

# SZAF \*\*\*A Series

## GLASS PASSIVATED JUNCTION Zener voltage regulator diodes 1.5 Watt Steady State

### Feature

- \* 1.5 W SMA-FL
- \* Zener voltage regulator diodes
- \* Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- \* We declare that the material of product compliance with RoHS requirements.
- \* Guarding for over voltage protection
- \* High temperature soldering guaranteed:  
260°C/10 seconds at terminals
- \* IEC61000-4-2 ESD Air Contact  $\geq \pm 15KV$
- \* MSL: 1

### Mechanical Data

**Case:** JEDEC SMA-FL molded plastic

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

**Polarity:** Color band denoted cathode except Bipolar

**Mounting Position:** Any

**Weight :** Approximated 0.0327 gram

### 1.Electrical Characteristic

Ratings at 25°C ambient temperature unless otherwise specified.

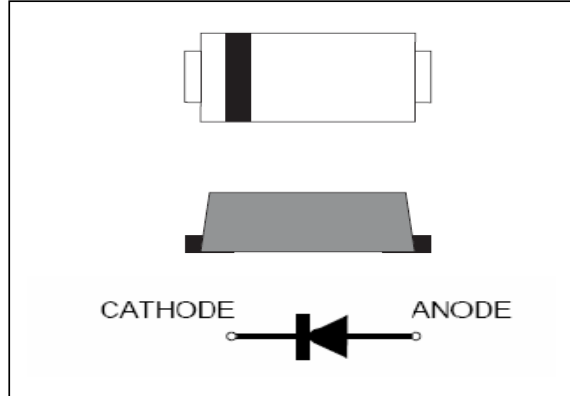
Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

RATING	SYMBOL	VALUE	UNITS
Steady State Power Dissipation at $T_L=75^\circ C$ (Note1)	$P_{M(AV)}$	1.5	Watts
Z-current	$I_Z$	$P_V/V_Z$	mA
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load(JECED Method) (Note 2)	$I_{FSM}$	40	Amps
Operating and Storage Temperature Range	$T_J, T_{STG}$	-50 to +150	°C

NOTES:

1. 8.0mm<sup>2</sup> (.013mm thick) land areas
2. 8.3ms single half sine-wave, duty cycle= 4 pulses per minutes maximum.



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

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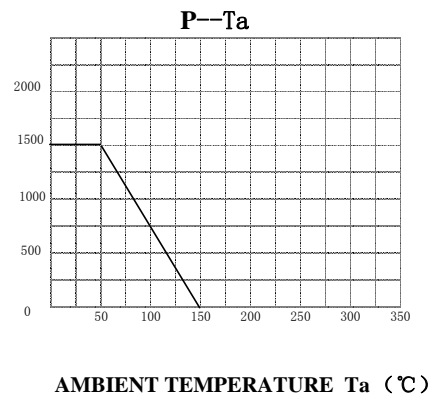
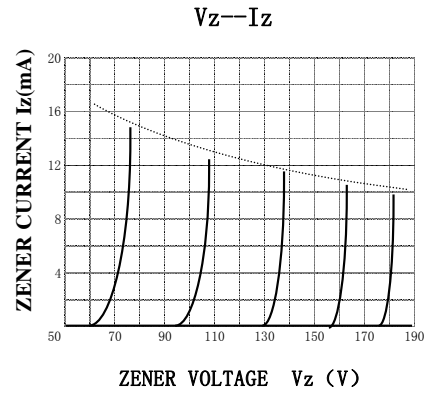
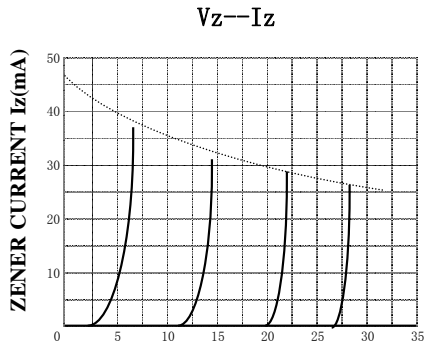
### 2.Product Characteristic

