

SM120AF thru SM1100AF

Schottky Barrier Rectifiers

Reverse Voltage 20 to100V Forward Current 1.0A

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 SMA-FL

molded plastic over sky die

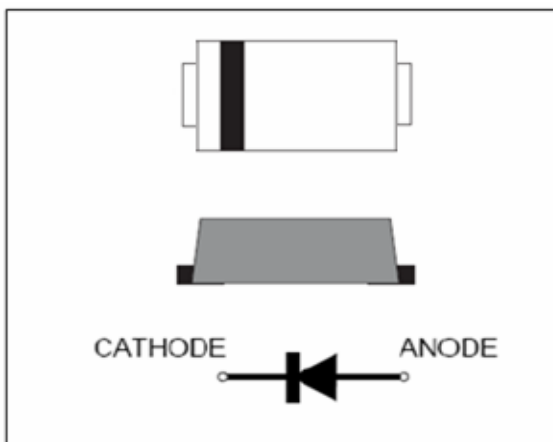
Terminals: Plated leads, solderable per MIL-STD-750, Method 2026

Polarity: Color band denotes cathode end

Mounting Position Any

Weight: 0.0327 g

Handling precautinNone



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

1.Electrical Characteristic

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

Parameter Symbol	symbol	SM120 AF	SM130 AF	SM140 AF	SM245 AF	SM150 AF	SM160 AF	SM180 AF	SM1100 AF	Unit
device marking code		S12	S13	S14	S245	S15	S16	S18	S110	
Maximum repetitive peak reverse voltage	VRRM	20	30	40	45	50	60	80	100	V
Maximum RMS voltage	VRMS	14	21	28	31.5	35	42	56	70	V
Maximum DC blocking voltage	VDC	20	30	40	45	50	60	80	100	V
Maximum average forward rectified current at TC = 75°C (See fig. 1)	IF(AV)	1.0								A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	IFSM	30								A
Typical thermal resistance (Note 1)	RθJA RθJC	150 25								°C/W
Operating junction and storage temperature range	TJ, TSTG	-40 to +150								°C

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

Parameter Symbol	symbol	SM120 AF	SM130 AF	SM140 AF	SM245 AF	SM150 AF	SM160 AF	SM180 AF	SM1100 AF	Unit	
Maximum instantaneous forward voltage at 2.0A	V _F	0.50				0.70		0.85		V	
Maximum DC reverse current TA = 25°C at rated DC blocking voltage Tj = 125°C	IR	0.5 5.0									mA
Typical junction capacitance at 4.0V, 1MHz	CJ	110									PF

NOTES:

1. 8.0mm2 (.013mm thick) land areas

SM120AF thru SM1100AF

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

Fig. 1 - Forward Current Derating Curve

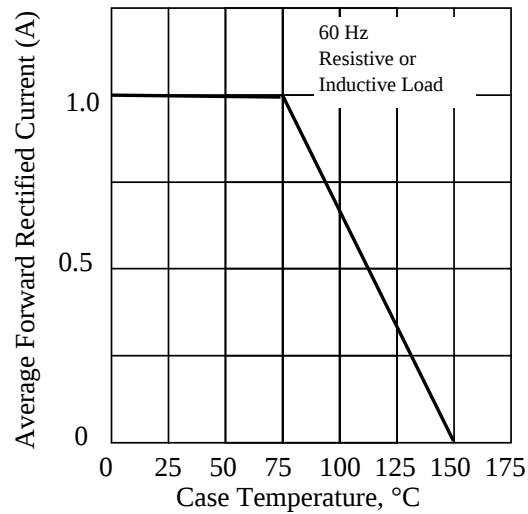


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

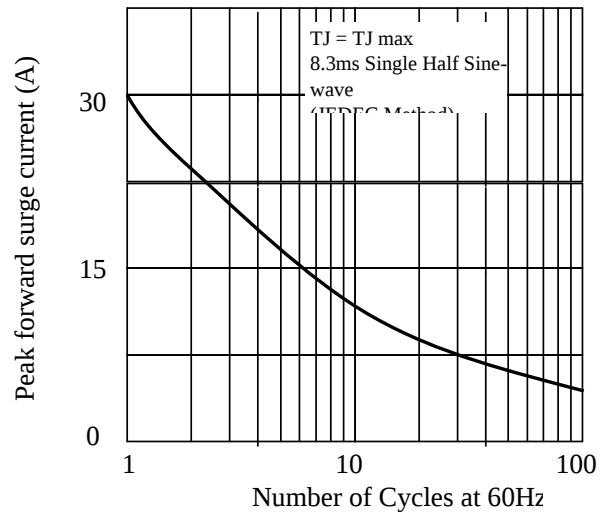


Fig. 3 - Typical Instantaneous Forward Characteristics

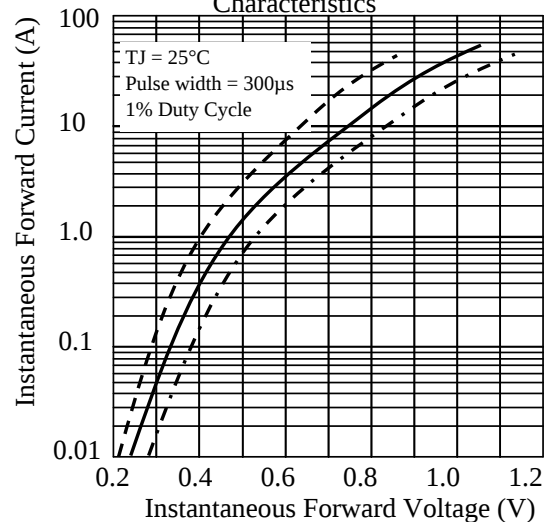


Fig. 4 - Typical Reverse Characteristics

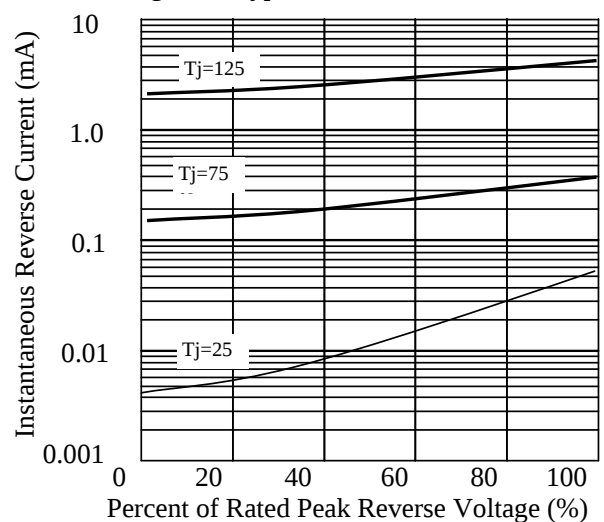


Fig. 5 - typical transient thermal impedance

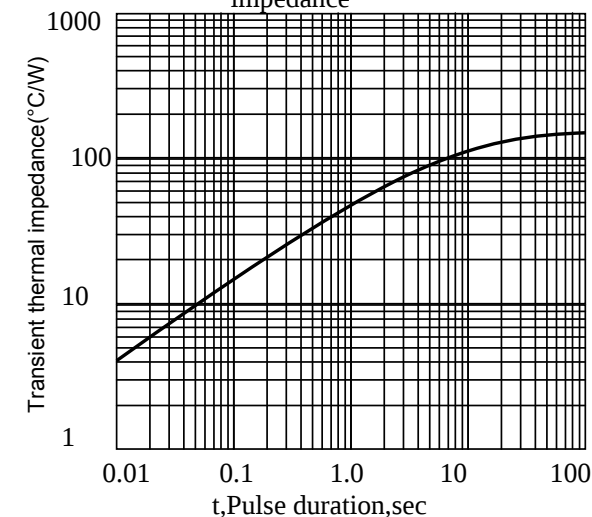
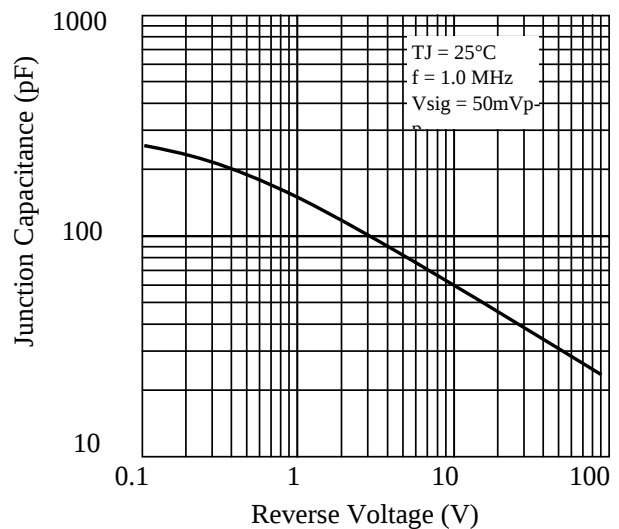


