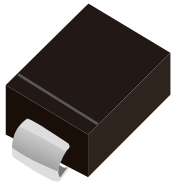
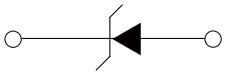
FEATURES

- 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 : Molded plastic body
- Polarity : Polarity symbol marking on body
- 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	2.0	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)
SMB2Z3.3AQ	2H2	3.3	3.14	3.47	145	8.0	400	1.00	100.0	1.0	548.0
SMB2Z3.6AQ	2H3	3.6	3.42	3.78	139	5.0	400	1.00	100.0	1.0	502.0
SMB2Z3.9AQ	2H4	3.9	3.71	4.10	128	5.0	400	1.00	50.0	1.0	464.0
SMB2Z4.3AQ	2H5	4.3	4.09	4.52	116	4.5	400	1.00	50.0	1.0	421.0
SMB2Z4.7AQ	2H6	4.7	4.47	4.94	106	4.5	550	1.00	10.0	1.0	385.0
SMB2Z5.1AQ	2H7	5.1	4.85	5.36	98	3.5	600	1.00	10.0	1.0	354.0
SMB2Z5.6AQ	2H8	5.6	5.32	5.88	89.5	2.5	500	1.00	10.0	2.0	323.0
SMB2Z6.2AQ	2A0	6.2	5.89	6.51	80.5	1.5	700	1.00	10.0	3.0	292.0
SMB2Z6.8AQ	2A1	6.8	6.46	7.14	73.5	2.0	700	1.00	10.0	4.0	266.0
SMB2Z7.5AQ	2A2	7.5	7.13	7.88	66.5	2.0	700	0.50	10.0	5.0	242.0
SMB2Z8.2AQ	2A3	8.2	7.79	8.61	61.0	2.3	700	0.50	10.0	6.0	220.0
SMB2Z9.1AQ	2A4	9.1	8.65	9.56	55.0	2.5	700	0.50	10.0	7.0	200.0
SMB2Z10AQ	2A5	10.0	9.50	10.50	50.0	3.5	700	0.25	10.0	7.6	182.0
SMB2Z11AQ	2A6	11.0	10.45	11.55	45.5	4.0	700	0.25	0.5	8.4	166.0
SMB2Z12AQ	2A7	12.0	11.40	12.60	41.5	4.5	700	0.25	0.5	9.1	152.0
SMB2Z13AQ	2A8	13.0	12.35	13.65	38.5	5.0	700	0.25	0.5	9.9	138.0
SMB2Z14AQ	2A9	14.0	13.30	14.70	35.7	5.5	700	0.25	0.5	10.6	130.0
SMB2Z15AQ	2B0	15.0	14.25	15.75	33.4	7.0	700	0.25	0.5	11.4	122.0
SMB2Z16AQ	2B1	16.0	15.20	16.80	31.2	8.0	700	0.25	0.5	12.2	114.0
SMB2Z17AQ	2B2	17.0	16.15	17.85	29.4	9.0	750	0.25	0.5	13.0	107.0
SMB2Z18AQ	2B3	18.0	17.10	18.90	27.8	10.0	750	0.25	0.5	13.7	100.0
SMB2Z19AQ	2B4	19.0	18.05	19.95	26.3	11.0	750	0.25	0.5	14.4	95.0
SMB2Z20AQ	2B5	20.0	19.00	21.00	25.0	11.0	750	0.25	0.5	15.2	90.0
SMB2Z22AQ	2B6	22.0	20.90	23.10	22.8	12.0	750	0.25	0.5	16.7	82.0
SMB2Z24AQ	2B7	24.0	22.80	25.20	20.8	13.0	750	0.25	0.5	18.2	76.0
SMB2Z27AQ	2B8	27.0	25.65	28.35	18.5	18.0	750	0.25	0.5	20.6	68.0
SMB2Z30AQ	2B9	30.0	28.50	31.50	16.6	20.0	1000	0.25	0.5	22.5	60.0
SMB2Z33AQ	2C0	33.0	31.35	34.65	15.1	23.0	1000	0.25	0.5	25.1	55.0
SMB2Z36AQ	2C1	36.0	34.20	37.80	13.9	25.0	1000	0.25	0.5	27.4	50.0
SMB2Z39AQ	2C2	39.0	37.05	40.95	12.8	30.0	1000	0.25	0.5	29.7	47.0

