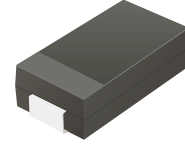


1SMB5913B-HF Thru. 1SMB5956B-HF

RoHS Device
Halogen Free

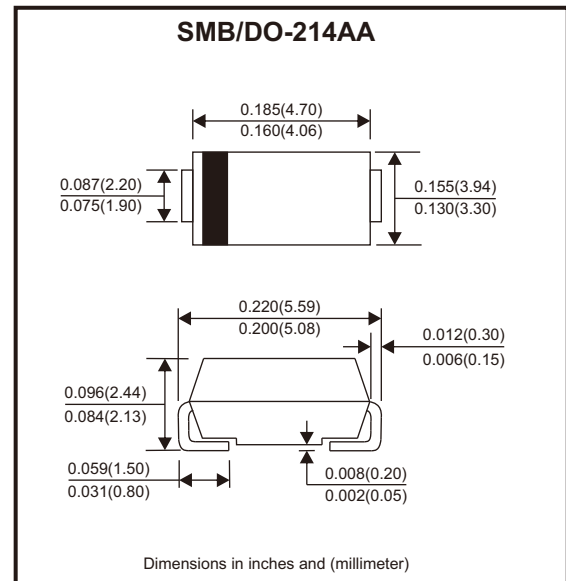


Features

- Total power dissipation: Max. 3W.
- Wide zener reverse voltage range 3.3V to 200V.
- Plastic package suitable for surface mounted design.
- Tight voltage tolerance: $\pm 5\%$.

Mechanical data

- Case: SMB/DO-214AA, molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.
- Polarity: Indicated by cathode band.
- Mounting position: Any.



Circuit Diagram



Maximum Rating (at $T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
DC power dissipation @ $T_L=75^\circ\text{C}$, measure at zero lead length (Note 1) derate above 75°C	P_D	3	W
		40	mW/ $^\circ\text{C}$
Maximum steady state power dissipation @ $T_A=25^\circ\text{C}$ derate above 25°C	P_D	550	mW
		4.4	mW/ $^\circ\text{C}$
Thermal resistance, junction to ambient	$R_{\theta JA}$	226	$^\circ\text{C}/\text{W}$
Thermal resistance, junction to lead	$R_{\theta JL}$	25	$^\circ\text{C}/\text{W}$
Operating junction temperature range	T_J	-55 to +150	$^\circ\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^\circ\text{C}$

Note: 1. Mounted on Cu-Pad size 5mm x 5mm on PCB.

Electrical Characteristics (at Ta=25 °C unless otherwise specified)

(TL=30°C unless otherwise noted, VF=1.5V Max. @ IF=200mA(DC) for all types)

Part Number	Nominal Zener Voltage			Zener Impedance				Leakage Current		Maximum DC Zener Current	Marking Code
	Vz (V)			Iz	Zzt@Izt	Zzk@Izk		Ir@Vr			
	Min	Nom	Max	(mA)	(Ω)	(Ω)	(mA)	(μA)	(V)	Izm (mA) (DC)	
1SMB5913B-HF	3.13	3.3	3.47	113.6	10	500	1	100	1	454	913B
1SMB5914B-HF	3.42	3.6	3.78	104.2	9	500	1	75	1	416	914B
1SMB5915B-HF	3.70	3.9	4.10	96.1	7.5	500	1	25	1	384	915B
1SMB5916B-HF	4.08	4.3	4.52	87.2	6	500	1	5	1	348	916B
1SMB5917B-HF	4.46	4.7	4.94	79.8	5	500	1	5	1.5	319	917B
1SMB5918B-HF	4.84	5.1	5.36	73.5	4	350	1	5	2	294	918B
1SMB5919B-HF	5.32	5.6	5.88	66.9	2	250	1	5	3	267	919B
1SMB5920B-HF	5.89	6.2	6.51	60.5	2	200	1	5	4	241	920B
1SMB5921B-HF	6.46	6.8	7.14	55.1	2.5	200	1	5	5.2	220	921B
1SMB5922B-HF	7.12	7.5	7.88	50.0	3	400	0.5	5	6	200	922B
1SMB5923B-HF	7.79	8.2	8.61	45.7	3.5	400	0.5	5	6.5	182	923B
1SMB5924B-HF	8.64	9.1	9.56	41.2	4	500	0.5	5	7	164	924B
1SMB5925B-HF	9.50	10	10.50	37.5	4.5	500	0.25	5	8	150	925B
1SMB5926B-HF	10.45	11	11.55	34.1	5.5	550	0.25	1	8.4	136	926B
1SMB5927B-HF	11.40	12	12.60	31.2	6.5	550	0.25	1	9.1	125	927B
1SMB5928B-HF	12.35	13	13.65	28.8	7	550	0.25	1	9.9	115	928B
1SMB5929B-HF	14.25	15	15.75	25.0	9	600	0.25	1	11.4	100	929B
1SMB5930B-HF	15.20	16	16.80	23.4	10	600	0.25	1	12.2	93	930B
1SMB5931B-HF	17.10	18	18.90	20.8	12	650	0.25	1	13.7	83	931B
1SMB5932B-HF	19.00	20	21.00	18.7	14	650	0.25	1	15.2	75	932B
1SMB5933B-HF	20.90	22	23.10	17.0	17.5	650	0.25	1	16.7	68	933B
1SMB5934B-HF	22.80	24	25.20	15.6	19	700	0.25	1	18.2	62	934B
1SMB5935B-HF	25.65	27	28.35	13.9	23	700	0.25	1	20.6	55	935B
1SMB5936B-HF	28.50	30	31.50	12.5	28	750	0.25	1	22.8	50	936B
1SMB5937B-HF	31.35	33	34.65	11.4	33	800	0.25	1	25.1	45	937B
1SMB5938B-HF	34.20	36	37.80	10.4	38	850	0.25	1	27.4	41	938B
1SMB5939B-HF	37.05	39	40.95	9.6	45	900	0.25	1	29.7	38	939B
1SMB5940B-HF	40.85	43	45.15	8.7	53	950	0.25	1	32.7	34	940B
1SMB5941B-HF	44.65	47	49.35	8.0	67	1000	0.25	1	35.8	31	941B
1SMB5942B-HF	48.45	51	53.55	7.3	70	1100	0.25	1	38.8	29	942B
1SMB5943B-HF	53.20	56	58.80	6.7	86	1300	0.25	1	42.6	26	943B
1SMB5944B-HF	58.90	62	65.10	6.0	100	1500	0.25	1	47.1	24	944B
1SMB5945B-HF	64.60	68	71.40	5.5	120	1700	0.25	1	51.7	22	945B
1SMB5946B-HF	71.25	75	78.75	5.0	140	2000	0.25	1	56	20	946B
1SMB5947B-HF	77.90	82	86.10	4.6	160	2500	0.25	1	62.2	18	947B
1SMB5948B-HF	86.45	91	95.55	4.1	200	3000	0.25	1	69.2	16	948B
1SMB5949B-HF	95.00	100	105.00	3.7	250	3100	0.25	1	76	15	949B
1SMB5950B-HF	104.50	110	115.50	3.4	300	4000	0.25	1	83.6	13	950B