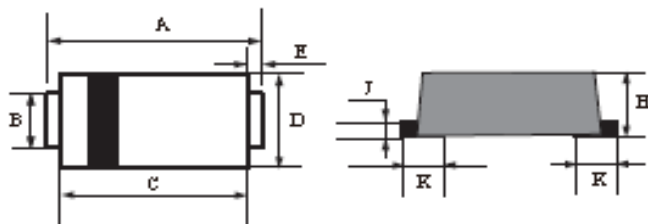
Fig. 6 - Typical Junction Capacitance



SM120AF thru SM1100AF

3. dimension:

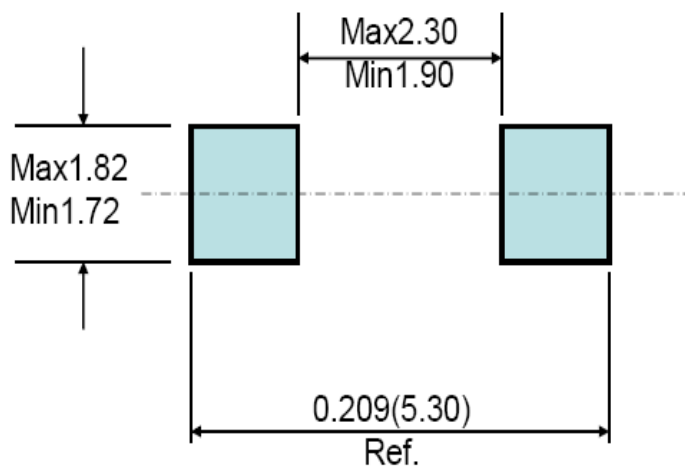
SMA-FL



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

Mounting Pad Layout

SMA-FL



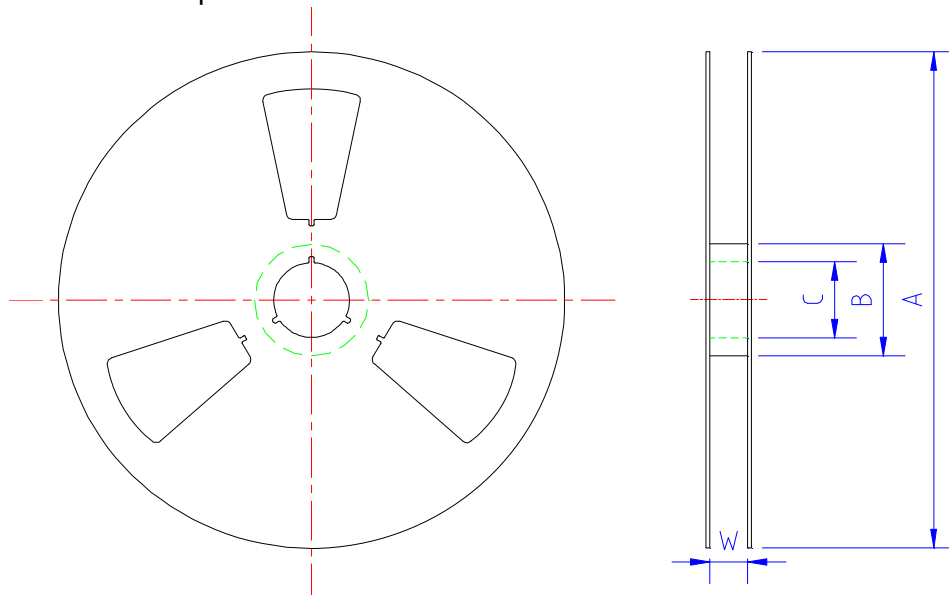
SM140AF: " S"--肖特基产品; M---贴片产品; "1"--正向电流1A; " 40"---VB为40V;AF---SMA-FL封装;

