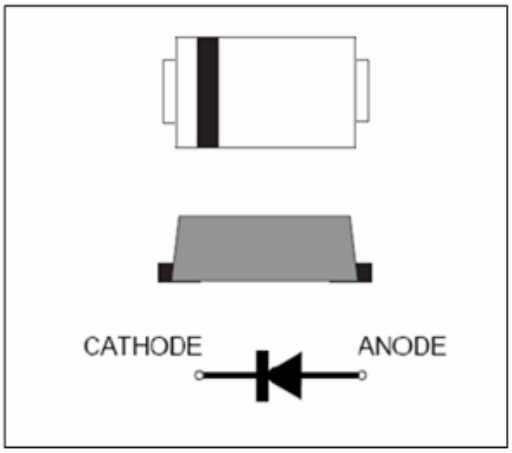
乐山无线电股份有限公司
Leshan Radio Company, Ltd

HFMAF210 thru HFMAF290

Surface Mount Glass Passivated High Efficiency Rectifiers
Reverse Voltage 50 to 1200V Forward Current 2.0A

FEATURES

* Plastic package has Underwriters Laboratories Flammability Classification 94V-0
* Ideally suited for use in very high frequency switching
* power supplies, inverters and as free wheeling diodes
* Ultrafast recovery time for high efficiency
* Excellent high temperature switching
* Soft recovery characteristics
* Cavity-free glass passivated junction
* High temperature soldering guaranteed:
* 260°C/10 seconds
  5 lbs. (2.3kg) tension



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

Mechanical Data

Case: JEDEC SMA-FL, molded plastic over glass die
Terminals: Plated leads, solderable per MIL-STD-750, Method 2026
Polarity: Color band denotes cathode end
Mounting Position: Any
Weight: 0.0327 g
Handling precautin:None

1.Electrical Characteristic

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

Parameter Symbol	symbol	HFMA F210	HFMA F220	HFMA F230	HFMA F240	HFMA F 250	HFMA F260	HFMA F270	HFMA F280	HFMA F290	Unit
device marking code		HF21	HF22	HF23	HF24	HF25	HF26	HF27	HF28	HF29	
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	300	400	600	800	1000	1200	V
Maximum RSM voltage	V_{RSM}	35	70	140	210	280	420	560	700	840	V
Maximum DC blocking voltage	V_{DC}	50	100	200	300	400	600	800	1000	1200	V
Maximum average forward rectified current (See fig. 2)at Tc=75℃。	IF(AV)	2.0									A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	60									A
Typical thermal resistance (Note 2)	$R\theta J_A$ $R\theta J_C$	150 25									°C/W
Operating junction and storage temperature range	TJ, TSTG	–50 to +150									°C

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

Parameter Symbol	symbol	HFMA 210	HFMA 220	HFMA 230	HFMA 240	HFMA 250	HFMA 260	HFMA 270	HFMA 280	HFMA 290	Unit
Maximum instantaneous forward voltage at 2.0A	V_F	1.00			1.30		1.85				V
Maximum DC reverse current TA = 25°C at rated DC blocking voltage TJ = 100°C	IR	5.0 50									μA
Typical reverse recovery time (Note 1)	trr	50					75				ns
Typical junction capacitance at 4.0V, 1MHz	CJ	17									PF

