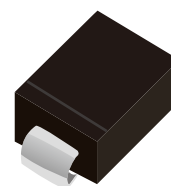
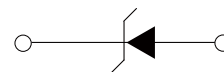


FEATURES

- | Glass passivated chip
- | Built-in strain relief
- | Low leakage
- | 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 ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit
DC Power dissipation at $T_L = 75^{\circ}\text{C}^{(1)}$	P_D	3.0	W
Maximum forward voltage at $I_F=200\text{mA}$	V_F	1.2	V
Junction temperature range	T_J, T_{STG}	-55 to +150	$^{\circ}\text{C}$
Storage temperature range	T_J, T_{STG}	-55 to +150	$^{\circ}\text{C}$

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 (μA) @V _R	V _R (V)	
SMB3Z3.3AQ	3H0	3.3	3.14	3.47	227.3	10.0	500.0	1.00	100.0	1.0	817.0
SMB3Z3.6AQ	3H1	3.6	3.42	3.78	208.3	9.0	500.0	1.00	100.0	1.0	749.0
SMB3Z3.9AQ	3H2	3.9	3.71	4.10	192.0	4.5	400.0	1.00	100.0	1.0	691.0
SMB3Z4.3AQ	3H3	4.3	4.09	4.52	174.0	4.5	400.0	1.00	50.0	1.0	627.0
SMB3Z4.7AQ	3H4	4.7	4.47	4.94	160.0	4.0	500.0	1.00	50.0	1.0	573.0
SMB3Z5.1AQ	3H5	5.1	4.85	5.36	147.0	3.5	550.0	1.00	10.0	1.0	528.0
SMB3Z5.6AQ	3H6	5.6	5.32	5.88	134.0	2.5	600.0	1.00	10.0	2.0	481.0
SMB3Z6.2AQ	3A0	6.2	5.89	6.51	121.0	1.5	700.0	1.00	10.0	3.0	435.0
SMB3Z6.8AQ	3A1	6.8	6.46	7.14	110.0	2.0	700.0	1.00	10.0	4.0	393.0
SMB3Z7.5AQ	3A2	7.5	7.13	7.88	100.0	2.0	700.0	0.50	10.0	5.0	360.0
SMB3Z8.2AQ	3A3	8.2	7.79	8.61	91.0	2.3	700.0	0.50	10.0	6.0	330.0
SMB3Z9.1AQ	3A4	9.1	8.65	9.56	82.0	2.5	700.0	0.50	10.0	7.0	297.0
SMB3Z10AQ	3A5	10.0	9.50	10.50	75.0	3.5	700.0	0.25	10.0	7.6	270.0
SMB3Z11AQ	3A6	11.0	10.45	11.55	68.0	4.0	700.0	0.25	0.5	8.4	225.0
SMB3Z12AQ	3A7	12.0	11.40	12.60	63.0	4.5	700.0	0.25	0.5	9.1	246.0
SMB3Z13AQ	3A8	13.0	12.35	13.65	58.0	4.5	700.0	0.25	0.5	9.9	208.0
SMB3Z14AQ	3A9	14.0	13.30	14.70	53.0	5.0	700.0	0.25	0.5	10.6	193.0
SMB3Z15AQ	3B0	15.0	14.25	15.75	50.0	5.5	700.0	0.25	0.5	11.4	180.0
SMB3Z16AQ	3B1	16.0	15.20	16.80	47.0	5.5	700.0	0.25	0.5	12.2	169.0
SMB3Z17AQ	3B2	17.0	16.15	17.85	44.0	6.0	750.0	0.25	0.5	13.0	159.0
SMB3Z18AQ	3B3	18.0	17.10	18.90	42.0	6.0	750.0	0.25	0.5	13.7	150.0
SMB3Z19AQ	3B4	19.0	18.05	19.95	40.0	7.0	750.0	0.25	0.5	14.4	142.0
SMB3Z20AQ	3B5	20.0	19.00	21.00	37.0	7.0	750.0	0.25	0.5	15.2	135.0
SMB3Z22AQ	3B6	22.0	20.90	23.10	34.0	8.0	750.0	0.25	0.5	16.7	123.0
SMB3Z24AQ	3B7	24.0	22.80	25.20	31.0	9.0	750.0	0.25	0.5	18.2	112.0
SMB3Z27AQ	3B8	27.0	25.65	28.35	28.0	10.0	750.0	0.25	0.5	20.6	100.0
SMB3Z30AQ	3B9	30.0	28.50	31.50	25.0	16.0	1000.0	0.25	0.5	22.5	90.0
SMB3Z33AQ	3C0	33.0	31.35	34.65	23.0	20.0	1000.0	0.25	0.5	25.1	82.0
SMB3Z36AQ	3C1	36.0	34.20	37.80	21.0	22.0	1000.0	0.25	0.5	27.4	75.0
SMB3Z39AQ	3C2	39.0	37.05	40.95	19.0	28.0	1000.0	0.25	0.5	29.7	69.0