Vz tolerance : ±5%; Ta=25°C Vmax =1.2V @ IF = 200mA P=1 W

Type	Device marking code	Zener	Current	A and B Suffix only			Leakage Current		Surge current	Maximum Regulator Current(2)	
		Voltage	Izt	Zzt @ Izt	Zzk@ Izk	Zzk@ Izk	IR	VR	IR @Tamb = 25 °C	IZM @ Tamb =50 ° C	
		Vz@Izt									
		Volts	mA	Ohms	Ohms	m A	uA Max	Volts	mA	mA	
SZAF5.1A	Z5.1	5.1	49	7	550	1	100	1.0	890	178	
SZAF5.6A	Z5.6	5.6	45	5	600			2.0	810	164	
SZAF6.2A	Z6.2	6.2	41	2	700			3.0	730	146	
SZAF6.8A	Z6.8	6.8	37	4	1300			4	990	200	
SZAF7.5A	Z7.5	7.5	34	4.5	1300			0.5	5	908	182
SZAF8.2A	Z8.2	8.2	31	5.5	1300			0.5	6	825	165
SZAF9.1A	Z9.1	9.1	28	6	1300			0.5	7	750	150
SZAF10A	Z10	10	25	7	1300	0.25	20	7.6	681	137	
SZAF11A	Z11	11	23	8	1300			8.4	621	125	
SZAF12A	Z12	12	21	9	1300			9.1	570	114	
SZAF13A	Z13	13	19	10	1300			9.9	516	104	
SZAF15A	Z15	15	17	14	1300			11.4	456	92	
SZAF16A	Z16	16	15.5	16	1300			12.2	428	86	
SZAF18A	Z18	18	14	20	1300			13.7	375	75	
SZAF20A	Z20	20	12.5	22	1300			15.2	338	68	
SZAF22A	Z22	22	11.5	23	1300			16.7	308	62	
SZAF24A	Z24	24	10.5	25	1300			18.2	285	57	
SZAF27A	Z27	27	9.5	35	1300			20.6	255	51	
SZAF30A	Z30	30	8.5	40	1500			22.8	225	45	
SZAF33A	Z33	33	7.5	45	1500			25.1	203	41	
SZAF36A	Z36	36	7	50	1500			27.4	188	38	
SZAF39A	Z39	39	6.5	60	1500			29.7	173	35	
SZAF43A	Z43	43	6	70	2500			32.7	165	33	
SZAF47A	Z47	47	5.5	80	2500			35.8	143	29	
SZAF51A	Z51	51	5	95	2500	38.8	135	27			
SZAF56A	Z56	56	4.5	110	2500	42.6	120	24			
SZAF62A	Z62	62	4	125	2500	47.1	105	21			
SZAF68A	Z68	68	3.7	150	2500	51.7	98	20			
SZAF75A	Z75	75	3.3	175	2500	56	90	18			
SZAF82A	Z82	82	3	200	3000	62.2	83	17			
SZAF91A	Z91	91	2.8	250	3000	69.2	75	15			
SZAF100A	Z100	100	2.5	350	3000	76	68	14			
SZAF110A	Z110	110	2	550	5000	83	63	12			
SZAF120A	Z120	120	1.5	750	5500	90	57	11			
SZAF130A	Z130	130	1	900	6000	98	51	9			
SZAF150A	Z150	150	1	1200	6500	113	45	9			
SZAF160A	Z160	160	1	1350	7000	120	42	9			
SZAF180A	Z180	180	1	1650	8500	135	38	8			
SZAF200A	Z200	200	1	1950	10000	150	35	6			
SZAF220A	Z220	220	1	2300	12000	165	32	6			