NOTES:
1. IF = 0.5A, IR = 1.0A, IRR = 0.25A
2. 8.0mm2 (.013mm thick) land areas

HFMAF210 thru HFMAF290

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

Fig. 1 – Forward Current Derating Curve

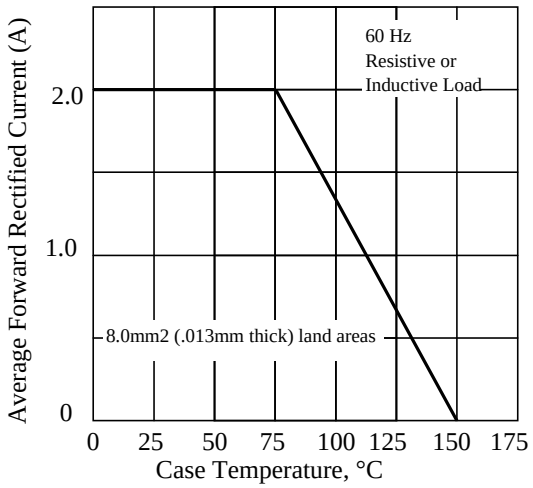


Fig. 2 – Maximum Non-repetitive Peak Forward Surge Current

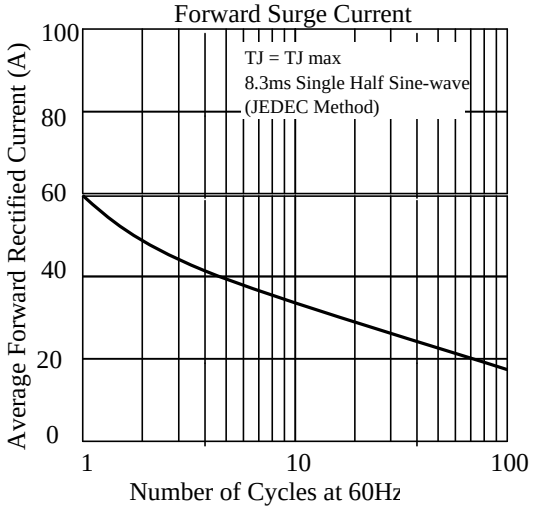


Fig 3. – Typical Instantaneous Forward Characteristics

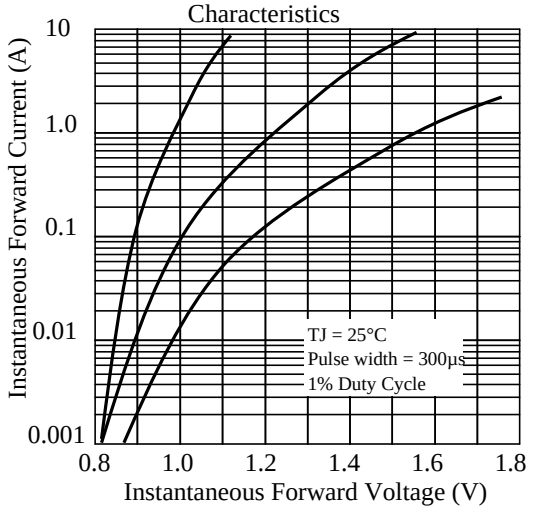


Fig 4. – Typical Reverse Characteristics

