

SMBF5913BAT THRU SMBF5956BAT

SILICON PLANAR ZENER DIODES

Power Dissipation-3W

Zener Voltage-3.3V to 200V

FEATURES

- ◆ For surface mount applications
- ◆ Maximum power dissipation: 3W
- ◆ Zener voltage range: 3.3V to 200V

MECHANICAL DATA

- ◆ Case: SMBF molded plastic body
- ◆ Terminals: Solderable per MIL-STD-750 , Method 2026
- ◆ Weight: Approximated 0.027 grams

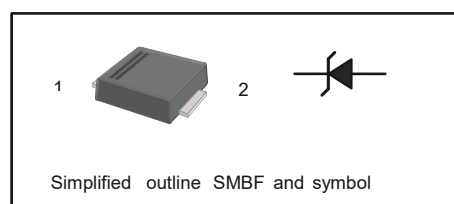
PART NUMBER EXPLANATION

Example part number : SMBF5913BAT

- ◆ SMBF : package
- ◆ 5913 : series number
- ◆ B : indicates $\pm 5\%$ tolerance
- ◆ AT : brand “AGERTECH”

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS($T_A=25^{\circ}\text{C}$)

Ratings at 25°C ambient temperature unless otherwise specified.

PARAMETER	SYMBOL	VALUE	UNIT
Maximum Forward Voltage at $I_F=0.2\text{A}$	V_F	1.2	V
Power Dissipation at $T_C=75^{\circ}\text{C}$	P_D	3	W
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	25	$^{\circ}\text{C/W}$
Junction Temperature Range	T_J	-55 to +150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^{\circ}\text{C}$

Dated: 10/2016
Rev:2.0

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CHARACTERISTICS at T_A=25°C

Type	Zener Voltage Range (Note)				Dynamic Impedance	Reverse Current		Maximum Zener Current
	V _{ZT} (at I _{ZT})			at I _{ZT}	Z _{ZT} (at I _{ZT})	I _R	at V _R	I _{ZM} (mA)
	Min.(V)	Nom.(V)	Max.(V)	(mA)	Max. (Ω)	Max.(μA)	(V)	
SMBF5913BAT	3.10	3.3	3.50	114	10	100	1	454
SMBF5914BAT	3.40	3.6	3.80	104	9.0	75	1	416
SMBF5915BAT	3.70	3.9	4.10	96	7.5	25	1	384
SMBF5916BAT	4.06	4.3	4.56	87	6.0	5	1	348
SMBF5917BAT	4.50	4.7	4.93	80	5.0	5	1	319
SMBF5918BAT	4.84	5.1	5.36	74	4.0	5	2	294
SMBF5919BAT	5.32	5.6	5.92	67	2.0	5	3	267
SMBF5920BAT	5.86	6.2	6.51	61	2.0	5	4	241
SMBF5921BAT	6.46	6.8	7.18	55	2.5	5	5	220
SMBF5922BAT	7.12	7.5	7.88	50	3.0	5	6	200
SMBF5923BAT	7.79	8.2	8.67	46	3.5	5	6	182
SMBF5924BAT	8.60	9.1	9.59	41	4.0	5	7	164
SMBF5925BAT	9.50	10	10.5	38	4.5	5	7	150
SMBF5926BAT	10.4	11	11.6	34	5.5	1	8	136
SMBF5927BAT	11.4	12	12.6	31	6.5	1	9	125
SMBF5928BAT	12.4	13	14.1	29	7.0	1	10	115
SMBF5929BAT	13.8	15	15.8	25	9.0	1	11	100
SMBF5930BAT	15.2	16	17.1	23	10	1	12	93
SMBF5931BAT	16.8	18	19.2	21	12	1	13	83
SMBF5932BAT	19.0	20	21.2	19	14	1	15	75
SMBF5933BAT	20.8	22	23.3	17	18	1	17	68
SMBF5934BAT	22.8	24	26.0	16	19	1	19	62
SMBF5935BAT	25.3	27	28.9	14	23	1	21	55
SMBF5936BAT	28.2	30	32.0	12.5	26	1	23	50
SMBF5937BAT	31.3	33	34.9	11.4	33	1	25	45
SMBF5938BAT	34.2	36	37.9	10.4	38	1	27	41
SMBF5939BAT	37.2	39	41.5	9.6	45	1	30	38
SMBF5940BAT	40.9	43	45.6	8.7	53	1	33	34
SMBF5941BAT	44.9	47	49.8	8.0	67	1	36	31
SMBF5942BAT	48.6	51	54.0	7.3	70	1	39	29
SMBF5943BAT	53.6	56	58.8	6.7	86	1	42	26
SMBF5944BAT	58.9	62	65.6	6.0	100	1	47	24