Title: Power Diode SMD Package Packing Spec	DOC NO.: WI-258
	Version: 5 Modification: 0
	Page: 2

5.1 、 SMD Packing Reel Spec & Packing Quantity

5.1.1 Reel Packing

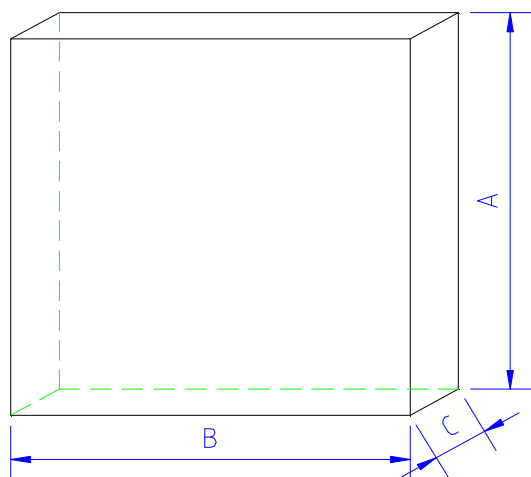
A. Reel Spec



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

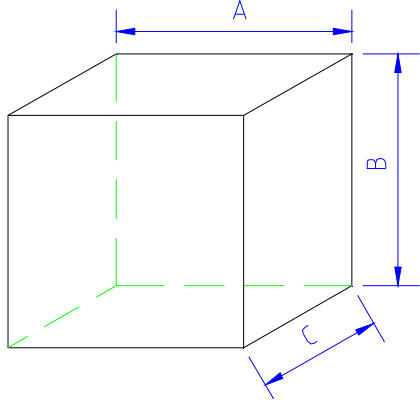
	A	B	C
size	335±5.0	335±2.0	40±1.0

as per above packing

Spec	Q' ty/Box
TO277 13" reel	10K
SMB-FL 13" reel	10K

Title: Power Diode SMD Package Packing Spec	DOC NO.: WI-258
	DOC NO.: WI-258
	Page: 3

C. 7" reel packing box



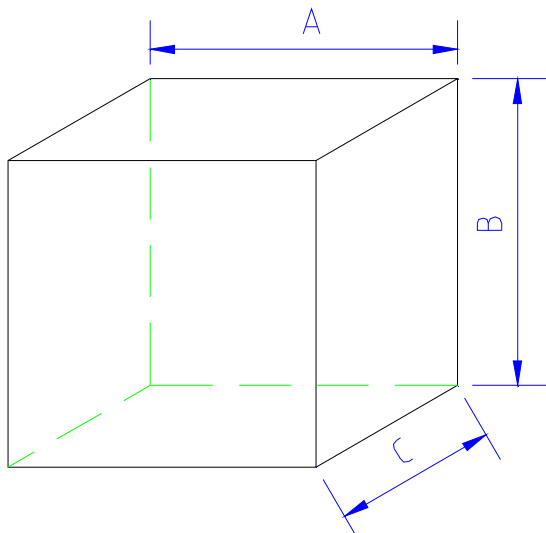
unit: mm

	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

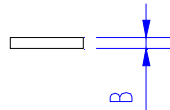
	A	B	C
SMA-FL SOD123FL SOD323HE	455±2.0	400±2.0	410±2.0