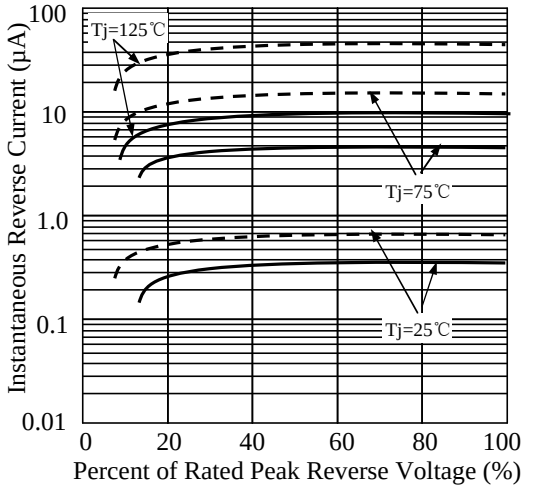


Fig 5. – typical transient thermal impedance

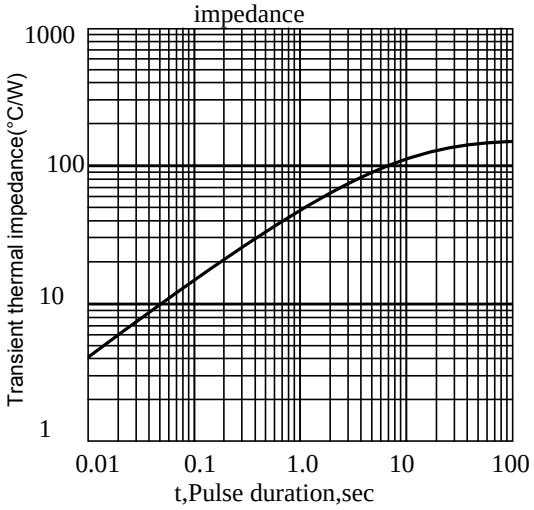
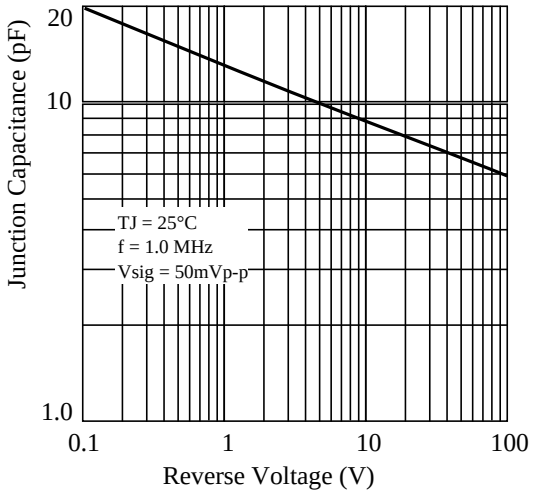


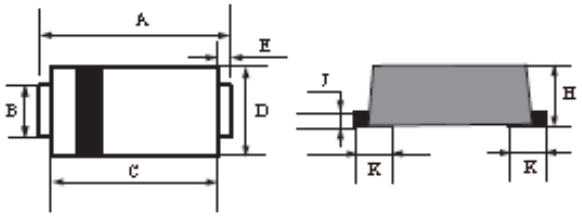
Fig 6. – Typical Junction Capacitance



HFMAF210 thru HFMAF290

3. dimension:

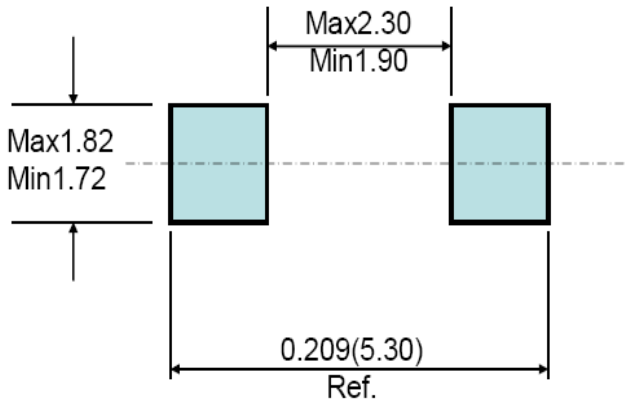
SMA-FL



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.4	4.8	0.173	0.189
B	1.3	1.5	0.051	0.059
C	3.3	3.7	0.130	0.146
D	2.3	2.7	0.091	0.106