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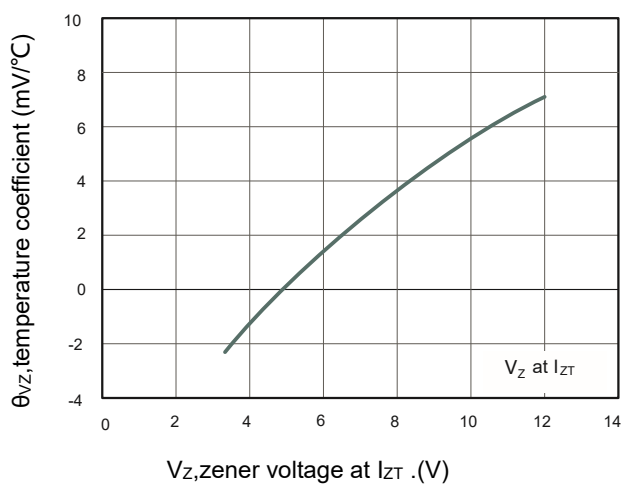
SMBF5945BAT	64.6	68	71.7	5.5	120	1	52	22
SMBF5946BAT	71.2	75	78.8	5.0	140	1	57	20
SMBF5947BAT	77.9	82	87.0	4.6	160	1	62	18
SMBF5948BAT	86.0	91	96.0	4.1	200	1	69	16
SMBF5949BAT	95.0	100	105	3.7	250	1	76	15
SMBF5950BAT	104	110	116	3.4	300	1	84	13
SMBF5951BAT	114	120	127	3.1	380	1	91	12
SMBF5952BAT	125	135	142	2.8	470	1	100	11
SMBF5953BAT	140	150	157	2.5	600	1	110	10
SMBF5954BAT	155	165	172	2.3	720	1	120	9.0
SMBF5955BAT	170	180	191	2.1	900	1	135	8.0
SMBF5956BAT	189	200	211	1.9	1200	1	150	7.5

Note: V_{ZT} is tested with 20ms pulse .

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RATINGS AND CHARACTERISTIC CURVES

**Fig.1 Temperature coefficient range
(2V to 12V)**



**Fig.2 Temperature coefficient range
(10V to 200V)**

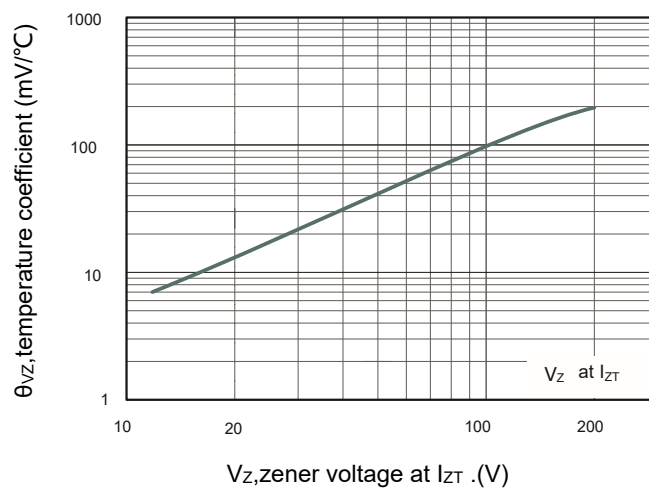
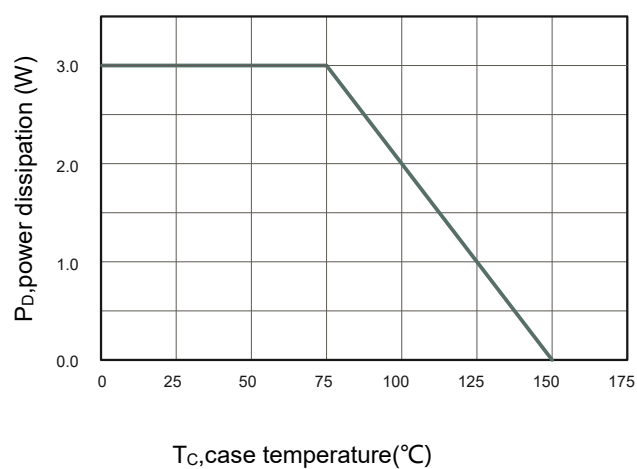


