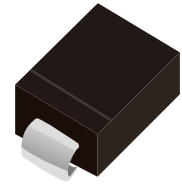
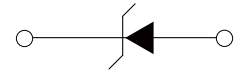


FEATURES

- | A complete voltage range - 3.3 to 200 volts
- | Flat handling surface for accurate placement
- | Package design for top side or bottom circuit board mounting
- | High forward surge current capability



DO-214AA(SMB)



Schematic Symbol

MECHANICAL DATA

- | Case: Void - free, transfer - molded plastic
- | Terminal: All external surfaces are corrosion resistant with readily solderable leads
- | Polarity: Color band denotes cathode end

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

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

Parameter	Symbol	Value	Unit
DC Power Dissipation @TL=75°C, Measured at Zero Lead Length Derate above 75°C	P_D	3	W
		40	mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-65 to +150	°C

ELECTRICAL CHARACTERISTICS

Part Number	Device Marking Code	Zener Voltage @I _T			Test Current	Zener Impedance			Leakage Current		I _{ZM}
		V _Z (V)				Z _{ZT} @I _{ZT}	Z _{ZK} @I _{ZK}		I _R @V _R		
		Min	Nom	Max		I _{ZT} (mA)	(Ω)	(Ω)	mA	μA	
1SMB5913B	913B	3.13	3.3	3.47	113.6	10	500	1	100	1	454
1SMB5914B	914B	3.42	3.6	3.78	104.2	9	500	1	75	1	416
1SMB5915B	915B	3.9	3.7	4.1	96.1	7.5	500	1	25	1	384
1SMB5916B	916B	4.3	4.08	4.52	87.2	6	500	1	5	1	348
1SMB5917B	917B	4.7	4.46	4.94	79.8	5	500	1	5	1.5	319
1SMB5918B	918B	5.1	4.84	5.36	73.5	4	350	1	5	2	294
1SMB5919B	919B	5.6	5.32	5.88	66.9	2	250	1	5	3	267
1SMB5920B	920B	6.2	5.89	6.51	60.5	2	200	1	5	4	241
1SMB5921B	921B	6.8	6.46	7.14	55.1	2.5	200	1	5	5.2	220
1SMB5922B	922B	7.5	7.12	7.88	50	3	400	0.5	5	6	200
1SMB5923B	923B	8.2	7.79	8.61	45.7	3.5	400	0.5	5	6.5	182
1SMB5924B	924B	9.1	8.64	9.56	41.2	4	500	0.5	5	7	164
1SMB5925B	925B	10	9.5	10.5	37.5	4.5	500	0.25	5	8	150
1SMB5926B	926B	11	10.45	11.55	34.1	5.5	550	0.25	1	8.4	136
1SMB5927B	927B	12.0	11.4	12.6	31.2	6.5	550	0.25	1	9.1	125
1SMB5928B	928B	13.0	12.35	13.65	28.8	7	550	0.25	1	9.9	115
1SMB5929B	929B	15.0	14.25	15.75	25	9	600	0.25	1	11.4	100
1SMB5930B	930B	16.0	15.2	16.8	23.4	10	600	0.25	1	12.2	93
1SMB5931B	931B	18.0	17.1	18.9	20.8	12	650	0.25	1	13.7	83
1SMB5932B	932B	20	19	21	18.7	14	650	0.25	1	15.2	75
1SMB5933B	933B	22	20.9	23.1	17	17.5	650	0.25	1	16.7	68
1SMB5934B	934B	24	22.8	25.2	15.6	19	700	0.25	1	18.2	62
1SMB5935B	935B	27	25.65	28.35	13.9	23	700	0.25	1	20.6	55
1SMB5936B	936B	30	28.5	31.5	12.5	28	750	0.25	1	22.8	50
1SMB5937B	937B	33	31.35	34.65	11.4	33	800	0.25	1	25.1	45
1SMB5938B	938B	36	34.2	37.8	10.4	38	850	0.25	1	27.4	41
1SMB5939B	939B	39	37.05	40.95	9.6	45	900	0.25	1	29.7	38
1SMB5940B	940B	43	40.85	45.15	8.7	53	950	0.25	1	32.7	34
1SMB5941B	941B	47	44.65	49.35	8	67	1000	0.25	1	35.8	31
1SMB5942B	942B	51	48.45	53.55	7.3	70	1100	0.25	1	38.8	29
1SMB5943B	943B	56	53.2	58.8	6.7	86	1300	0.25	1	42.6	26

