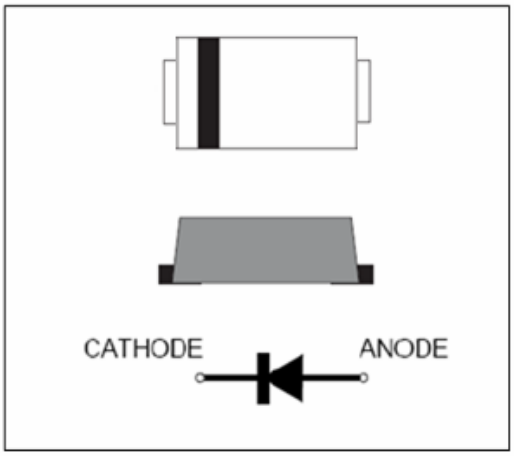
P6SMAF***CA

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

600 Watt Peak Pulse Power

FEATURES

* Plastic package has Underwriters Laboratory Flammability Classification 94V-O
* For surface mounted applications in order to optimize board space
* Low profile package
* Built-in strain relief
* Glass passivated junction
* Low inductance
* Excellent clamping capability
* Repetition Rate (duty cycle):0.01%
* Fast response time: typically less than 1.0ps from 0 Volts to V(BR) for unidirectional types
* Typical IR less than 1mA above 10V
* High temperature soldering guaranteed: 260°C/10 seconds,



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

MECHANICAL DATA

Case: JEDEC SMA-FL molded plastic
Terminals: Plated leads, solderable per MIL-STD-202, Method 208
Mounting Position: Any
Weight:0.0327 gram

1.DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types P6SMAF62CA

Electrical characteristics apply in both directions.marking like Uni; without color band.

MAXIMUM RATINGS AND CHARACTERISTICS

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
Peak Power Dissipation at T_A=25°C, T_P=1ms(Note 1)	P_{PPM}	Minimum 600	Watts
Steady State Power Dissipation at T_L=75°C(Note 2)	$P_{M(AV)}$	5.0	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load(JECED Method) (Note 3)	I_{FSM}	100	Amps
Operating Temperature Range	T_J,	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C

NOTES:

1. Non-repetitive current pulse, per Fig. 3 and derated above TA=25°C per Fig. 2.
2. Mounted on Copper Leaf area of 1.57in2(40mm^2).
3. 8.3ms single half sine-wave, duty cycle= 4 pulses per minutes maximum.