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)
SMB3Z43AQ	3C3	43.0	40.85	45.15	17.0	33.0	1500.0	0.25	0.5	32.7	63.0
SMB3Z47AQ	3C4	47.0	44.65	49.35	16.0	38.0	1500.0	0.25	0.5	35.6	57.0
SMB3Z51AQ	3C5	51.0	48.45	53.55	15.0	45.0	1500.0	0.25	0.5	38.8	53.0
SMB3Z56AQ	3C6	56.0	53.20	58.80	13.0	50.0	2000.0	0.25	0.5	42.6	48.0
SMB3Z62AQ	3C7	62.0	58.90	65.10	12.0	55.0	2000.0	0.25	0.5	47.1	44.0
SMB3Z68AQ	3C8	68.0	64.60	71.40	11.0	70.0	2000.0	0.25	0.5	51.7	40.0
SMB3Z75AQ	3C9	75.0	71.25	78.75	10.0	85.0	2000.0	0.25	0.5	56.0	36.0
SMB3Z82AQ	3F0	82.0	77.90	86.10	9.1	95.0	3000.0	0.25	0.5	62.2	33.0
SMB3Z91AQ	3F1	91.0	86.45	95.55	8.2	115.0	3000.0	0.25	0.5	69.2	30.0
SMB3Z100AQ	3F2	100.0	95.00	105.00	7.5	160.0	3000.0	0.25	0.5	76.0	27.0
SMB3Z110AQ	3F3	110.0	104.50	115.50	6.8	225.0	4000.0	0.25	0.5	83.6	25.0
SMB3Z120AQ	3F4	120.0	114.00	126.00	6.3	300.0	4500.0	0.25	0.5	91.2	22.0
SMB3Z130AQ	3F5	130.0	123.50	136.50	5.8	375.0	5000.0	0.25	0.5	98.8	21.0
SMB3Z140AQ	3F6	140.0	133.00	147.00	5.3	475.0	5000.0	0.25	0.5	106.4	19.0
SMB3Z150AQ	3F7	150.0	142.50	157.50	5.0	550.0	6000.0	0.25	0.5	114.0	18.0
SMB3Z160AQ	3F8	160.0	152.00	168.00	4.7	625.0	6500.0	0.25	0.5	121.6	17.0
SMB3Z170AQ	3F9	170.0	161.50	178.50	4.4	650.0	7000.0	0.25	0.5	130.4	16.0
SMB3Z180AQ	3G1	180.0	171.00	189.00	4.2	700.0	7000.0	0.25	0.5	136.8	15.0
SMB3Z190AQ	3G2	190.0	180.50	199.50	4.0	800.0	8000.0	0.25	0.5	144.8	14.0
SMB3Z200AQ	3G3	200.0	190.00	210.00	3.7	875.0	8000.0	0.25	0.5	152.0	13.0
SMB3Z210AQ	3G4	210.0	199.50	220.50	3.5	950.0	8300.0	0.25	0.5	169.0	12.3
SMB3Z220AQ	3G5	220.0	209.00	231.00	3.3	1600.0	8500.0	0.25	0.5	178.0	11.6
SMB3Z230AQ	3G6	230.0	218.50	241.50	3.1	2000.0	9000.0	0.25	0.5	186.0	10.9
SMB3Z240AQ	3G7	240.0	228.00	252.00	2.9	2500.0	9000.0	0.25	0.5	195.0	10.2
SMB3Z250AQ	3G8	250.0	237.50	262.50	2.7	3000.0	9500.0	0.25	0.5	205.0	9.5

