0.0023 oz., 0.065 g

**Handling precaution:** None

### 1.Electrical Characteristic

#### Maximum & Thermal Characteristics Ratings at $25^{\circ}\text{C}$ ambient temperature unless otherwise specified.

Parameter Symbol	symbol	EFMA 210	EFMA 220	EFMA 230	EFMA 240	EFMA 250	EFMA 260	EFMA 270	EFMA 280	Unit
Making		EF21	EF22	EF23	EF24	EF25	EF26	EF27	EF28	
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	150	200	300	400	500	600	V
Maximum RMS voltage	$V_{RMS}$	35	70	105	140	210	280	350	420	V
Maximum DC blocking voltage	$V_{DC}$	50	100	150	200	300	400	500	600	V
Maximum average forward rectified current 0.375" (9.5mm) lead length at $T_A = 75^{\circ}\text{C}$	IF(AV)	2.0								A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	75								A
Typical thermal resistance (Note 2)	$R\theta_{JA}$	55								$^{\circ}\text{C}/\text{W}$
Operating junction and storage temperature range	TJ, TSTG	-50 to +150								$^{\circ}\text{C}$



We declare that the material of product compliance with ROHS requirements

#### Electrical Characteristics Ratings at $25^{\circ}\text{C}$ ambient temperature unless otherwise specified.

Parameter Symbol	symbol	EFM 210	EFM 220	EFM 230	EFM 240	EFM 250	EFM 260	EFM 270	EFMA 280	Unit	
Maximum instantaneous forward voltage at 1.0A	$V_F$	0.95			1.25		1.7			V	
Maximum DC reverse current $T_A = 25^{\circ}\text{C}$ at rated DC blocking voltage $T_A = 125^{\circ}\text{C}$	IR	5.0				100					$\mu\text{A}$
Typical reverse recovery time (Note 1)	$t_{rr}$	35									ns
Typical junction capacitance at 4.0V, 1MHz	CJ	15.0									PF

NOTES:

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

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

Fig. 1 - Forward Current Derating Curve

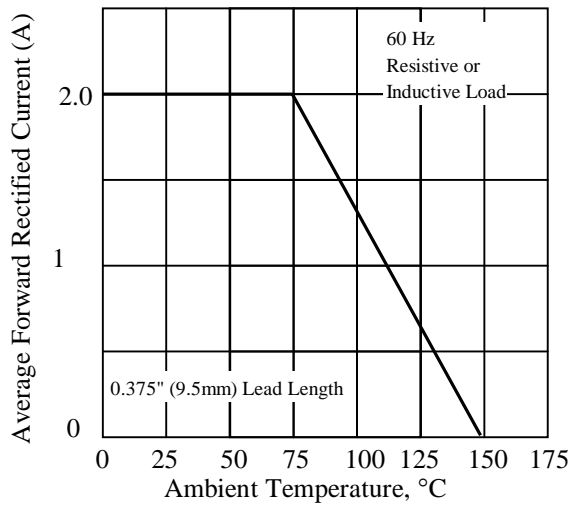


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

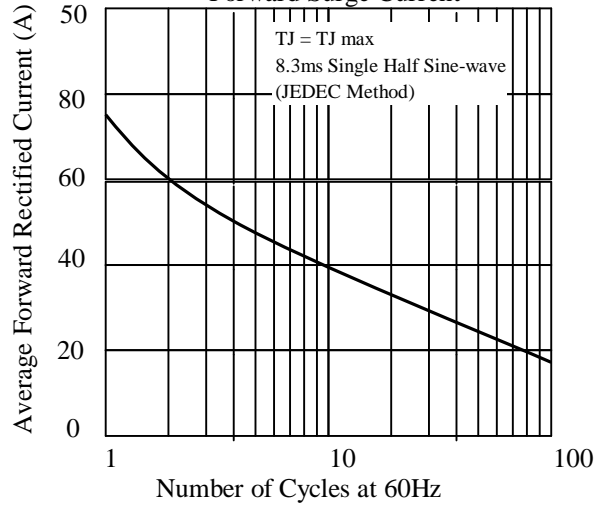


Fig 3. - Typical Instantaneous Forward Characteristics