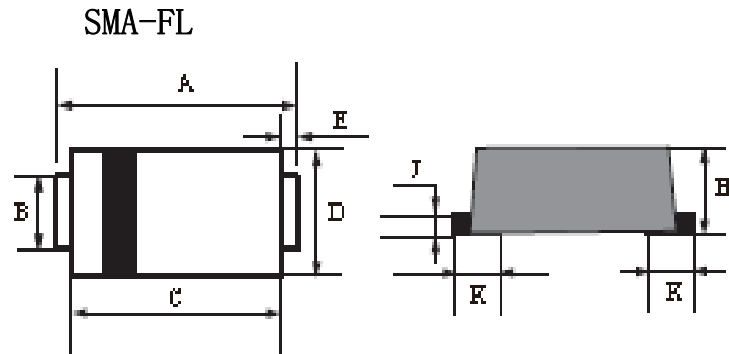
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### 3.Characteristic Curves



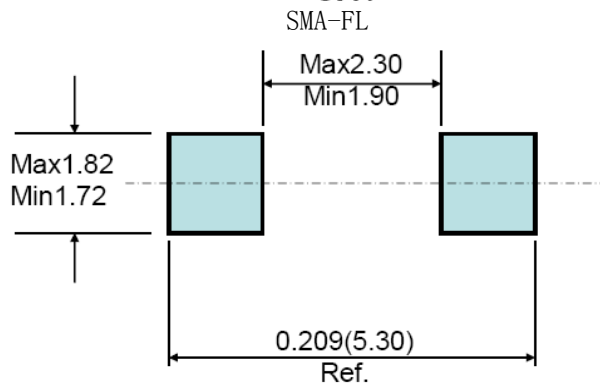
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### 3. dimension:



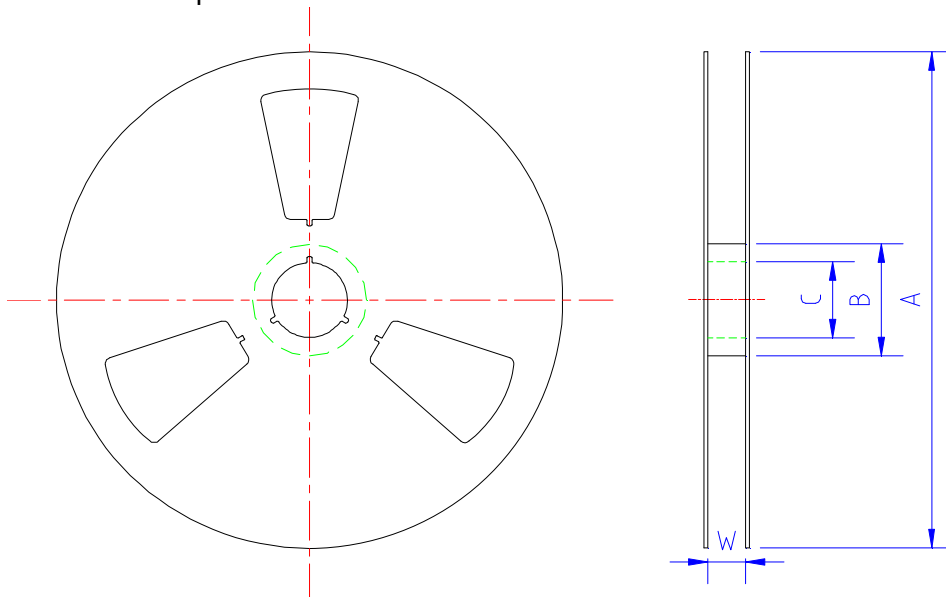
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.4	4.8	0.173	0.189
B	1.3	1.5	0.051	0.059
C	3.3	3.7	0.130	0.146
D	2.3	2.7	0.091	0.106
E	0.90Typ		0.035Typ	
H	0.9	1.2	0.036	0.047
J	0.11	0.21	0.005	0.009