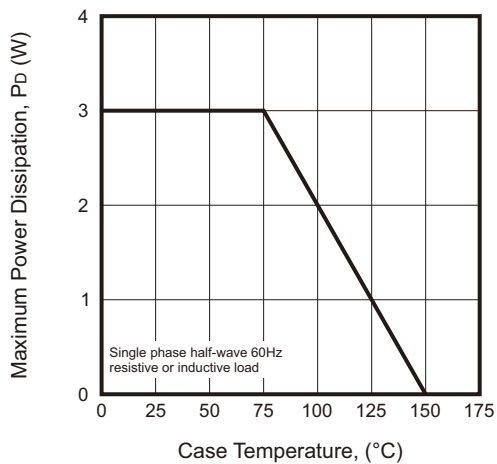
Electrical Characteristics (at Ta=25 °C unless otherwise specified)

(TL=30°C unless otherwise noted, VF=1.5V Max. @ IF=200mA(DC) for all types)

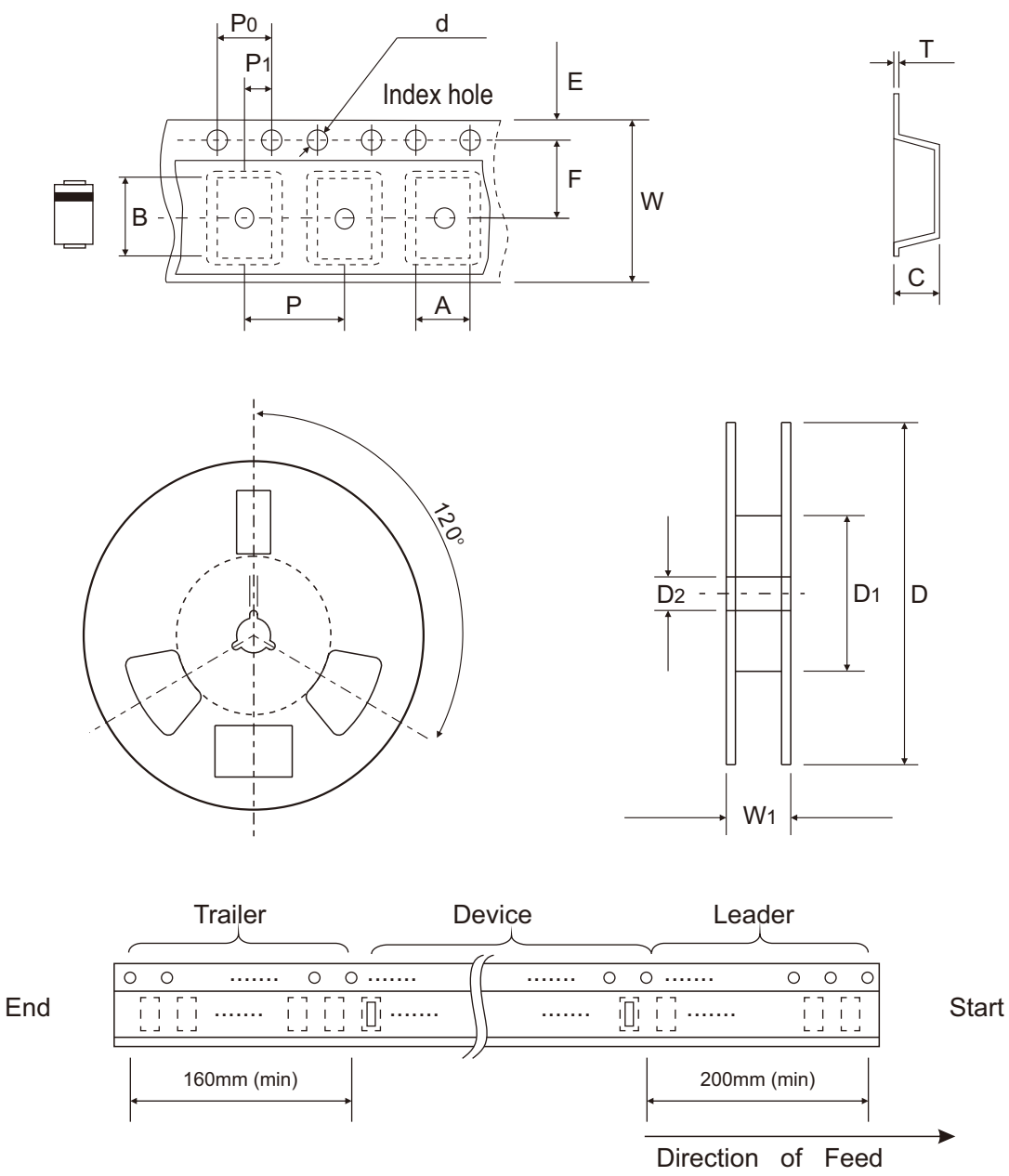
Part Number	Nominal Zener Voltage			Zener Impedance				Leakage Current		Maximum DC Zener Current	Marking Code
	V _z (V)			I _z	Z _{zT} @I _{zT}	Z _{zK} @I _{zK}		I _r @V _r			
	Min	Nom	Max	(mA)	(Ω)	(Ω)	(mA)	(μA)	(V)	I _{zM} (mA) (DC)	
1SMB5951B-HF	114.00	120	126.00	3.1	380	4500	0.25	1	91.2	12	951B
1SMB5952B-HF	123.50	130	136.50	2.9	450	5000	0.25	1	98.8	11	952B
1SMB5953B-HF	142.50	150	157.50	2.5	600	6000	0.25	1	114	10	953B
1SMB5954B-HF	152.00	160	168.00	2.3	700	6500	0.25	1	121.6	9	954B
1SMB5955B-HF	171.00	180	189.00	2.1	900	7000	0.25	1	136.8	8	955B
1SMB5956B-HF	190.00	200	210.00	1.9	1200	8000	0.25	1	152	7	956B

Typical Rating and Characteristic Curves (1SMB59xxB-HF Series)

Fig.1 - Forward Current Derating Curves