CHARACTERISTIC CURVES

Fig.1-Power Temperature Derating Curve

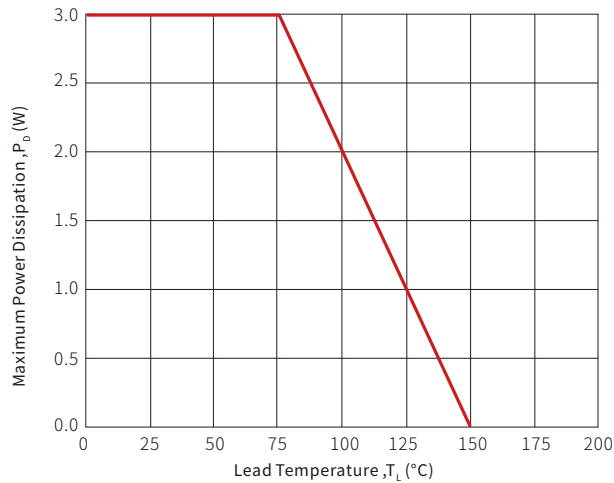


Fig.2-Temperature Coefficients v.s. Zener Voltage

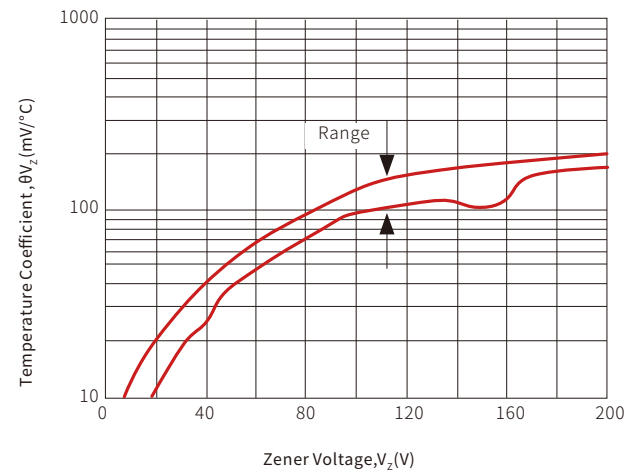


Fig.3-Typical Thermal Resistance v.s. Lead Length