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Bi-DIRECTIONAL PART NUMBER	Device marking code	REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @IPP VC (V)	MAXIMUM PEA PULSE CURRENT IPPM (A)	REVERSE LEAKAGE @VRWM IR (uA)
P6SMAF6.8CA	6.8A	5.8	6.45	7.14	10	10.5	57.1	1000
P6SMAF7.5CA	7.5A	6.4	7.13	7.88	10	11.3	53.1	500
P6SMAF8.2CA	8.2A	7.02	7.79	8.61	10	12.1	49.6	200
P6SMAF9.1CA	9.1A	7.78	8.65	9.5	1	13.4	44.8	50
P6SMAF10CA	10A	8.55	9.5	10.5	1	14.5	41.4	10
P6SMAF11CA	11A	9.4	10.5	11.6	1	15.6	38.5	1
P6SMAF12CA	12A	10.2	11.4	12.6	1	16.7	35.9	1
P6SMAF13CA	13A	11.1	12.4	13.7	1	18.2	33.0	1
P6SMAF15CA	15A	12.8	14.3	15.8	1	21.2	28.3	1
P6SMAF16CA	16A	13.6	15.2	16.8	1	22.5	26.7	1
P6SMAF18CA	18A	15.3	17.1	18.9	1	25.2	23.8	1
P6SMAF20CA	20A	17.1	19	21	1	27.7	21.7	1
P6SMAF22CA	22A	18.8	20.9	23.1	1	30.6	19.6	1
P6SMAF24CA	24A	20.5	22.8	25.2	1	33.2	18.1	1
P6SMAF27CA	27A	23.1	25.7	28.4	1	37.5	16.0	1
P6SMAF30CA	30A	25.6	28.5	31.5	1	41.4	14.5	1
P6SMAF33CA	33A	28.2	31.4	34.7	1	45.7	13.1	1
P6SMAF36CA	36A	30.8	34.2	37.8	1	49.9	12.0	1
P6SMAF39CA	39A	33.3	37.1	41	1	53.9	11.1	1
P6SMAF43CA	43A	36.8	40.9	45.2	1	59.3	10.1	1
P6SMAF47CA	47A	40.2	44.7	49.4	1	64.8	9.3	1
P6SMAF51CA	51A	43.6	48.5	53.6	1	70.1	8.6	1
P6SMAF56CA	56A	47.8	53.2	58.8	1	77	7.8	1
P6SMAF62CA	62A	53	58.9	65.1	1	85	7.1	1
P6SMAF68CA	68A	58.1	64.6	71.4	1	92	6.5	1
P6SMAF75CA	75A	64.1	71.3	78.8	1	103	5.8	1
P6SMAF82CA	82A	70.1	77.9	86.1	1	113	5.3	1
P6SMAF91CA	91A	77.8	86.5	95.5	1	125	4.8	1
P6SMAF100CA	100A	85.5	95	105	1	137	4.4	1
P6SMAF110CA	110A	94	105	116	1	152	3.9	1
P6SMAF120CA	120A	102	114	126	1	165	3.6	1
P6SMAF130CA	130A	111	124	137	1	179	3.4	1
P6SMAF150CA	150A	128	143	158	1	207	2.9	1
P6SMAF160CA	160A	136	152	168	1	219	2.7	1
P6SMAF170CA	170A	145	162	179	1	234	2.6	1
P6SMAF180CA	180A	154	171	189	1	246	2.4	1
P6SMAF200CA	200A	171	190	210	1	274	2.2	1
P6SMAF220CA	220A	185	209	231	1	328	1.8	1
P6SMAF250CA	250A	214	237	263	1	344	1.7	1
P6SMAF300CA	300A	256	285	315	1	414	1.4	1