Part Number	Device Marking Code	Zener Voltage @I _T			Test Current	Zener Impedance			Leakage Current		I _{ZM}
		V _Z (V)				Z _{ZT} @I _{ZT}	Z _{ZK} @I _{ZK}		I _R @V _R		
		Min	Nom	Max	I _{ZT} (mA)	Ω	Ω	mA	μA	V	
1SMB5944B	944B	62	58.9	65.1	6	100	1500	0.25	1	47.1	24
1SMB5945B	945B	68	64.6	71.4	5.5	120	1700	0.25	1	51.7	22
1SMB5946B	946B	75	71.25	78.75	5	140	2000	0.25	1	56	20
1SMB5947B	947B	82	77.9	86.1	4.6	160	2500	0.25	1	62.2	18
1SMB5948B	948B	91	86.45	95.55	4.1	200	3000	0.25	1	69.2	16
1SMB5949B	949B	100	95	105	3.7	250	3100	0.25	1	76	15
1SMB5950B	950B	110	104.5	115.5	3.4	300	4000	0.25	1	83.6	13
1SMB5951B	951B	120	114	126	3.1	380	4500	0.25	1	91.2	12
1SMB5952B	952B	130	123.5	136.5	2.9	450	5000	0.25	1	98.8	11
1SMB5953B	953B	150	142.5	157.5	2.5	600	6000	0.25	1	114	10
1SMB5954B	954B	160	152	168	2.3	700	6500	0.25	1	121.6	9
1SMB5955B	955B	180	171	189	2.1	900	7000	0.25	1	136.8	8
1SMB5956B	956B	200	190	210	1.9	1200	8000	0.25	1	152	7

Notes: Standard voltage tolerance is $\pm 5\%$.