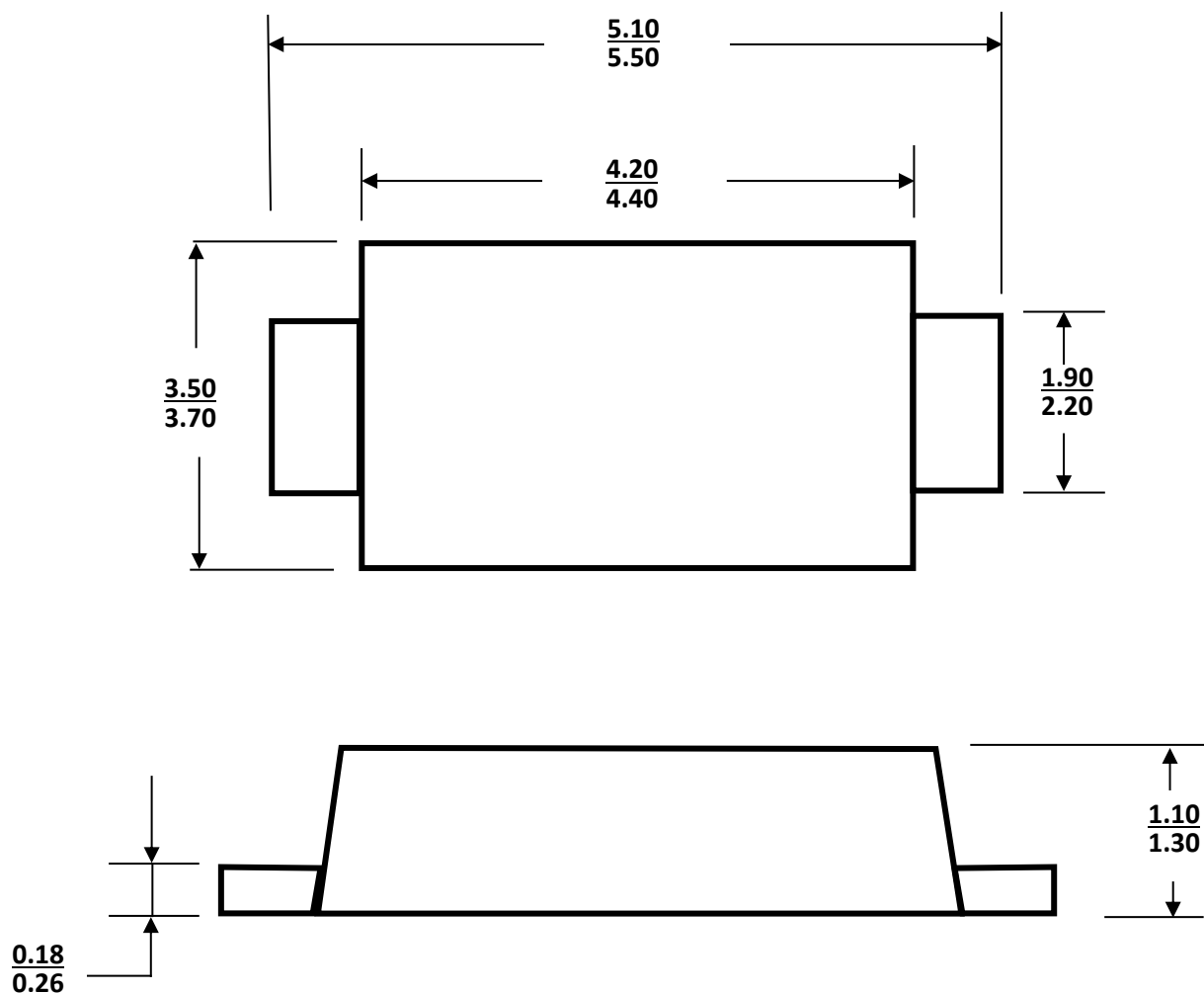
Fig.3 Maximum power derating



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PACKAGE OUTLINE

SMBF



Dimensions in millimeters

ORDERING INFORMATION

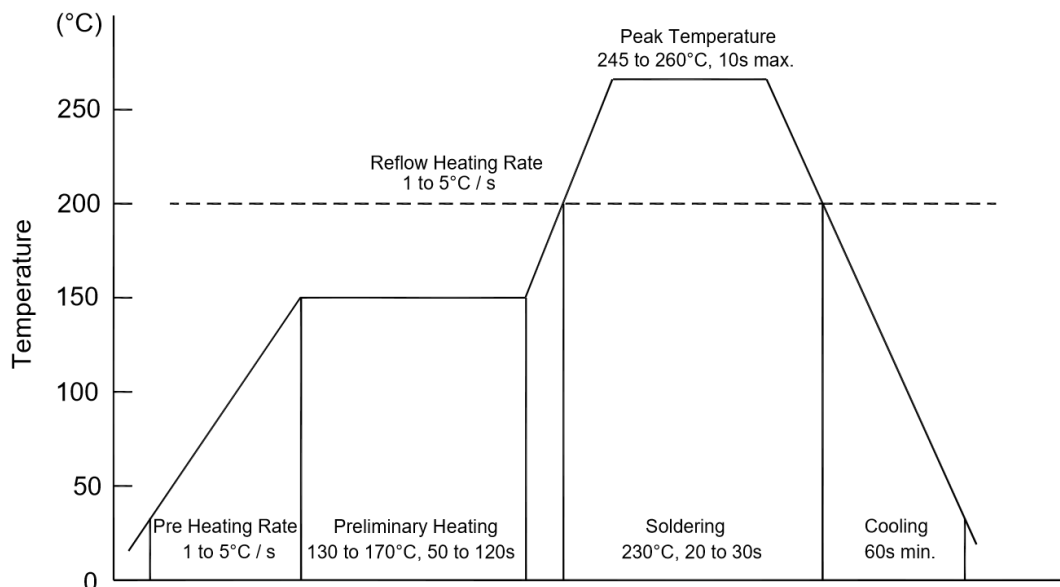
Device	Package	Shipping
SMBF5913BAT thru SMBF5956BAT	SMBF	5,000/Tape & Reel (13 inches)

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CONDITION OF SOLDERING FOR DIODE

Recommended condition of reflow soldering



Recommended peak temperature is over 245 °C. If peak temperature is below 245 °C, you may adjust the following parameters:

- Time length of peak temperature (longer)
- Time length of soldering (longer)
- Thickness of solder paste (thicker)