For parts without A , the VBR is + 10%

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

Fig. 1-Peak Pulse Power Rating Curve

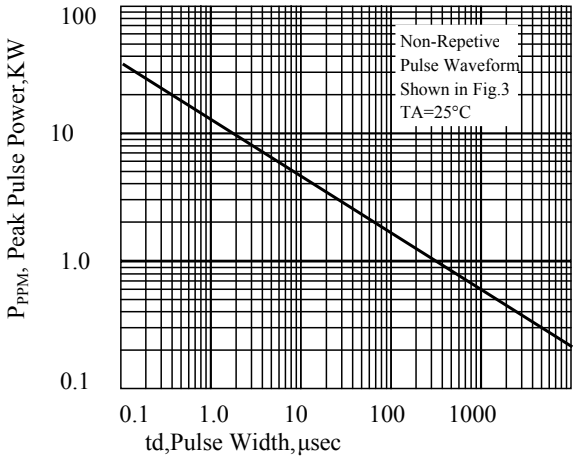


Fig. 2-Pulse Derating Curve

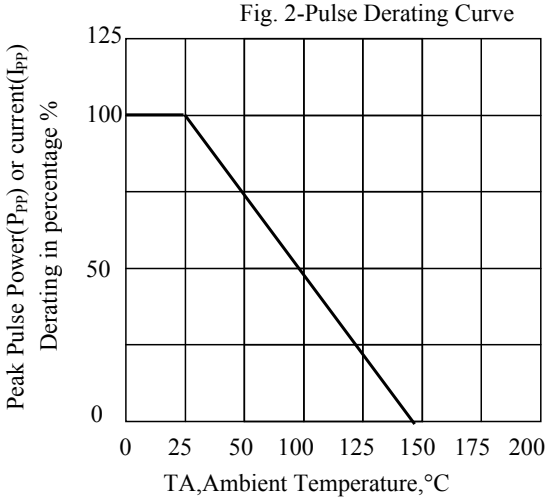


Fig. 3-Pulse Waveform

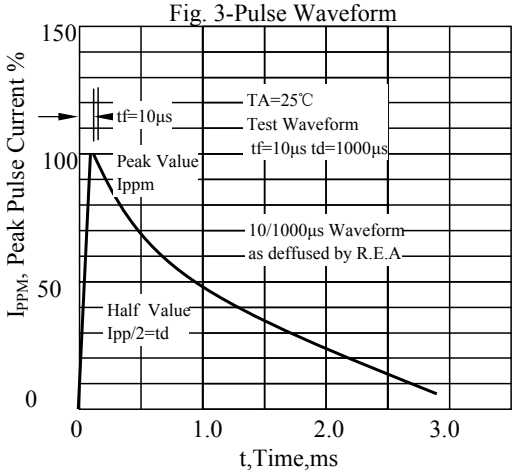


Fig. 4-Typical Junction Capacitance
Unidirectional

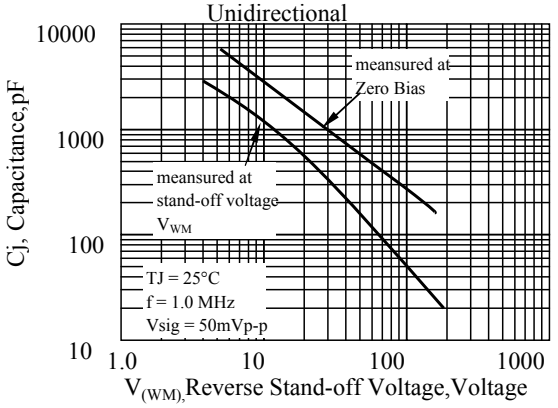


Fig 5. – typical transient thermal impedance

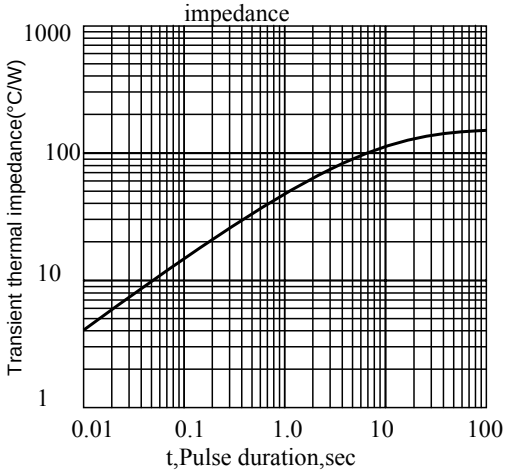
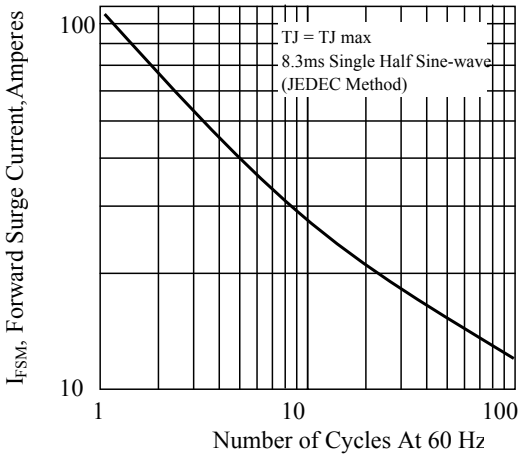


Fig. 6-Maximum Non-Repetitive Peak
Forward Surge Current Unidirectional



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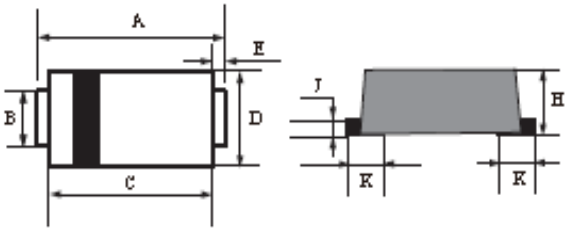
3. dimension:

SMA-FL

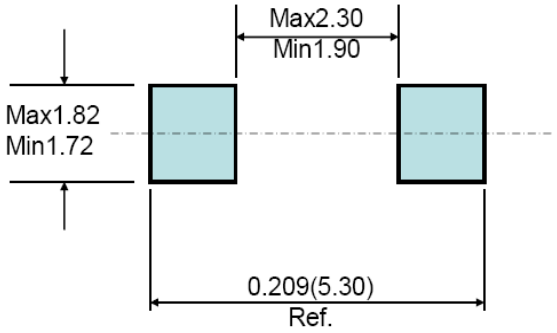


DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.4	4.8	0.173	0.189
B	1.3	1.5	0.051	0.059
C	3.3	3.7	0.130	0.146
D	2.3	2.7	0.091	0.106
E	0.90Typ		0.035Typ	
H	0.9	1.2	0.036	0.047
J	0.11	0.21	0.005	0.009

Suggested solder pad layout

Mounting Pad Layout

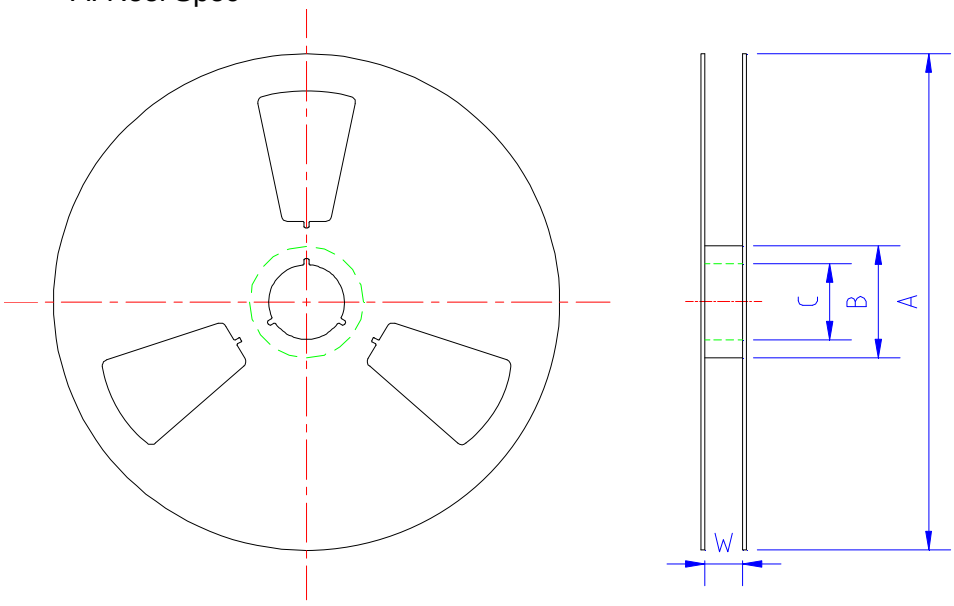
SMA-FL



5.1 、SMD Packing Reel Spec & Packing Quantity

5.1.1 Reel Packing

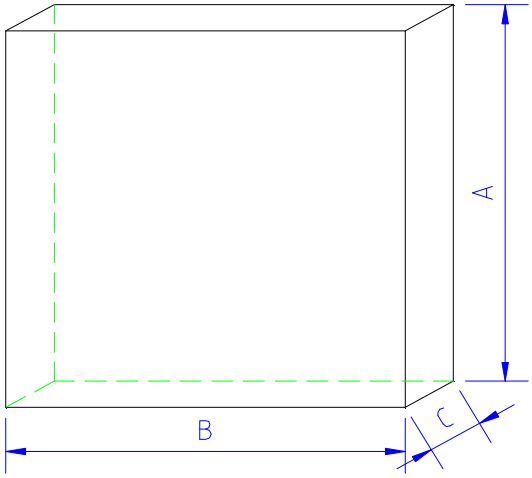
A. Reel Spec



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



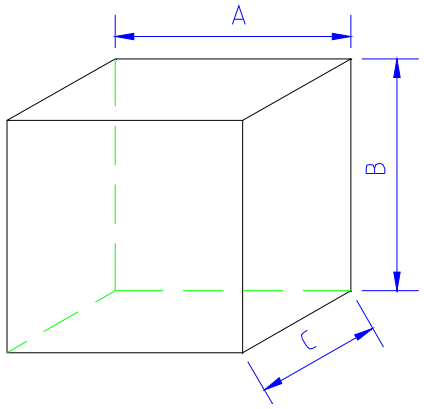
unit：mm

	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



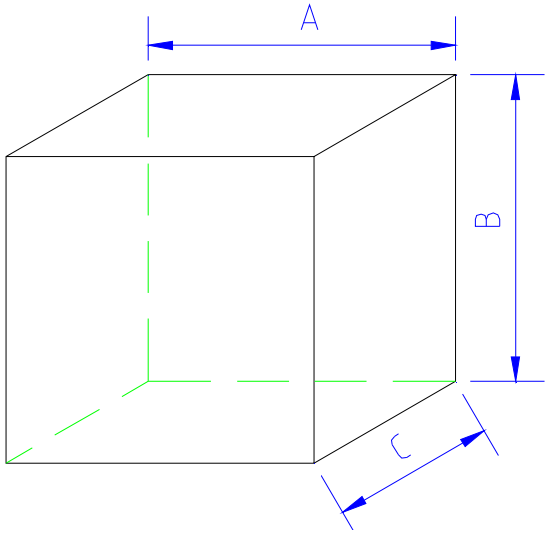
unit：mm

	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

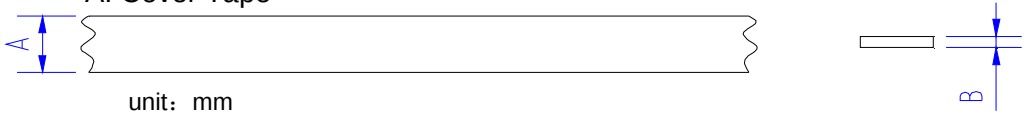
	A	B	C
SMA-FL SOD123FL SOD323HE	455±2.0	400±2.0	410±2.0