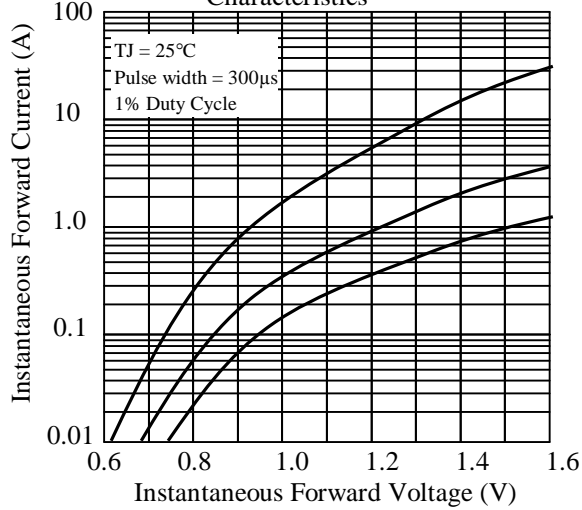


Fig 4. - Typical Reverse Characteristics

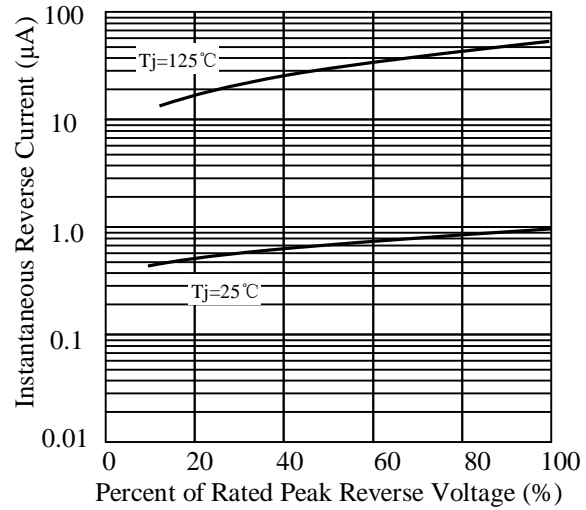


Fig 5. - typical transient thermal impedance

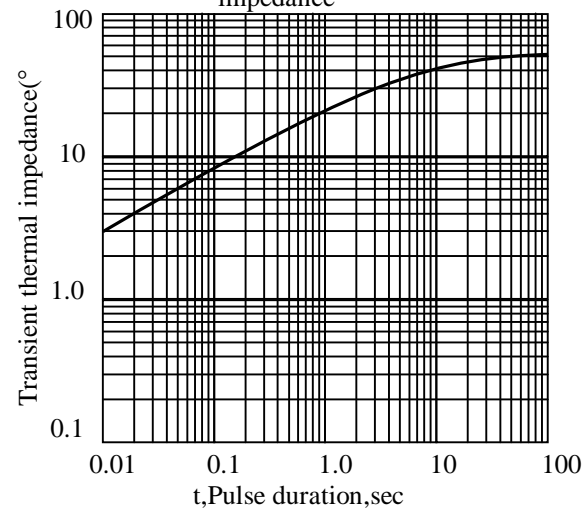
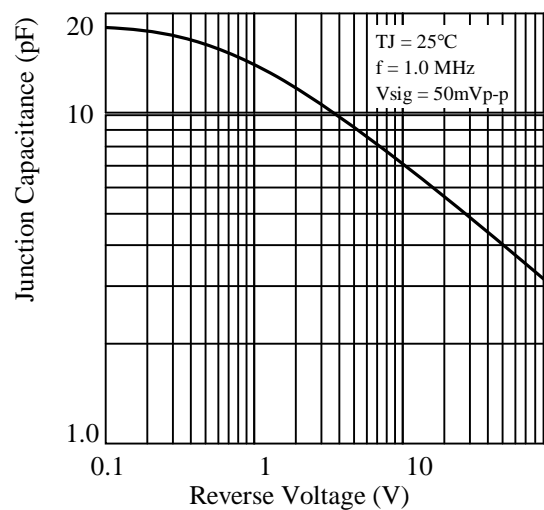
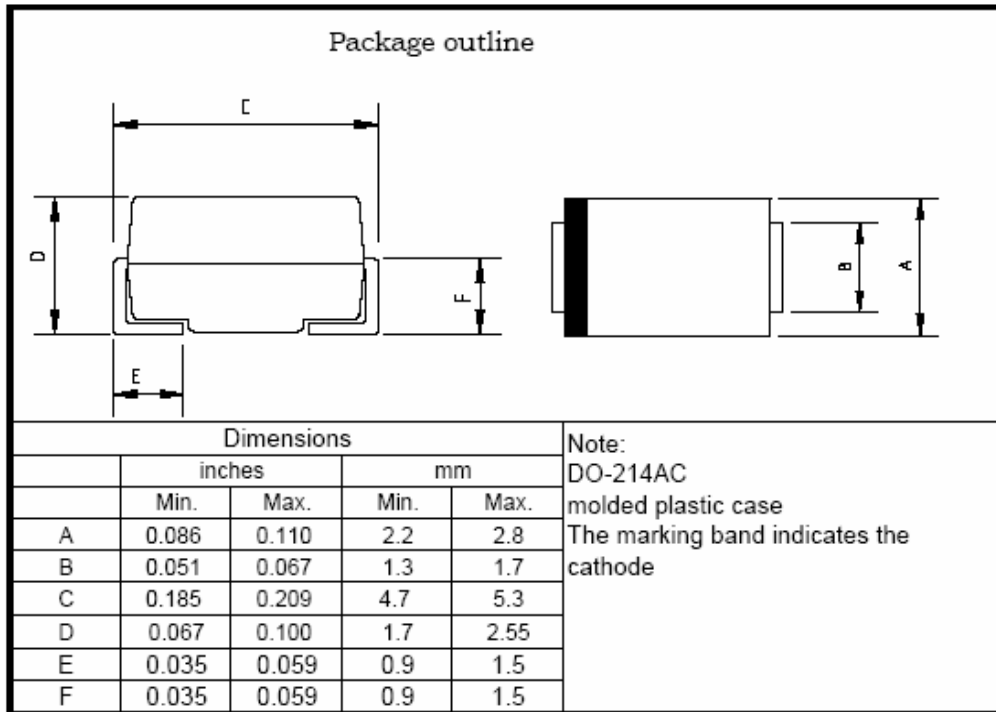