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)
SMB2Z43AQ	2C3	43.0	40.85	45.15	11.6	35.0	1500	0.25	0.5	32.7	43.0
SMB2Z47AQ	2C4	47.0	44.65	49.35	10.6	40.0	1500	0.25	0.5	35.8	39.0
SMB2Z51AQ	2C5	51.0	48.45	53.55	9.8	48.0	1500	0.25	0.5	38.8	36.0
SMB2Z56AQ	2C6	56.0	53.20	58.80	9.0	55.0	2000	0.25	0.5	42.6	32.0
SMB2Z62AQ	2C7	62.0	58.90	65.10	8.1	60.0	2000	0.25	0.5	47.1	29.0
SMB2Z68AQ	2C8	68.0	64.60	71.40	7.4	75.0	2000	0.25	0.5	51.7	27.0
SMB2Z75AQ	2C9	75.0	71.25	78.75	6.7	90.0	2000	0.25	0.5	56.0	24.0
SMB2Z82AQ	2F0	82.0	77.90	86.10	6.1	100.0	3000	0.25	0.5	62.2	22.0
SMB2Z91AQ	2F1	91.0	86.45	95.55	5.5	125.0	3000	0.25	0.5	69.2	20.0
SMB2Z100AQ	2F2	100.0	95.00	105.00	5.0	175.0	3000	0.25	0.5	76.0	18.0
SMB2Z110AQ	2F3	110.0	104.50	115.50	4.5	250.0	4000	0.25	0.5	83.6	17.0
SMB2Z120AQ	2F4	120.0	114.00	126.00	4.2	325.0	4500	0.25	0.5	91.2	15.0
SMB2Z130AQ	2F5	130.0	123.50	136.50	3.8	400.0	5000	0.25	0.5	98.8	14.0
SMB2Z140AQ	2F6	140.0	133.00	147.00	3.6	500.0	5500	0.25	0.5	106.4	13.0
SMB2Z150AQ	2F7	150.0	142.50	157.50	3.3	575.0	6000	0.25	0.5	114.0	12.0
SMB2Z160AQ	2F8	160.0	152.00	168.00	3.1	650.0	6500	0.25	0.5	121.6	11.0
SMB2Z170AQ	2F9	170.0	161.50	178.50	2.9	675.0	7000	0.25	0.5	130.4	11.0
SMB2Z180AQ	2G1	180.0	171.00	189.00	2.8	725.0	7000	0.25	0.5	136.8	10.0
SMB2Z190AQ	2G2	190.0	180.50	199.50	2.6	825.0	8000	0.25	0.5	144.8	10.0
SMB2Z200AQ	2G3	200.0	190.00	210.00	2.5	1900.0	9990	0.25	0.5	152.0	9.0

