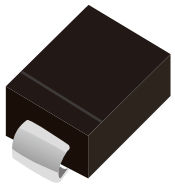
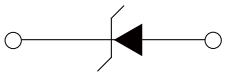
FEATURES

- Glass passivated chip
- Built-in strain relief
- Low inductance
- High peak reverse power dissipation
- Low reverse leakage
- For use in stabilizing and clipping with high power rating
- Meet AEC-Q101 Requirements



DO-214AA(SMB)



Schematic Symbol

MECHANICAL DATA

- Case: DO-214AA Molded plastic
- Polarity: Color band denotes cathode end
- Mounting position: Any

APPROVALS

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

MAXIMUM RATINGS (T_A=25°C)

Parameter	Symbol	Value	Unit
DC Power dissipation at T_L = 75 °C(1)	P_D	1.5	W
Maximum forward voltage at If=200mA	V_F	1.2	V
Junction temperature range	T_J,T_{STG}	-55 to +150	°C
Storage temperature range	T_J,T_{STG}	-55 to +150	°C

Note:

(1) T_L=Lead temperature at 3/8'' (9.5mm)from body

ELECTRICAL CHARACTERISTICS

Part Number	Device Marking Code	Nominal Zener Voltage @I_T			I_{ZT}(mA)	Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current
		$V_{Z\,AVE.}$ (V)	$V_{Z\,MIN.}$ (V)	$V_{Z\,MAX.}$ (V)		$Z_{ZT\,MAX.}$(Ω) @I_{ZT}	$Z_{ZK\,MAX.}$(Ω) @I_{ZK}	I_{ZK}(mA)	I_R(uA)@V_R	V_R(V)	I_{ZM}(mA) @50°C @$V_{(BR)}$
SMB5913AQ	913A	3.3	3.14	3.47	113.6	10.0	500.0	1.00	100.0	1.0	455.0
SMB5914AQ	914A	3.6	3.42	3.78	104.2	9.0	500.0	1.00	100.0	1.0	417.0
SMB5915AQ	915A	3.9	3.71	4.10	96.1	7.5	500.0	1.00	50.0	1.0	385.0
SMB5916AQ	916A	4.3	4.09	4.52	87.2	6.0	500.0	1.00	10.0	1.0	349.0
SMB5917AQ	917A	4.7	4.47	4.94	79.8	5.0	500.0	1.00	10.0	1.5	319.0
SMB5918AQ	918A	5.1	4.85	5.36	73.5	4.0	350.0	1.00	10.0	2.0	294.0
SMB5919AQ	919A	5.6	5.32	5.88	66.9	2.0	250.0	1.00	10.0	3.0	268.0
SMB5920AQ	920A	6.2	5.89	6.51	60.5	2.0	200.0	1.00	10.0	4.0	242.0
SMB5921AQ	921A	6.8	6.46	7.14	55.1	2.5	200.0	1.00	10.0	5.2	221.0
SMB5922AQ	922A	7.5	7.13	7.88	50.0	3.0	400.0	0.50	10.0	6.0	200.0
SMB5923AQ	923A	8.2	7.79	8.61	45.7	3.5	400.0	0.50	10.0	6.5	183.0
SMB5924AQ	924A	9.1	8.65	9.56	41.2	4.0	500.0	0.50	10.0	7.0	165.0
SMB5925AQ	925A	10.0	9.5	10.5	37.5	4.5	500.0	0.25	10.0	8.0	150.0
SMB5926AQ	926A	11.0	10.45	11.55	34.1	5.5	550.0	0.25	0.5	8.4	136.0
SMB5927AQ	927A	12.0	11.4	12.6	31.2	6.5	550.0	0.25	0.5	9.1	125.0
SMB5928AQ	928A	13.0	12.35	13.65	28.8	7.0	550.0	0.25	0.5	9.9	115.0
SMB5929AQ	929A	15.0	14.25	15.75	25.0	9.0	600.0	0.25	0.5	11.4	100.0
SMB5930AQ	930A	16.0	15.2	16.8	23.4	10.0	600.0	0.25	0.5	12.2	94.0
SMB5931AQ	931A	18.0	17.1	18.9	20.8	12.0	650.0	0.25	0.5	13.7	83.0
SMB5932AQ	932A	20.0	19.0	21.0	18.7	14.0	650.0	0.25	0.5	15.2	75.0
SMB5933AQ	933A	22.0	20.9	23.1	17.0	17.5	650.0	0.25	0.5	16.7	68.0
SMB5934AQ	934A	24.0	22.8	25.2	15.6	19.0	700.0	0.25	0.5	18.2	63.0
SMB5935AQ	935A	27.0	25.65	28.35	13.9	23.0	700.0	0.25	0.5	20.6	56.0
SMB5936AQ	936A	30.0	28.5	31.5	12.5	26.0	750.0	0.25	0.5	22.8	50.0
SMB5937AQ	937A	33.0	31.35	34.65	11.4	33.0	800.0	0.25	0.5	25.1	45.0
SMB5938AQ	938A	36.0	34.2	37.8	10.4	38.0	850.0	0.25	0.5	27.4	42.0
SMB5939AQ	939A	39.0	37.05	40.95	9.6	45.0	900.0	0.25	0.5	29.7	38.0
SMB5940AQ	940A	43.0	40.85	45.15	8.7	53.0	950.0	0.25	0.5	32.7	35.0
SMB5941AQ	941A	47.0	44.65	49.35	8.0	67.0	1000.0	0.25	0.5	35.8	32.0
SMB5942AQ	942A	51.0	48.45	53.55	7.3	70.0	1100.0	0.25	0.5	38.8	29.0
SMB5943AQ	943A	56.0	53.2	58.8	6.7	86.0	1300.0	0.25	0.5	42.6	27.0