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

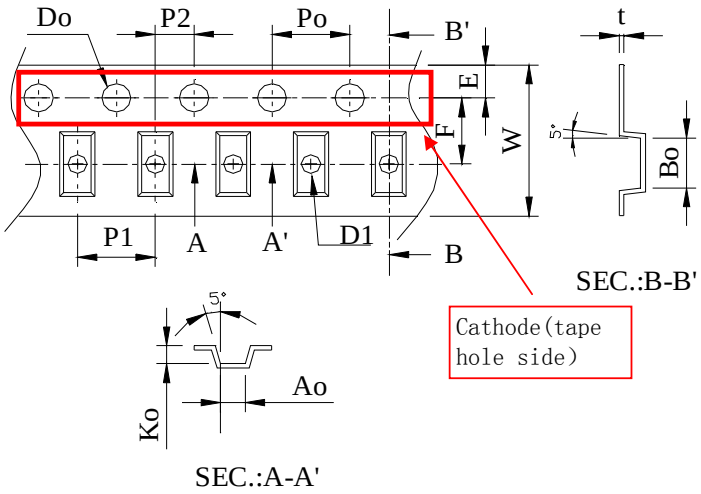
A. Cover Tape



unit：mm

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

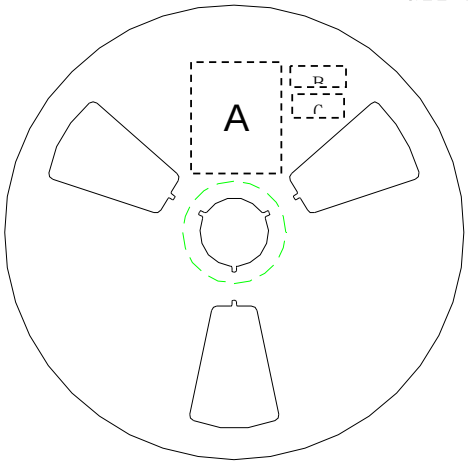
B. Carrier Tape

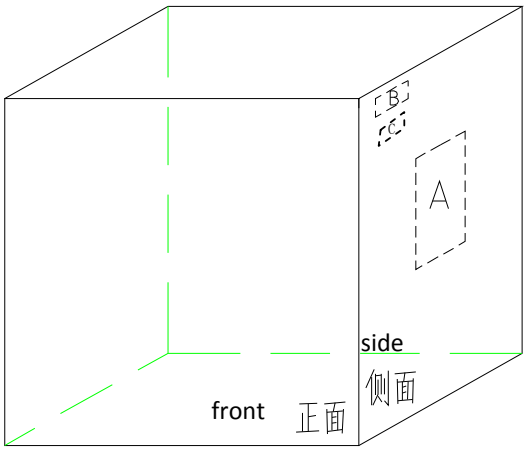


Item	SOD323HE	SOD123FL	SMA-FL	SMB-FL	TO277
W	8±0.3	8±0.3	12±0.3	12±0.3	12±0.3
P1	4±0.1	4±0.1	4±0.1	8±0.1	8±0.1
E	1.75±0.1	1.75±0.1	1.75±0.1	1.75±0.1	1.75±0.1
F	3.5±.05	3.5±.05	5.5±.05	5.5±0.05	5.5±.05
D0	1.55±0.05	1.55±0.05	1.55±0.05	1.55±0.05	1.55±0.05