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

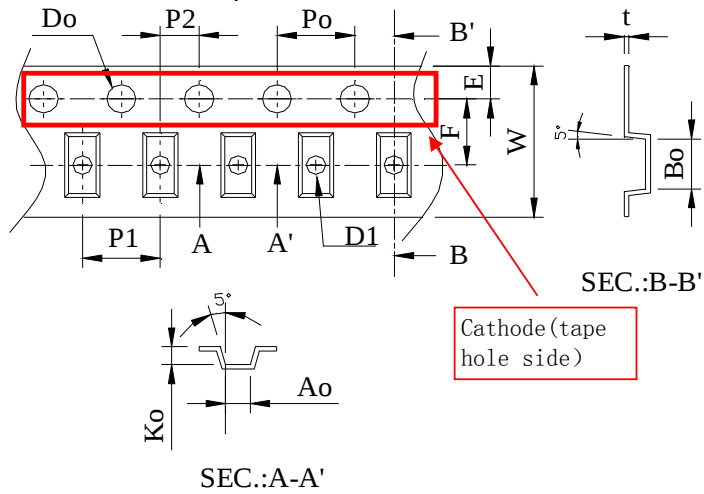


unit: mm

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

Title: Power Diode SMD Package Packing Spec	DOC NO.: WI-258
	Version: 5 Modification: 0
	Page: 4

B. Carrier Tape

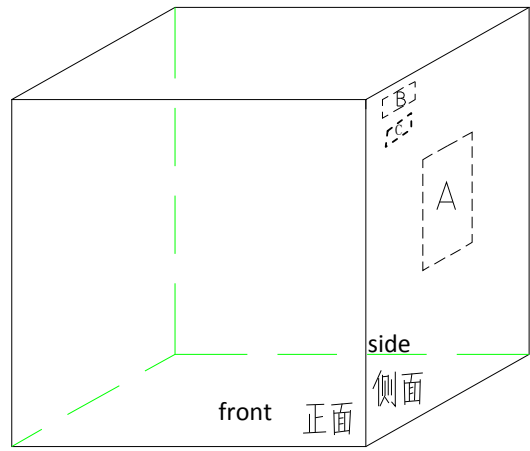
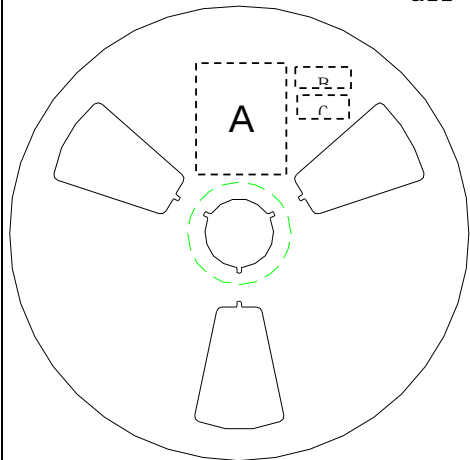


Item	SOD323HE	SOD123FL	SMA-FL	SMB-FL	TO277
W	8±0.3	8±0.3	12±0.3	12±0.3	12±0.3
P1	4±0.1	4±0.1	4±0.1	8±0.1	8±0.1
E	1.75±0.1	1.75±0.1	1.75±0.1	1.75±0.1	1.75±0.1
F	3.5±0.05	3.5±0.05	5.5±0.05	5.5±0.05	5.5±0.05
D0	1.55±0.05	1.55±0.05	1.55±0.05	1.55±0.05	1.55±0.05
D1	1.1±0.1	1.1±0.1	1.5±0.1	1.55±0.05	1.5±0.1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

Title: Power Diode SMD Package Packing Spec	DOC NO.: WI-258	
	Version: 5	Modification: 0
	Page: 5	

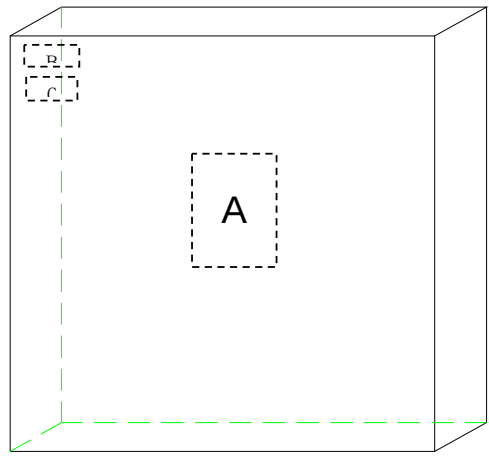
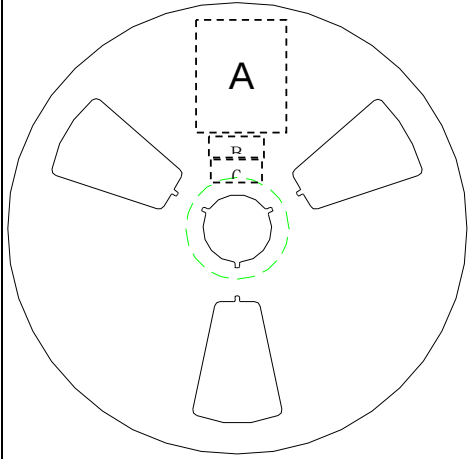
5.2、SMD Power Diode General Packing Spec

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.