Part Number	Device Marking Code	Nominal Zener Voltage @I_T			I_{ZT}(mA)	Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current
		$V_{Z\,AVE.}$ (V)	$V_{Z\,MIN.}$ (V)	$V_{Z\,MAX.}$ (V)		$Z_{ZT\,MAX.}$(Ω) @I_{ZT}	$Z_{ZK\,MAX.}$(Ω) @I_{ZK}	I_{ZK}(mA)	I_R(uA)@V_R	V_R(V)	I_{ZM}(mA) @50°C @$V_{(BR)}$
SMB5944AQ	944A	62.0	58.9	65.1	6.0	100.0	1500.0	0.25	0.5	47.1	24.0
SMB5945AQ	945A	68.0	64.6	71.4	5.5	120.0	1700.0	0.25	0.5	51.7	22.0
SMB5946AQ	946A	75.0	71.25	78.75	5.0	140.0	2000.0	0.25	0.5	56.0	20.0
SMB5947AQ	947A	82.0	77.9	86.1	4.6	160.0	2500.0	0.25	0.5	62.2	18.0
SMB5948AQ	948A	91.0	86.45	95.55	4.1	200.0	3000.0	0.25	0.5	69.2	16.0
SMB5949AQ	949A	100.0	95.0	105.0	3.7	250.0	3100.0	0.25	0.5	76.0	15.0
SMB5950AQ	950A	110.0	104.5	115.5	3.4	300.0	4000.0	0.25	0.5	83.6	14.0
SMB5951AQ	951A	120.0	114.0	126.0	3.1	380.0	4500.0	0.25	0.5	91.2	13.0
SMB5952AQ	952A	130.0	123.5	136.5	2.9	450.0	5000.0	0.25	0.5	98.8	12.0
SMB5953AQ	953A	150.0	142.5	157.5	2.5	600.0	6000.0	0.25	0.5	114.0	10.0
SMB5954AQ	954A	160.0	152.0	168.0	2.3	700.0	6500.0	0.25	0.5	121.6	9.4
SMB5955AQ	955A	180.0	171.0	189.0	2.1	900.0	7000.0	0.25	0.5	136.8	8.3
SMB5956AQ	956A	200.0	190.0	210.0	1.9	1200.0	8000.0	0.25	0.5	152.0	7.5