Condition of hand soldering

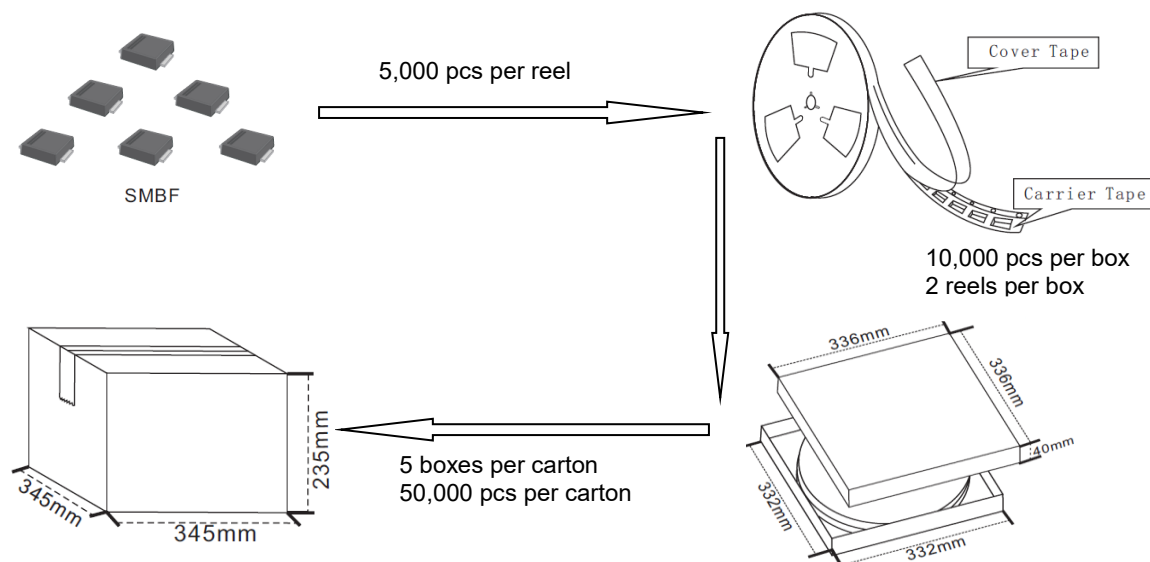
- Temperature: 370 °C
- Time: 3s max.
- Times: one time

Remark: Lead free solder paste (96.5Sn/3.0Ag/0.5Cu)

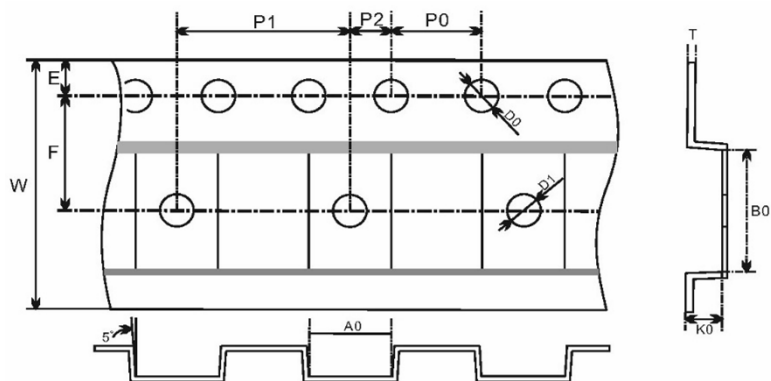
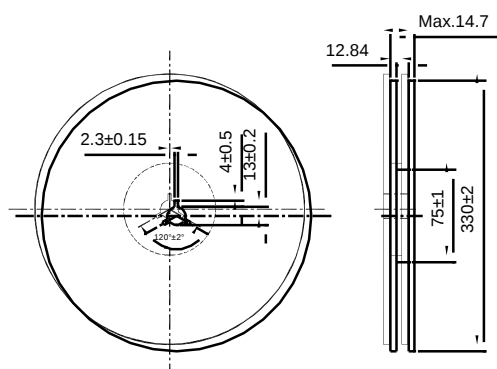
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PACKAGING SPECIFICATION FOR SMBF

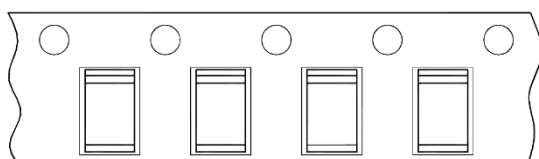
The method of packaging and dimension are shown as below figure. (Dimension in mm)



Tape and reel data (Units: mm)



Direction in tape



Cathode

Anode

SMBF					
A0	B0	K0	P0	P1	P2
3.8±0.1	5.75±0.1	1.4±0.1	4.00±0.1	8.0±0.1	2.00±0.1
T	E	F	D0	D1	W
0.25±0.02	1.75±0.1	5.5±0.1	1.55±0.05	1.55±0.05	12.0±0.1

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