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User Direction of Feed

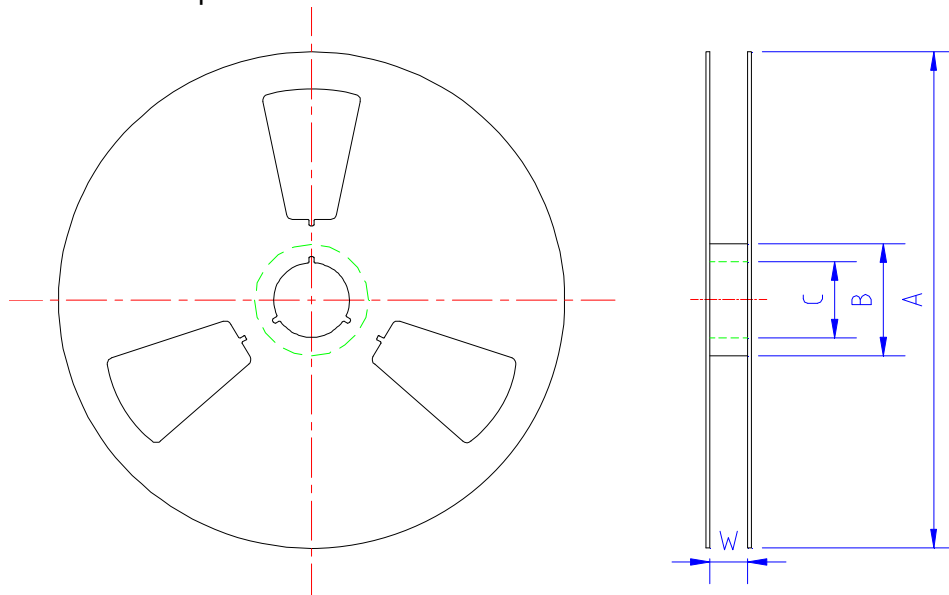
标题: Power Diode SMD Package Packing Spec	DOC NO.: WI-258
	Version: 5 Modification: 0
	Page: 6
C. Label Content : LRC Label P/N → (1P) LPN: SM140A Lot No. → (1T) LOT: 140106049X Date code → (9D) DTE: 1403 Quantity → (Q) QTY: 10000 Two-dimension code Manufacturing Maker LRC lot: 140106049X: 140106---2014/1/6; 049----lot number:49; X: product code Environment Label Halide-free Label	

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5.1 、SMD Packing Reel Spec & Packing Quantity

5.1.1 Reel Packing

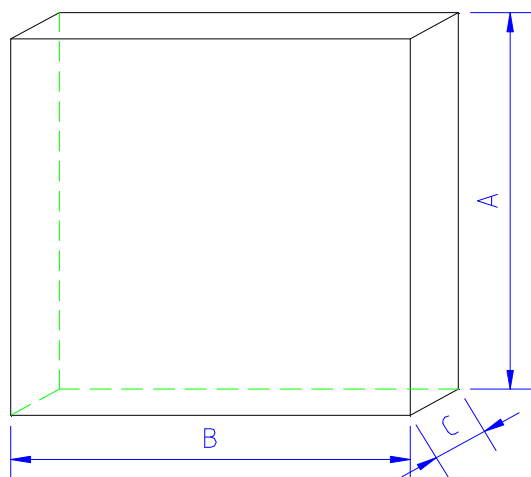
A. Reel Spec



unit: mm

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SOD123FL 7" reel	177.0±2.0	50.0±0.5	13.0±0.5	9.4±1.5	3K
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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