CHARACTERISTIC CURVES

Fig.1-Power Temperature Derating Curve

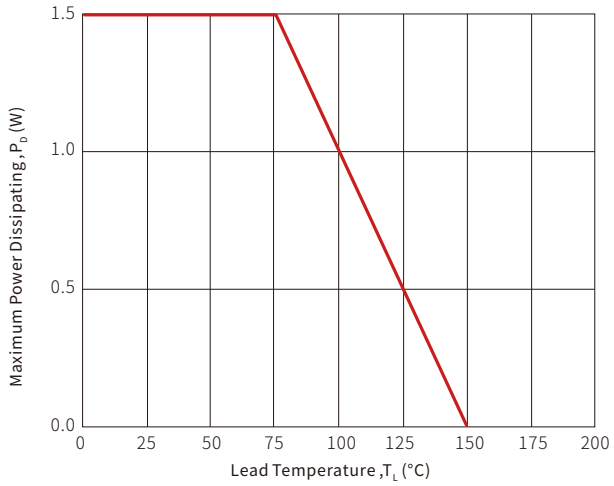


Fig.2-Temperature Coefficients v.s. Zener Voltage

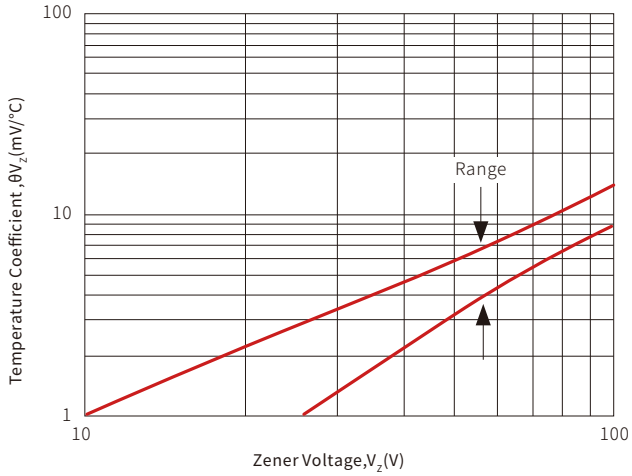


Fig.3-Typical thermal Resisttance v.s, Lead Length

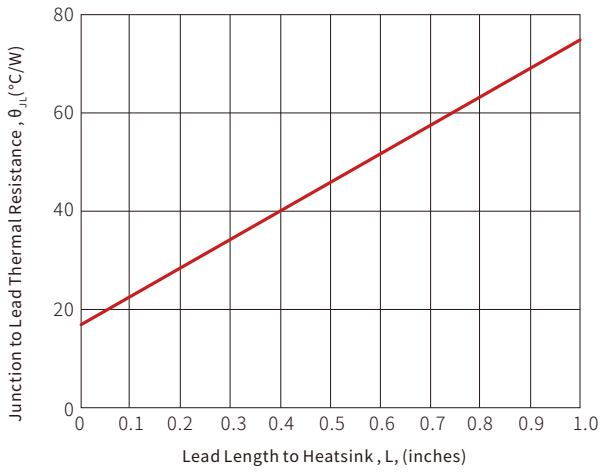


Fig.4-Maximum Surge Power

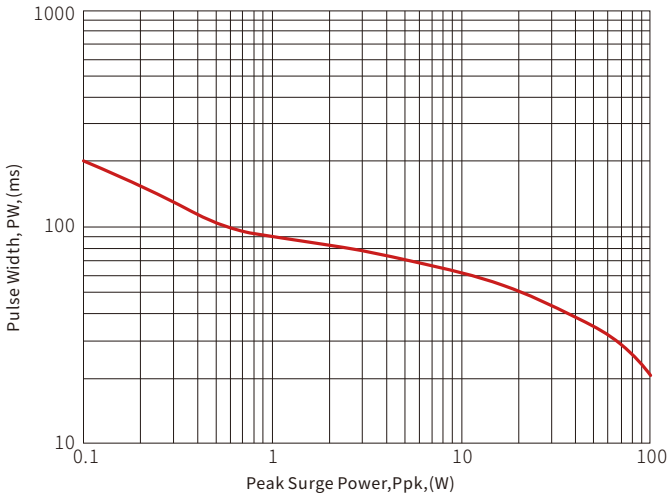
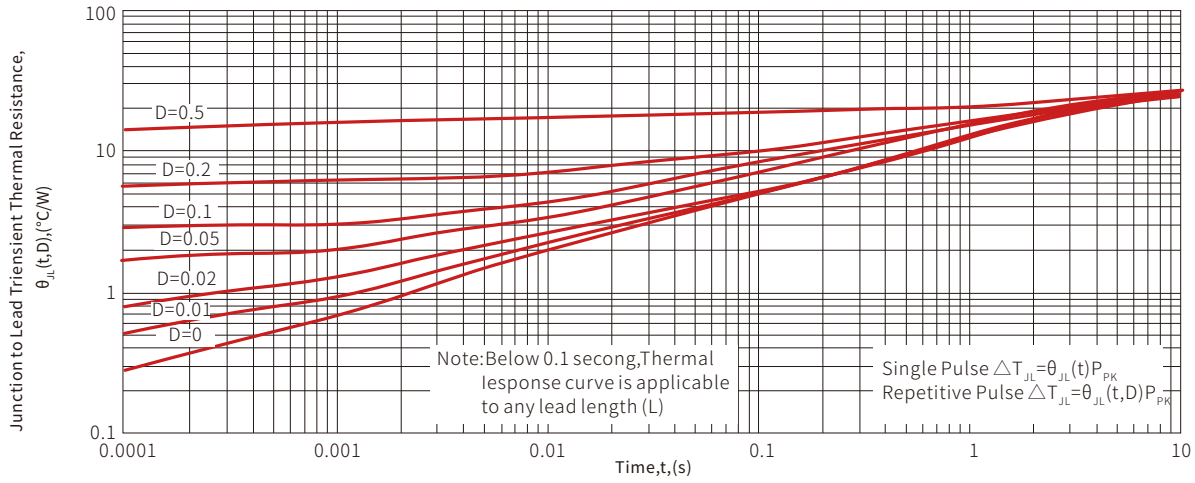