Fig 6. - Typical Junction Capacitance

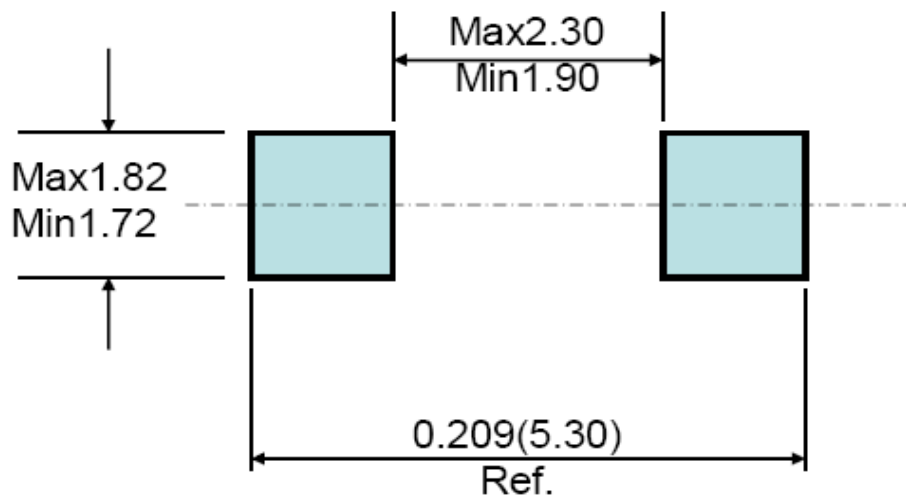


## EFMA210 thru EFMA280

### 3. dimension:



### Mounting Pad Layout ---SMA

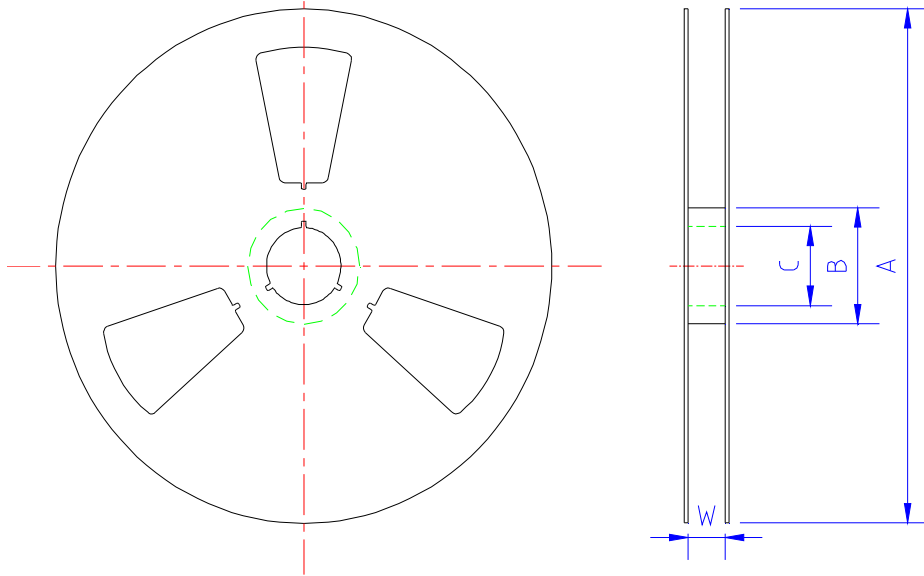


标题Title: <b>塑封生产线SMD产品包装规范</b> <b>Packaging specification of SMD</b>	文件编号: WI-258
	第 3 版 第 0 次修改
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SMD产品通用包装材料规格以及包装产品数量  
General packaging materials spec. and quantity