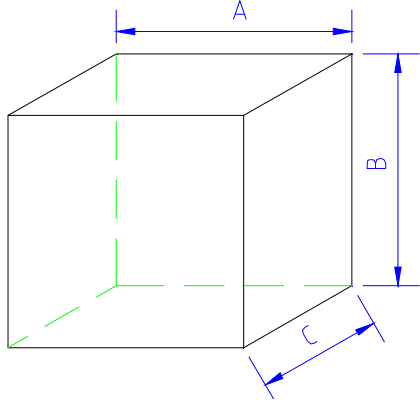
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size	335±5.0	335±2.0	40±1.0

as per above packing

Spec	Q' ty/Box
TO277 13" reel	10K
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	DOC NO.: WI-258
	Page: 3

C. 7" reel packing box



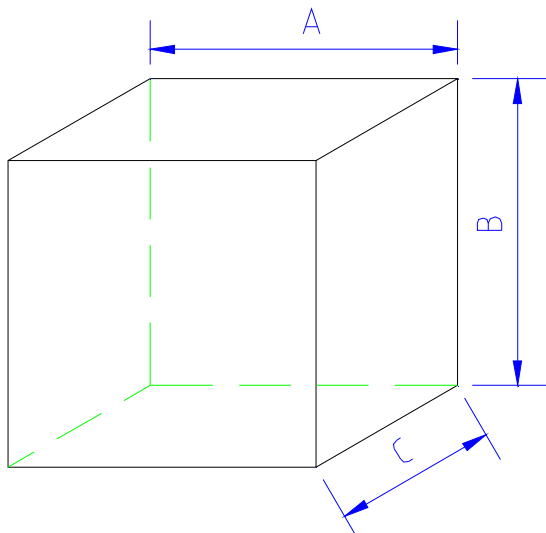
unit: mm

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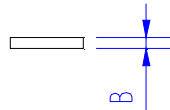
	A	B	C
SMA-FL SOD123FL SOD323HE	455±2.0	400±2.0	410±2.0

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Spec	Q' ty/Carton
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5.1.2 Tape Spec

A. Cover Tape

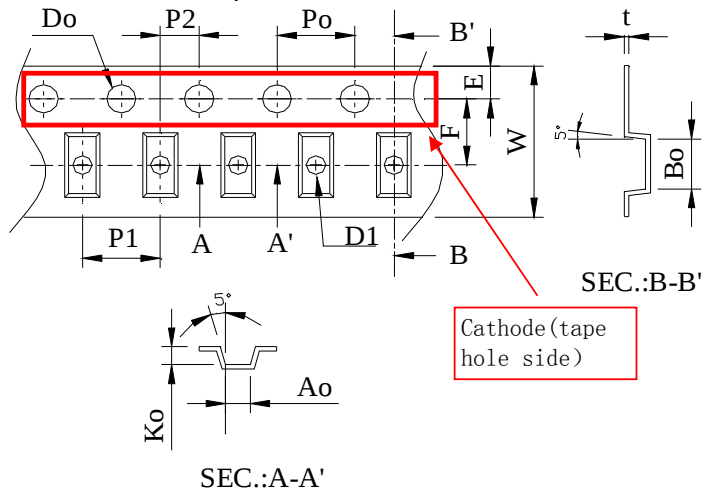


unit: mm

	A	B
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	Version: 5 Modification: 0
	Page: 4

B. Carrier Tape

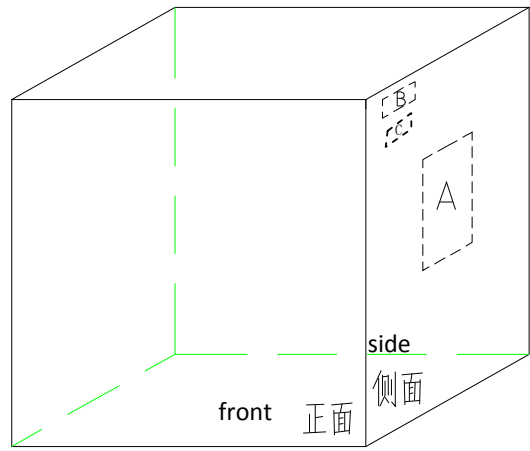
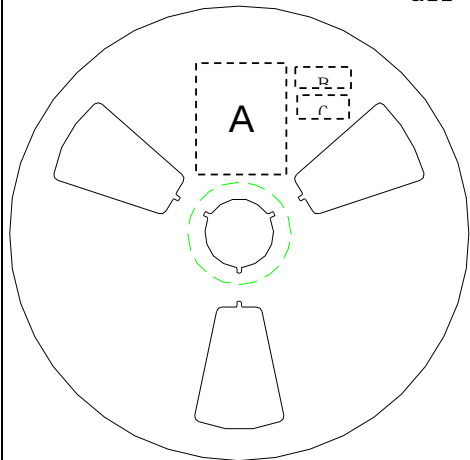