Mounting Pad Layout

SMA-FL

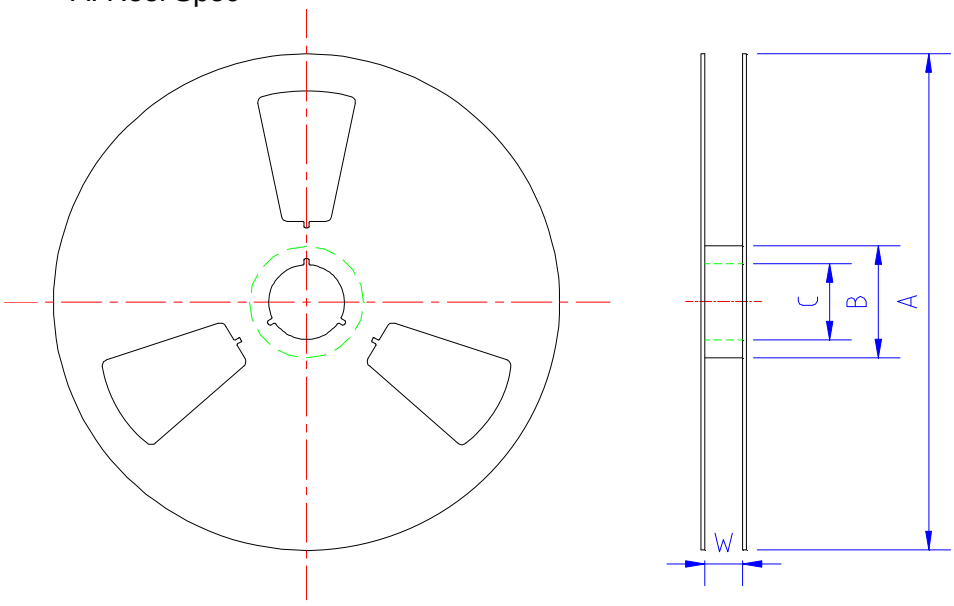


HFMAF290： HF----超快二极管；M---SM贴片产品；AF---SMA-FL封装；2----IF=2A; 90----VB=1200V;