CHARACTERISTIC CURVES

Fig.1 Steady State Power Derating

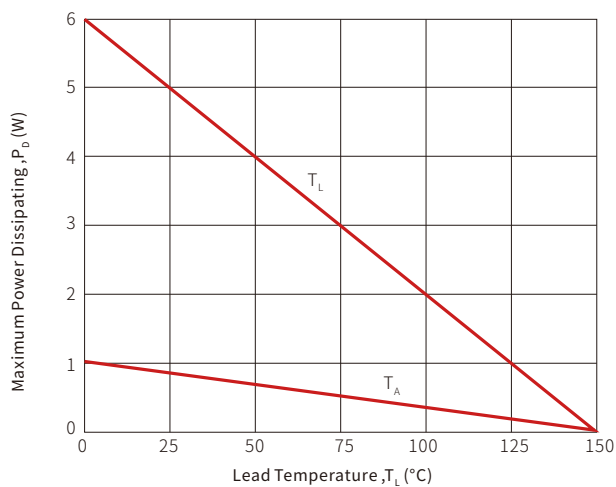


Fig.2 Maximum Surge Power

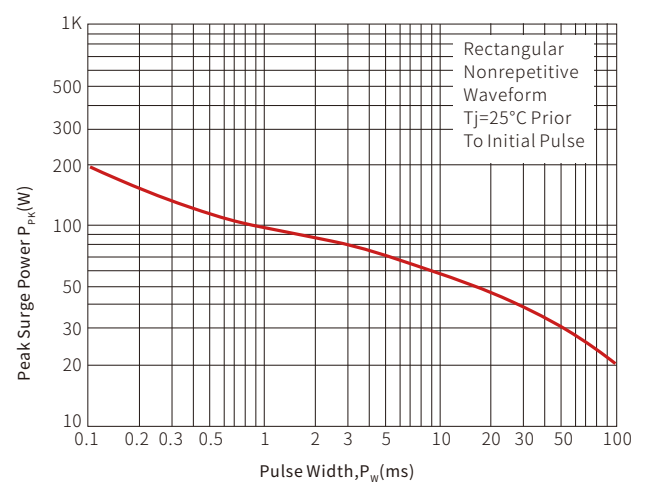


Fig.3 Zener Voltage - To 12V

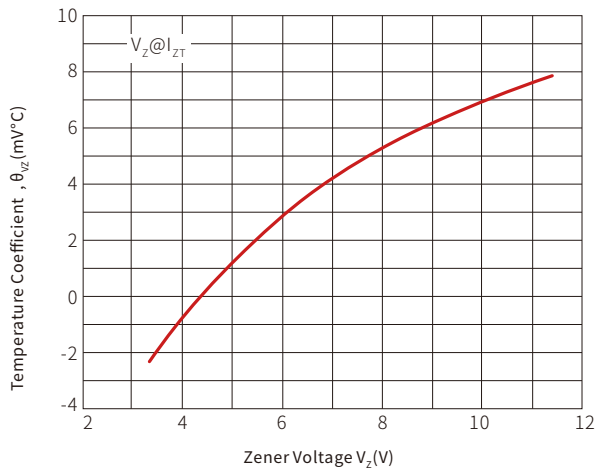


Fig.4 $V_Z = 3.3V$ thru 10 V

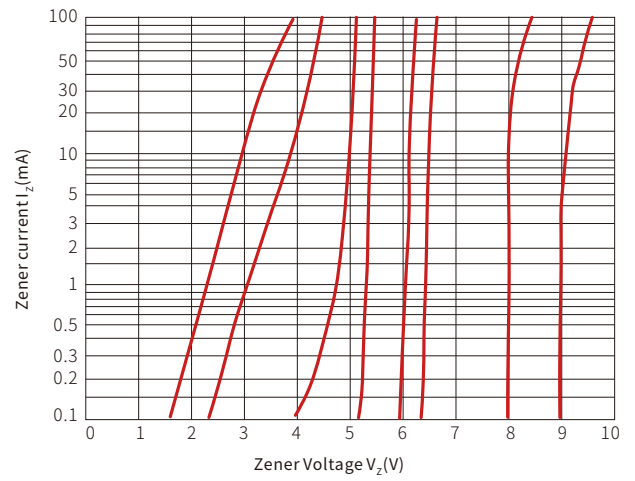


Fig.5 $V_Z = 12V$ thru 82 V

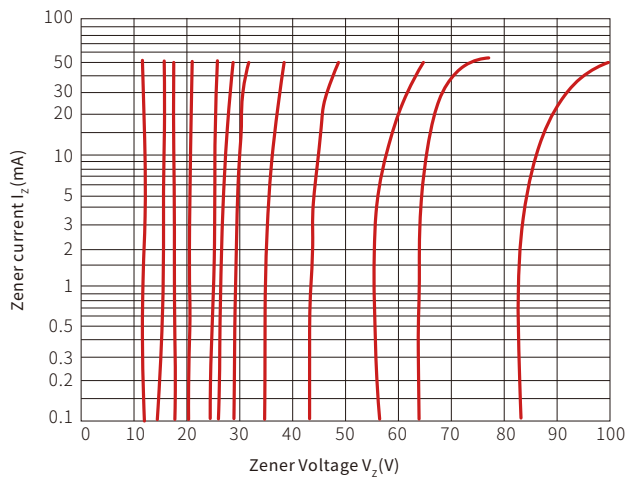


Fig.6 Effect of Zener Voltage

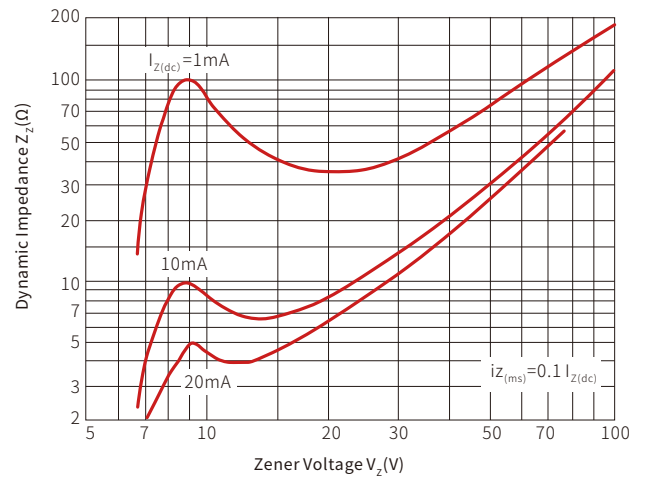
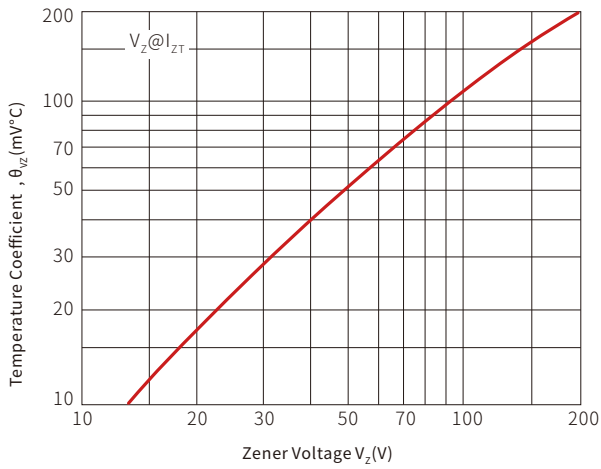
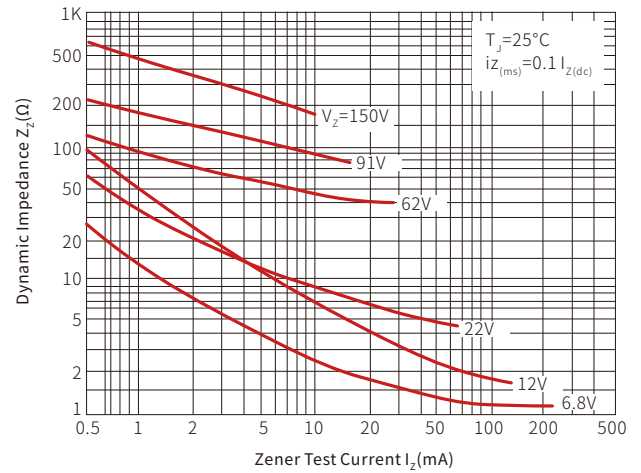
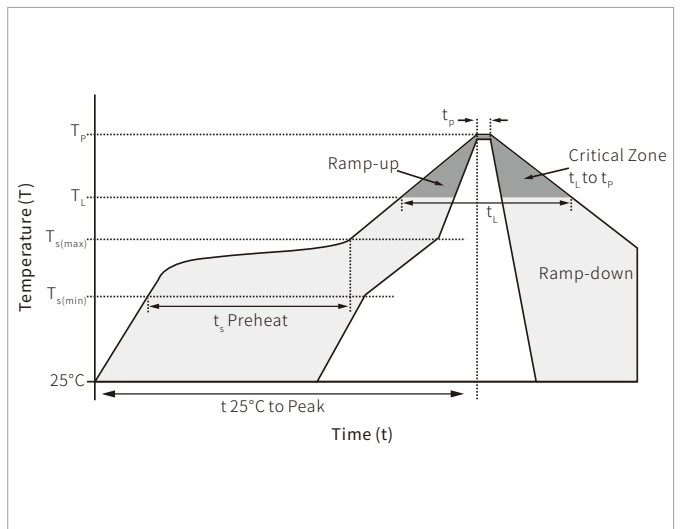