Reel Taping Specification

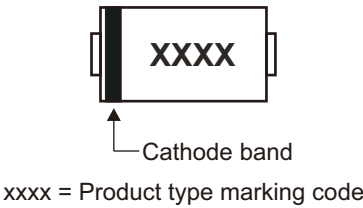


SMB/ DO-214AA	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.80 ± 0.20	5.40 ± 0.20	2.45 ± 0.20	1.55 ± 0.20	330.00 ± 2.00	100.00 ± 1.00	13.00 ± 0.20
	(inch)	0.150 ± 0.008	0.213 ± 0.008	0.096 ± 0.008	0.061 ± 0.008	12.992 ± 0.079	3.937 ± 0.039	0.512 ± 0.008

SMB/ DO-214AA	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.20	5.50 ± 0.20	8.00 ± 0.20	4.00 ± 0.20	2.00 ± 0.20	0.25 ± 0.20	12.00 ± 0.20	18.00 + 2.00 - 1.00
	(inch)	0.069 ± 0.008	0.217 ± 0.008	0.315 ± 0.008	0.157 ± 0.008	0.079 ± 0.008	0.010 ± 0.008	0.472 ± 0.008	0.709 + 0.079 - 0.039

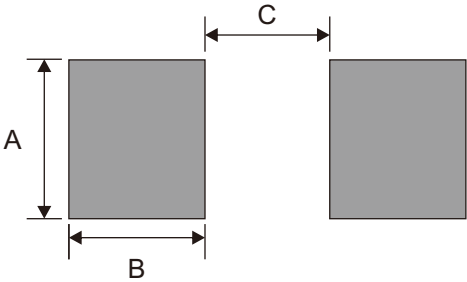
Marking Code

Part Number	Marking Code
1SMB59xxB-HF Series	See Page 2~3



Suggested P.C.B. PAD Layout

SIZE	SMB/DO-214AA	
	(mm)	(inch)
A	2.80	0.110
B	2.40	0.094
C	2.20	0.087



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SMB/ DO-214AA	3,000	13