CHARACTERISTIC CURVES

Fig.1-Power Temperature Derating Curve

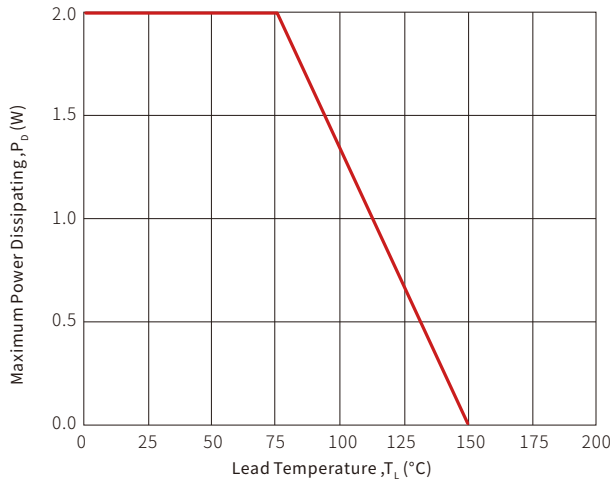


Fig.2-Temperature Coefficients v.s. Zener Voltage

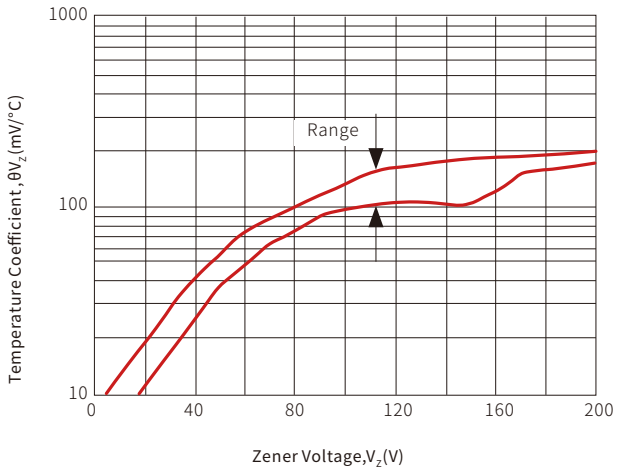


Fig.3-Typical Thermal Resistance v.s. Lead Length

Fig.4-Maximum Surge Power

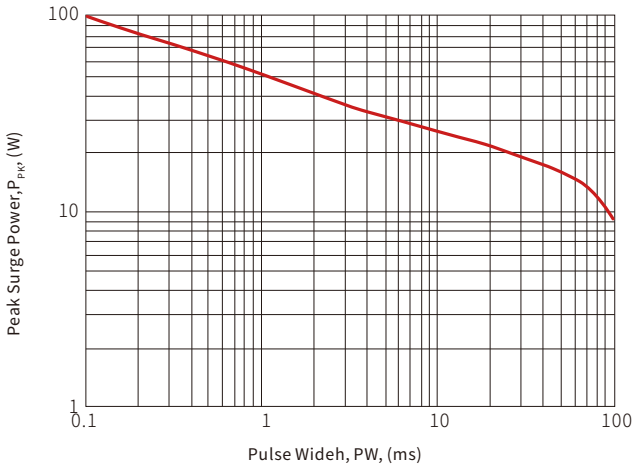
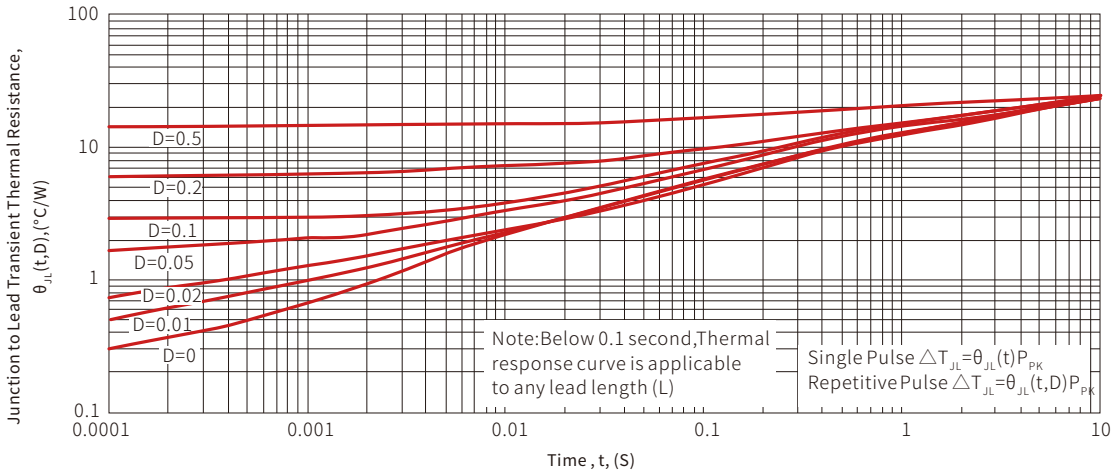
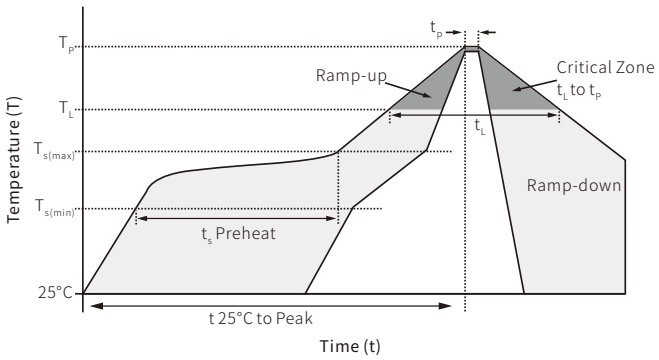


Fig.5-Typical Thermal Response L, Lead Length=3/8inch

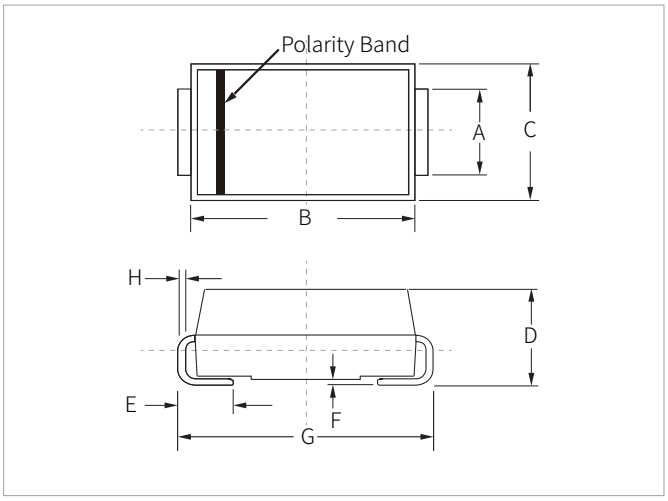


SOLDERING PARAMETERS

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

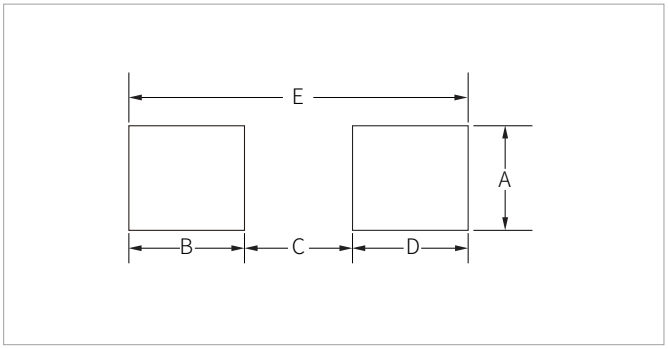


DO-214AA(SMB) PACKAGE INFORMATION



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
SMB2Z-AQ	DO-214AA(SMB)	3000PCS	13"

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