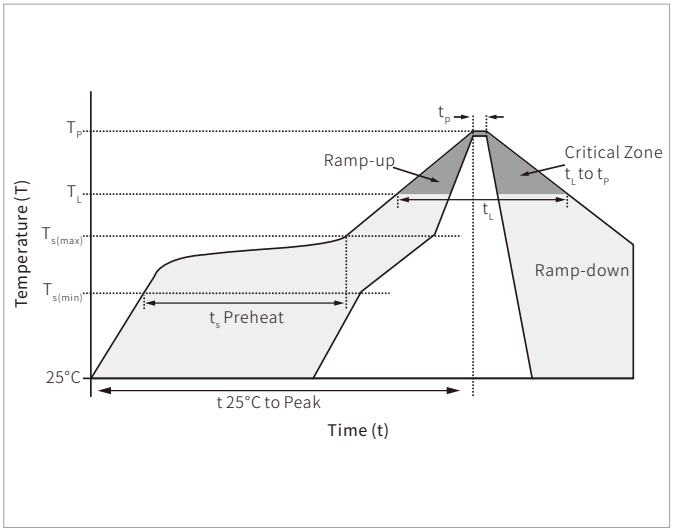


Fig.5-Typical Thermal Response L , Lead Length=3/8inch

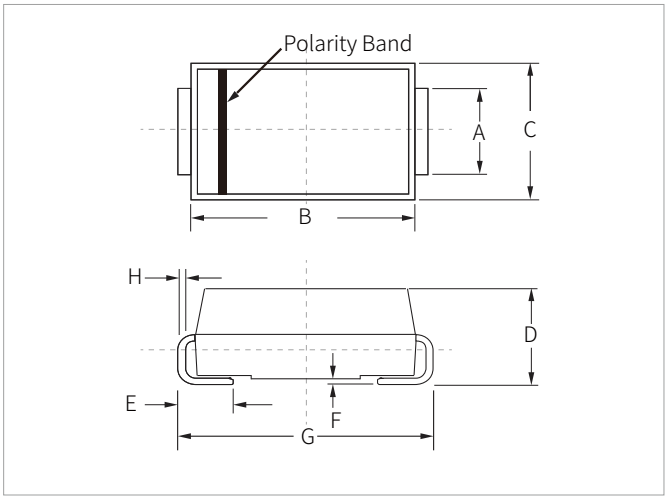


SOLDERING PARAMETERS

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

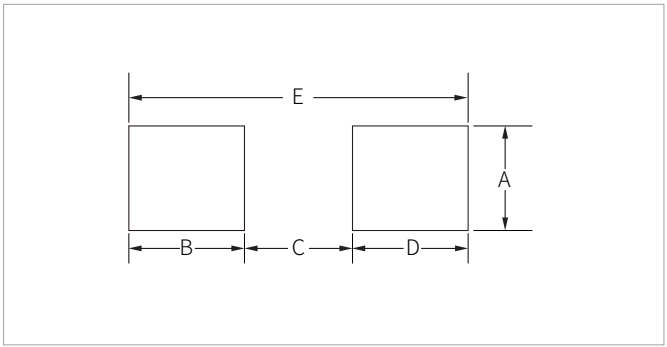


DO-214AA(SMB) PACKAGE INFORMATION



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
SMB59-AQ	DO-214AA(SMB)	3000PCS	13"

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