### Mounting Pad Layout



5.1 、 SMD Packing Reel Spec & Packing Quantity

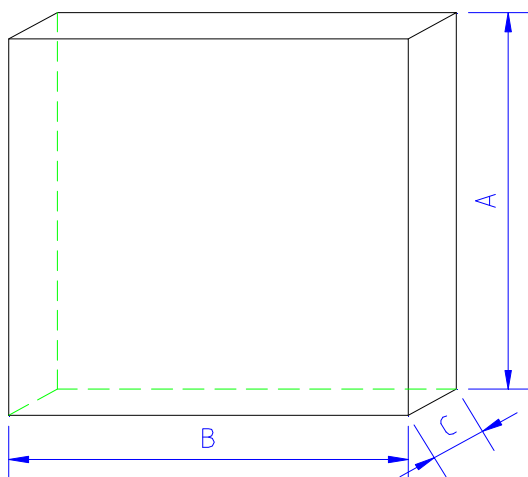
5.1.1 Reel Packing  
A. Reel Spec



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

size	A	B	C
	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

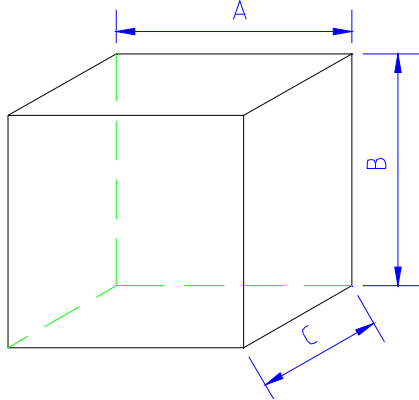
Title:  
Power Diode SMD Package Packing Spec

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C. 7" reel packing box



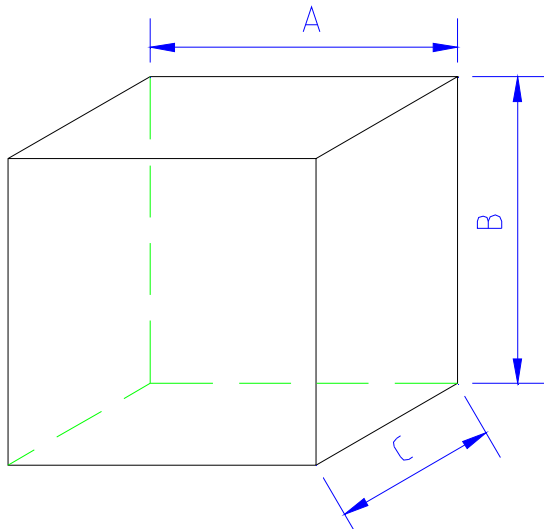
unit: mm

	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

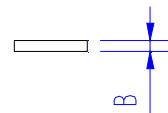
	A	B	C
SMA-FL			
SOD123FL			
SOD323HE	455±2.0	400±2.0	410±2.0