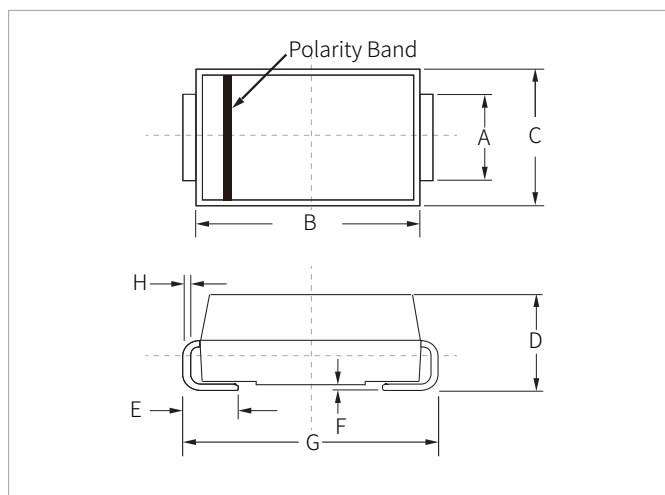
Fig.7 Zener Voltage - 14V To 200 V

Fig.8 Effect of Zener Current


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C

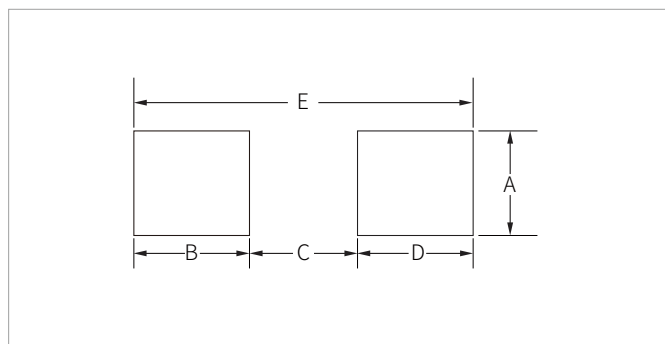


DO-214AA(SMB) PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.80	2.20	0.071	0.087
B	4.30	4.70	0.170	0.185
C	3.40	3.90	0.134	0.153
D	2.15	2.75	0.085	0.108
E	1.00	1.50	0.039	0.059
F	0.02	0.20	0.001	0.008
G	5.10	5.50	0.200	0.216
H	0.15	0.30	0.006	0.012

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.20	-	0.087	-
B	1.45	-	0.057	-
C	-	2.55	-	0.010
D	1.45	-	0.057	-
E	5.60REF		0.220REF	

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
1SMB59-B	DO-214AA(SMB)	3000PCS	13"

Headquarters

No.3387 Shendu Road
Pujiang I&E Park
Minhang Shanghai China
201000

Hotline

400-021-5756

Web

<https://www.semiware.com>

Sales Center

Tel: 86-21-3463-7458
Email: sales18@semiware.com

Customer Service

Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support

Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions

Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

By QR Code

Website



Wechat

To find your local partner within Semiware's global website: www.semiware.com

© 2022 Semiware Semiconductor Inc.

The content of this document has been carefully checked and understood. However, neither Semiware nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Semiware does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Chinese law and resulting disputes shall be settled by the courts at the place of business of Semiware. Latest publications and a complete disclaimer can be downloaded from the Semiware website. All trademarks recognized.