D1	1.1±0.1	1.1±0.1	1.5±0.1	1.55±0.05	1.5±0.1
P0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

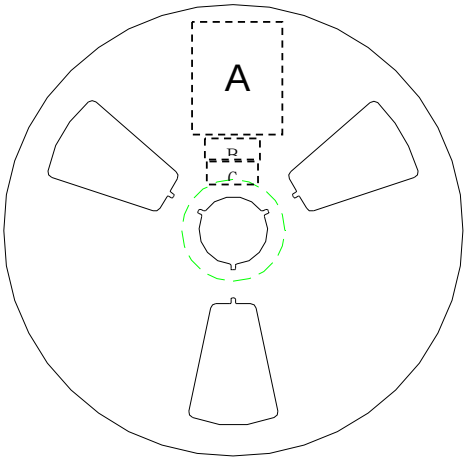
A. 7" reel all labels will be at cathode side of reel ;

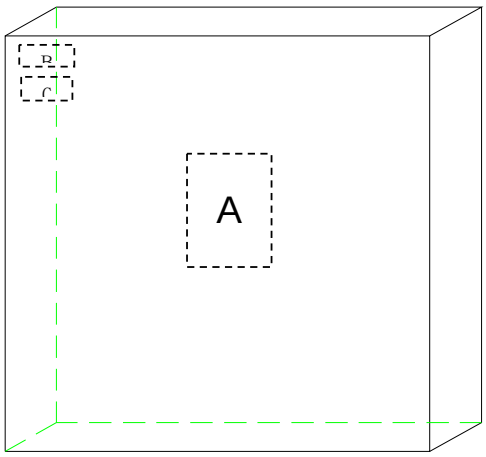




A:LRC label; B:Environment Label C:Halide free label

B. 13" reel



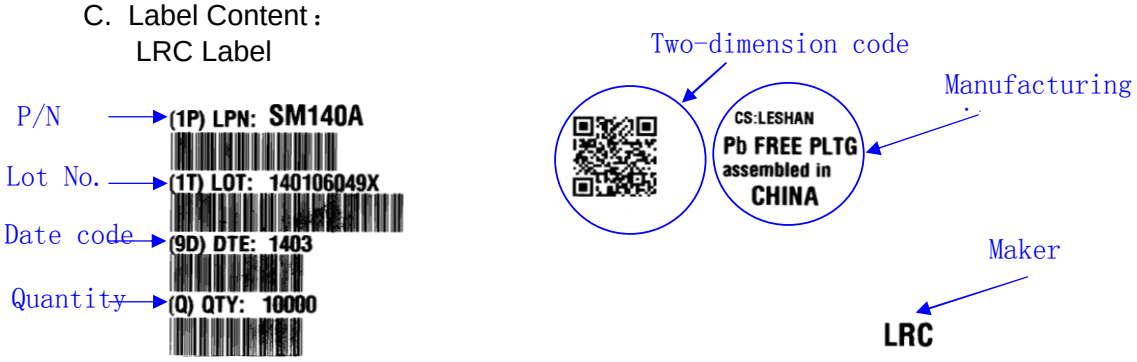


A:LRC label; B:Environment Labe C:Halide free label

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

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4. Update Record

版次	更新记录	更新作者	更新日期
1	第一版	周杰	2014.05.13