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

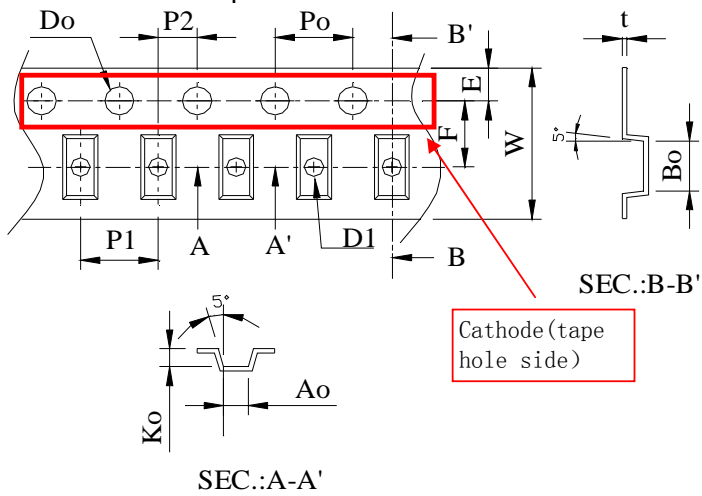
A. Cover Tape



unit: mm

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

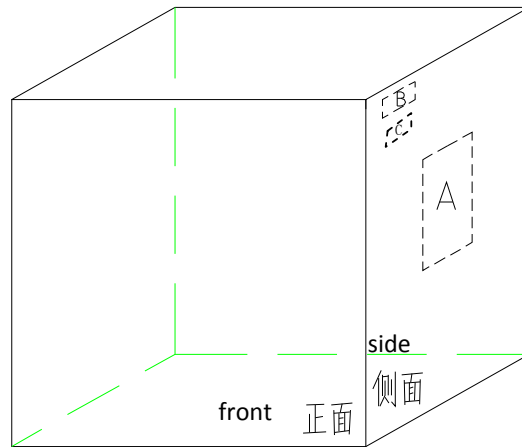
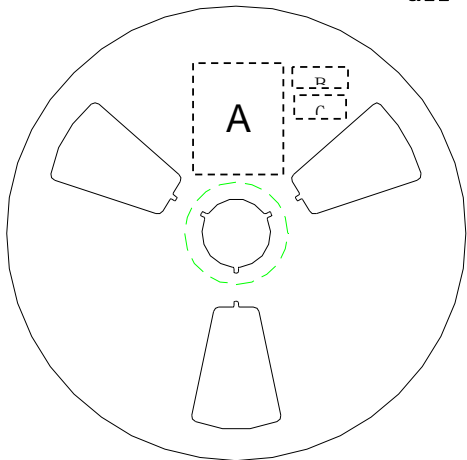
**B. Carrier Tape**



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

5.2、SMD Power Diode General Packing Spec

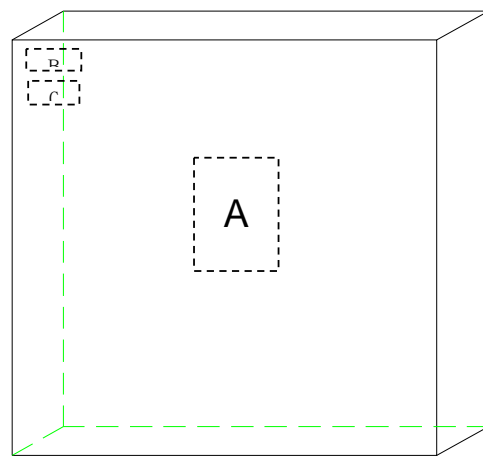
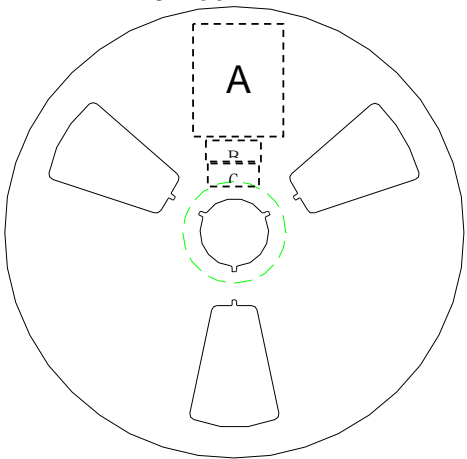
A. 7" reel all labels will be at cathode side of reel ;



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.

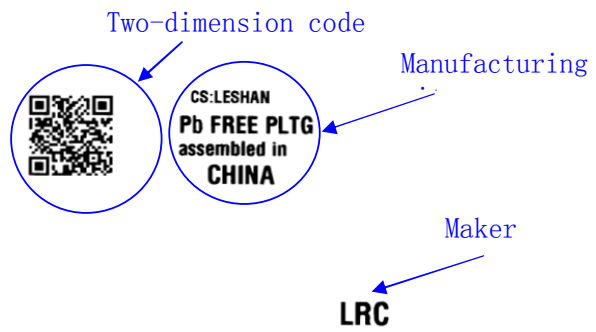


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User Direction of Feed

标题: <b>Power Diode SMD Package Packing Spec</b>	DOC NO.: WI-258
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C. Label Content :  
LRC Label

P/N → (1P) LPN: **SM140A**  
 Lot No. → (1T) LOT: **140106049X**  
 Date code → (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



## SZAF \*\*\*A Series

### 7. Update Record

版次	更新记录	更新作者	更新日期
1	第一版	周杰	2014.05.22
2	增加5.1~5.6V	周杰	2014.08.14
3	增加SZAF220A	周杰	2014.11.14