Item	SOD323HE	SOD123FL	SMA-FL	SMB-FL	TO277
W	8±0.3	8±0.3	12±0.3	12±0.3	12±0.3
P1	4±0.1	4±0.1	4±0.1	8±0.1	8±0.1
E	1.75±0.1	1.75±0.1	1.75±0.1	1.75±0.1	1.75±0.1
F	3.5±0.05	3.5±0.05	5.5±0.05	5.5±0.05	5.5±0.05
D0	1.55±0.05	1.55±0.05	1.55±0.05	1.55±0.05	1.55±0.05
D1	1.1±0.1	1.1±0.1	1.5±0.1	1.55±0.05	1.5±0.1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

Title: Power Diode SMD Package Packing Spec	DOC NO.: WI-258	
	Version: 5	Modification: 0
	Page: 5	

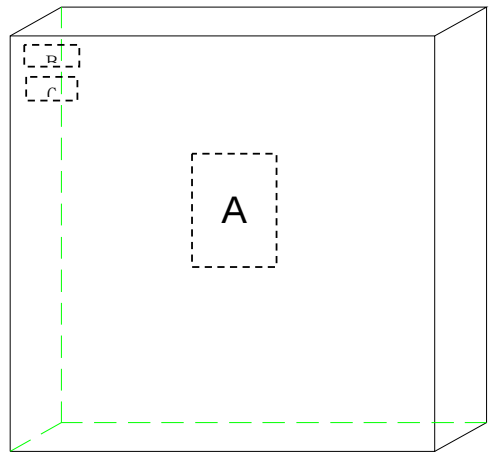
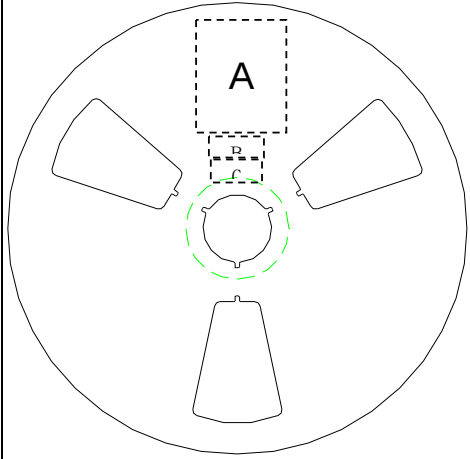
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B. 13" reel



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.



→
User Direction of Feed

标题: Power Diode SMD Package Packing Spec	DOC NO.: WI-258
	Version: 5 Modification: 0
	Page: 6

C. Label Content :
LRC Label

P/N

→

(1P) LPN: SM140A

Lot No.

→

(1T) LOT: 140106049X

Date code

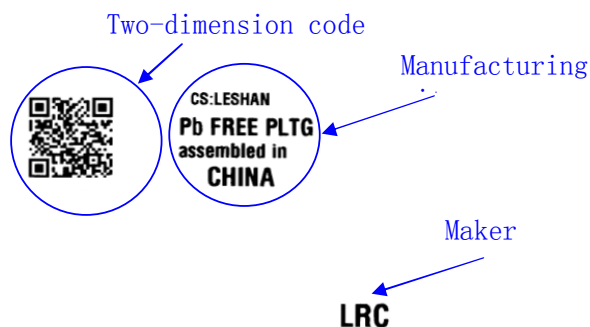
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(9D) DTE: 1403

Quantity

→

(Q) QTY: 10000



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

Environment Label



Halide-free Label



SM120AF thru SM1100AF

4. Update Record

版次	更新记录	更新作者	更新日期
1	第一版	周杰	2014.05.15
2	增加SM145AF	周杰	2014.11.06