1.1 卷装 reel

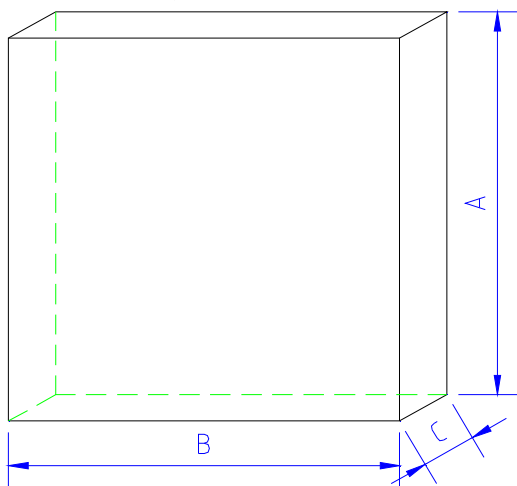
A. 卷盘规格 reel spec



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

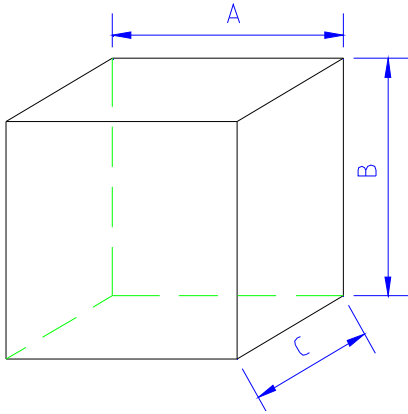
	A	B	C
尺寸	335±5.0	335±2.0	40±1.0

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

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C. 7"卷盘盒 box



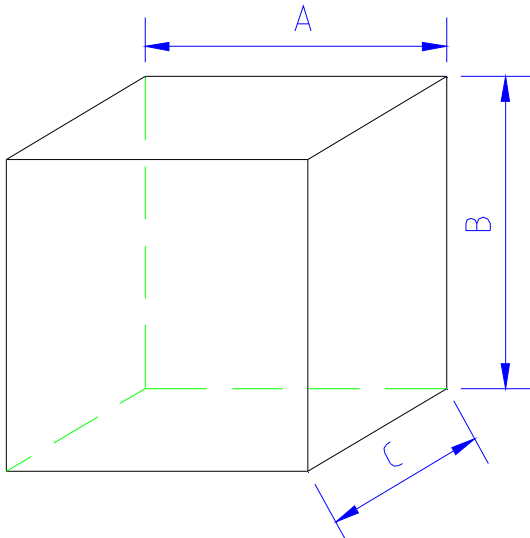
单位: mm

	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

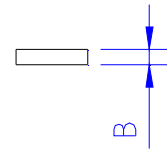
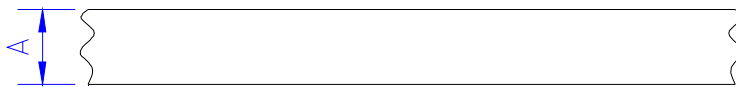
	A	B	C
尺寸	350±2.0	340±2.0	350±2.0

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

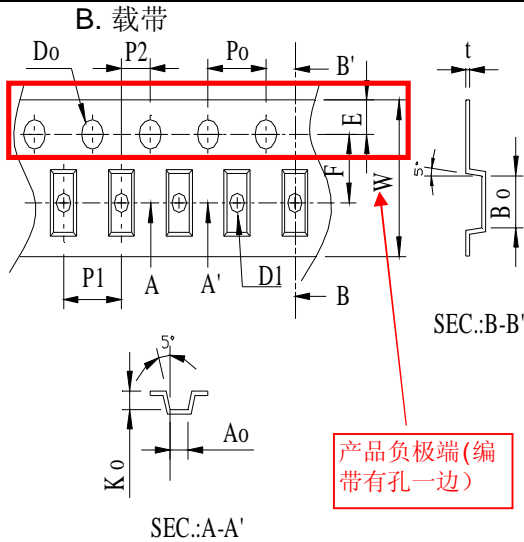
A. 盖带 Cover tape



单位: mm

	A	B
SMA	9.30±0.10	0.068±0.005
SMB		
SMC		

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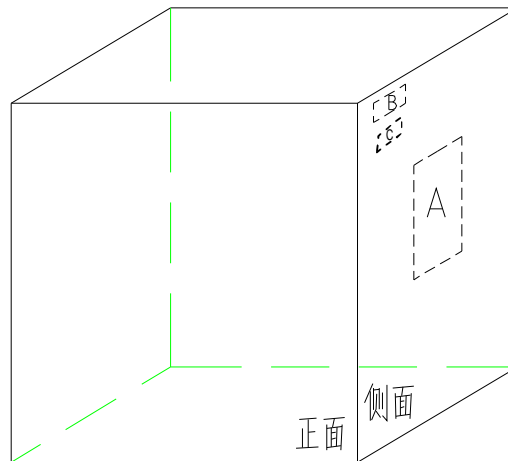
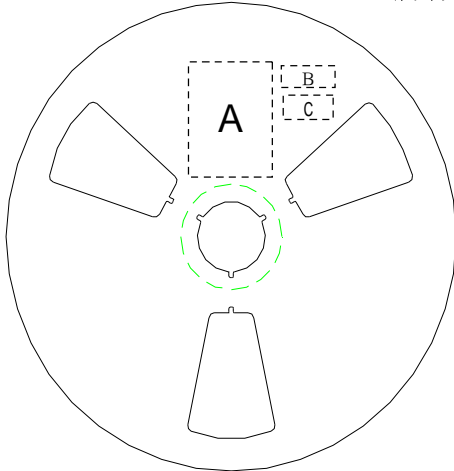
类型	SMA	SMB	SMC
W	12±0.3	12±0.3	16±0.3
P1	4±0.1	8±0.1	8±0.1
E	1.75±0.1	1.75±0.1	1.75±0.1
F	5.5±0.05	5.5±0.05	7.5±0.05
D0	1.55±0.05	1.55±0.05	1.55±0.05
D1	1.5±0.1	1.55±0.05	1.55±0.05
P0	4±0.1	4±0.1	4±0.1
P2	2±0.05	2±0.05	2±0.05
10P0	40±0.2	40±0.2	40±0.2
A0	2.79±0.1	3.8±0.1	6.05±0.1
B0	5.33±0.1	5.4±0.1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