5.1 、SMD Packing Reel Spec & Packing Quantity

5.1.1 Reel Packing

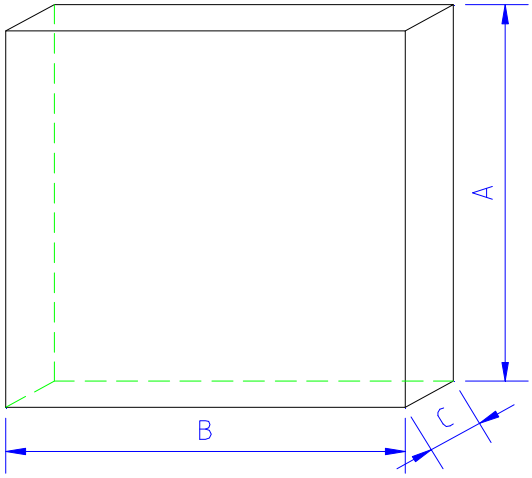
A. Reel Spec



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



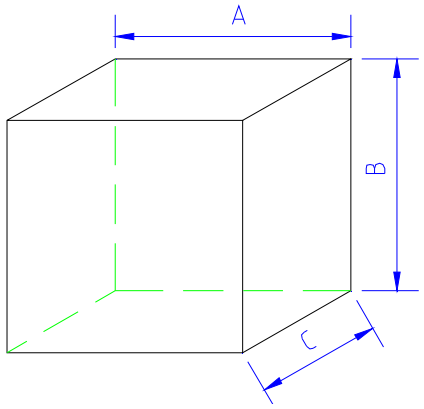
unit：mm

	A	B	C
size	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



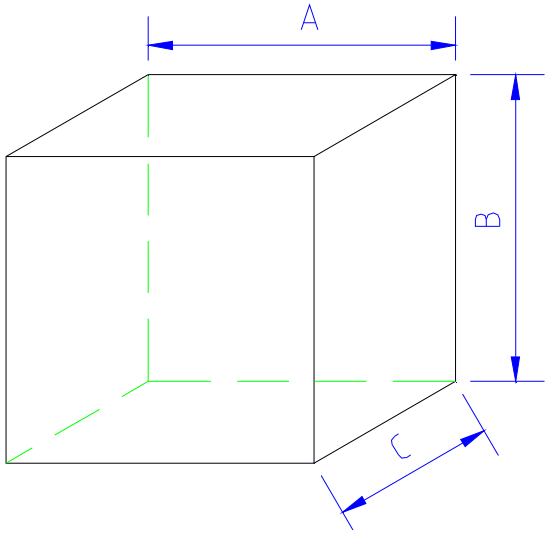
unit：mm

	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

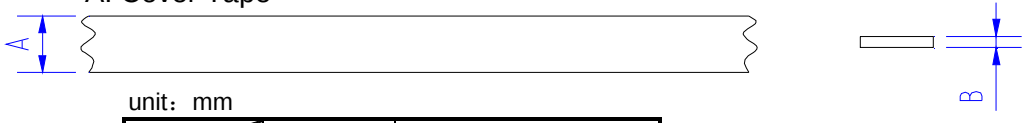
	A	B	C
SMA-FL SOD123FL SOD323HE	455±2.0	400±2.0	410±2.0

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

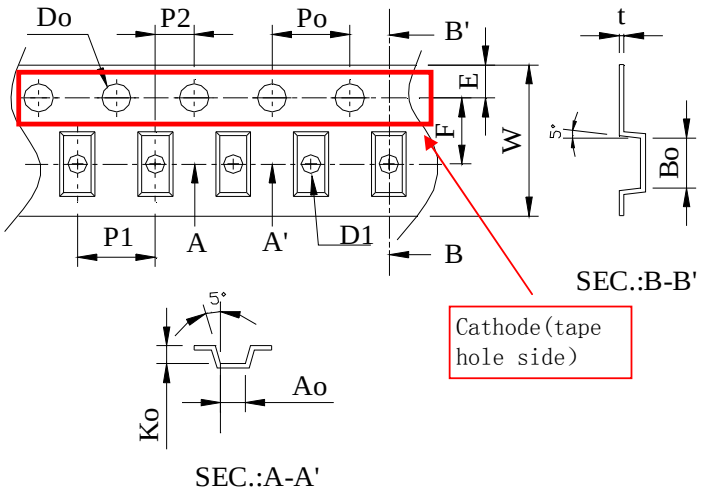
A. Cover Tape



unit：mm

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

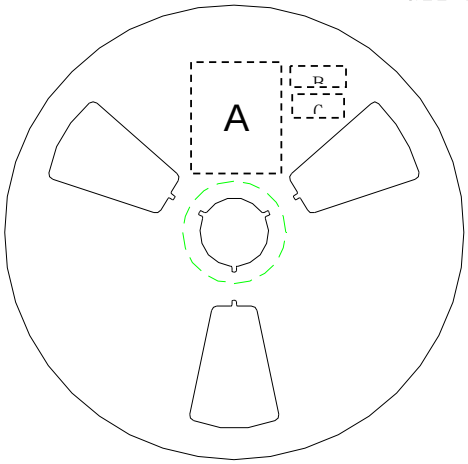
B. Carrier Tape

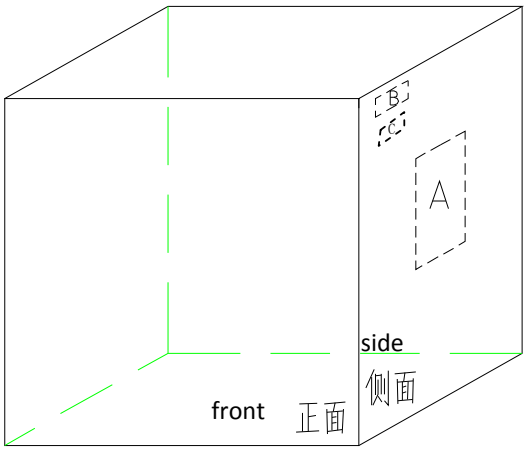


Item	SOD323HE	SOD123FL	SMA-FL	SMB-FL	TO277
W	8±0.3	8±0.3	12±0.3	12±0.3	12±0.3
P1	4±0.1	4±0.1	4±0.1	8±0.1	8±0.1
E	1.75±0.1	1.75±0.1	1.75±0.1	1.75±0.1	1.75±0.1
F	3.5±.05	3.5±.05	5.5±.05	5.5±0.05	5.5±.05
D0	1.55±0.05	1.55±0.05	1.55±0.05	1.55±0.05	1.55±0.05
D1	1.1±0.1	1.1±0.1	1.5±0.1	1.55±0.05	1.5±0.1
P0	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