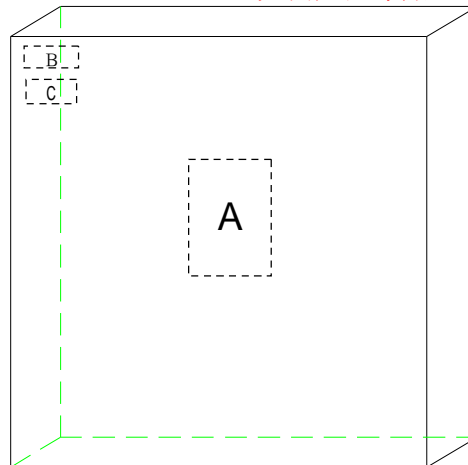
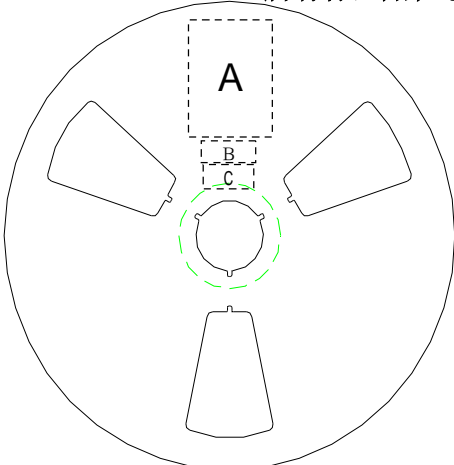
#### A. 7"卷盘reel

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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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

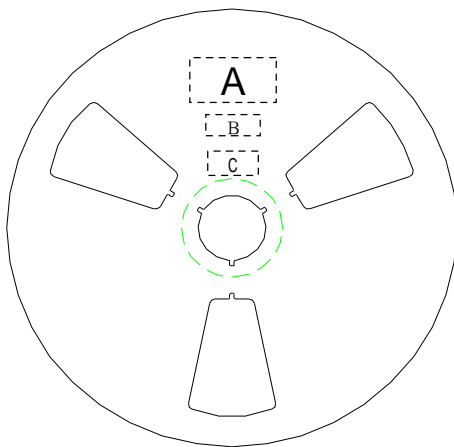


无卤标签 HF label

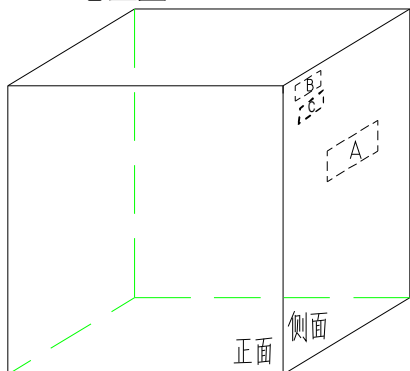


2.2 国外客户  
overseas

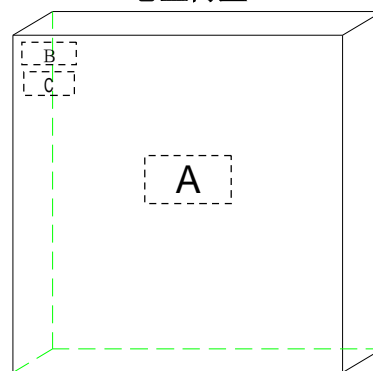
所有标签贴在卷盘负极 all the label on cathode side



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: <b>塑封生产线SMD产品包装规范</b> <b>Packaging specification of SMD</b>	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.



## EFMA210 thru EFMA280

### 4. Update Record

版次	更新记录	更新作者	更新日期
1	第一版	周杰	2011-7-19
2	增加印字规范	周杰	2011-7-25
3	1. EFM2**变更为EFMA2**; 2. 修正TRR, 由30nS修正为35nS;	周杰	2012-8-3