5.2、SMD Power Diode General Packing Spec

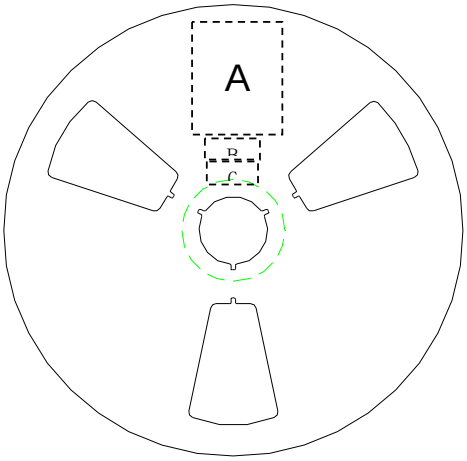
A. 7" reel all labels will be at cathode side of reel ;

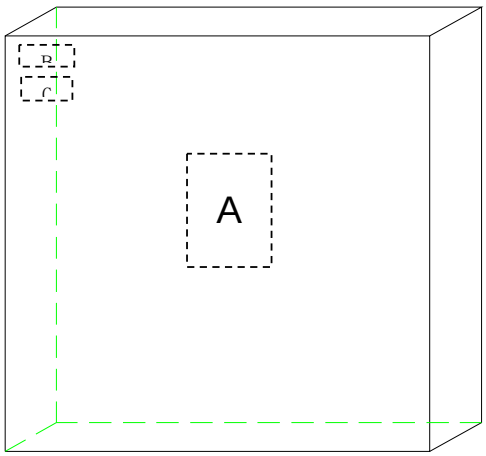




A:LRC label; B:Environment Label C:Halide free label

B. 13" reel





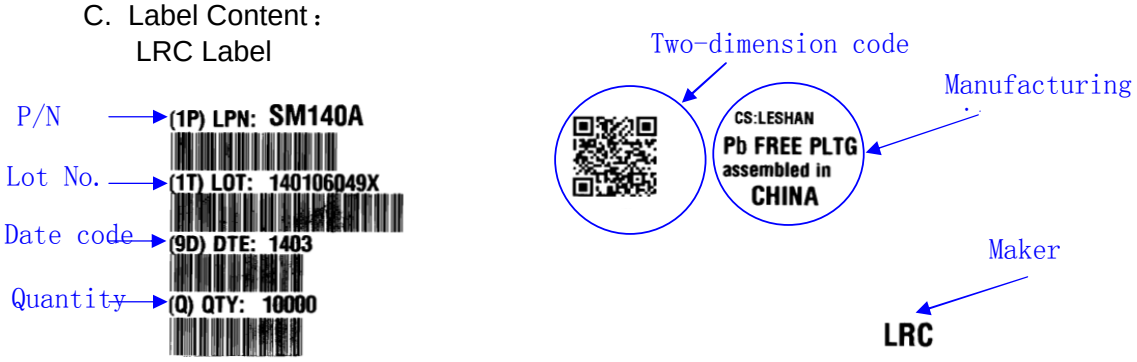
A:LRC label; B:Environment Labe C:Halide free label

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.



C. Label Content：

LRC Label



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

Environment Label



Halide-free Label



HFMAF210 thru HFMAF290

4. Update Record

版次	更新记录	更新作者	更新日期
1	第一版	周杰	2014.04.29