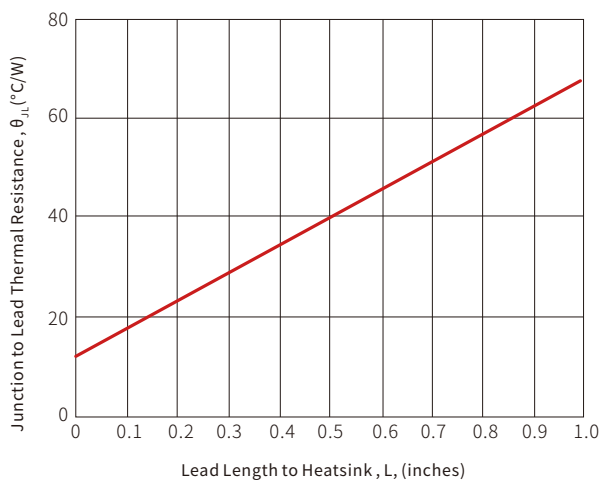


Fig.4-Maximum Surge Power

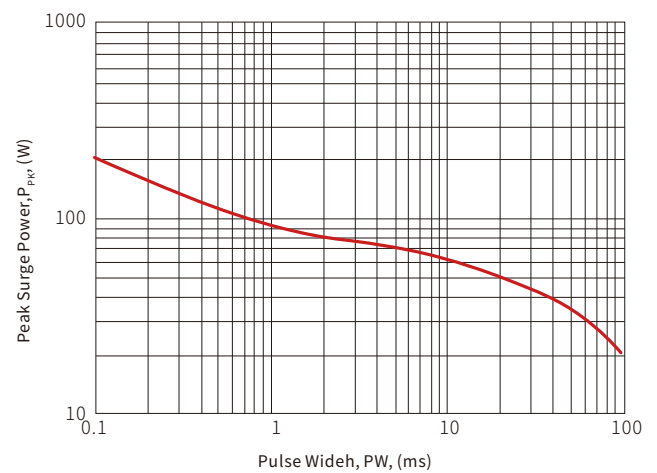
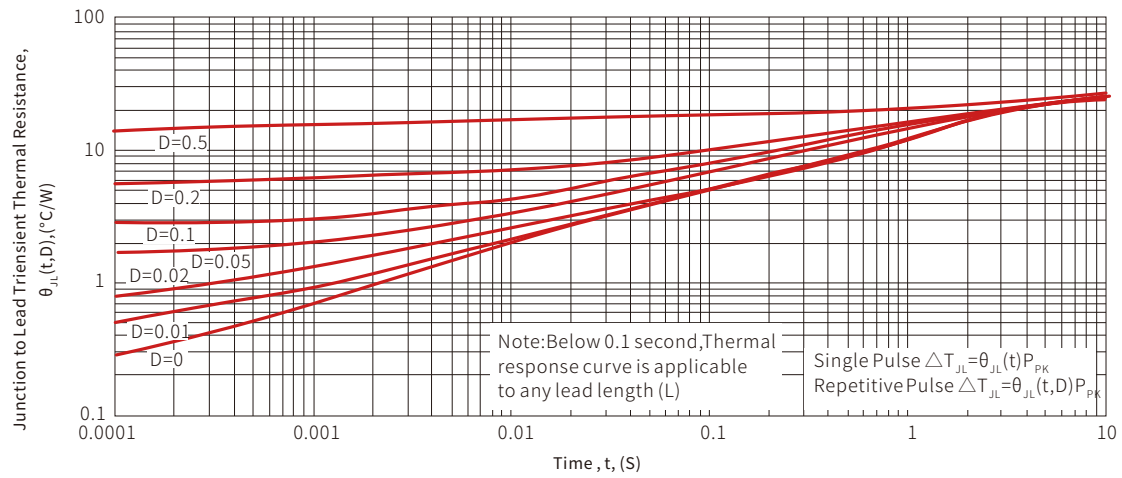
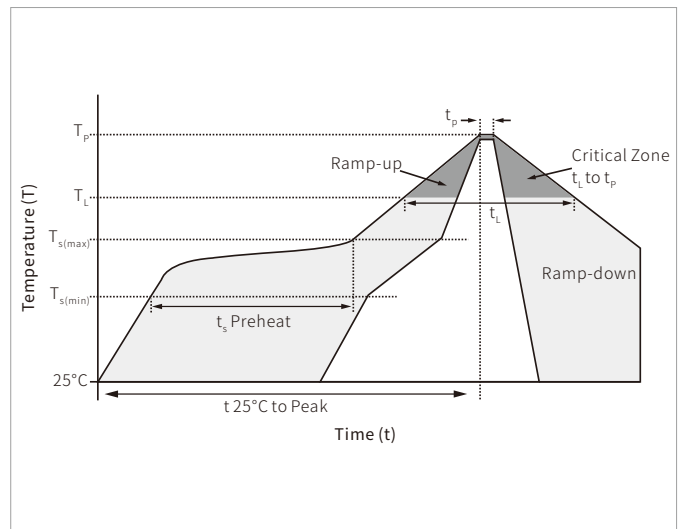


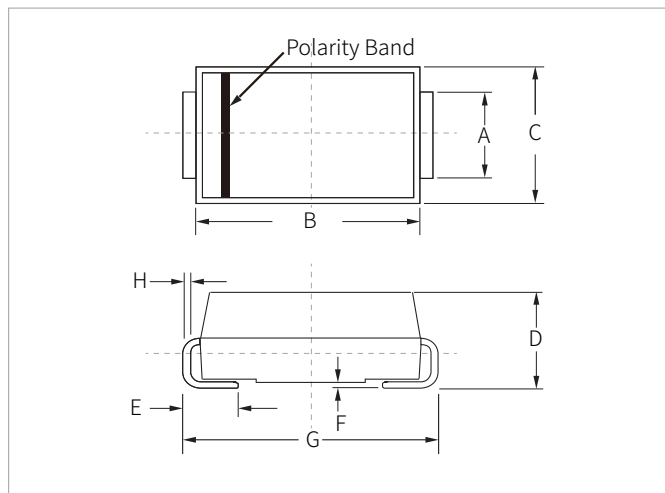
Fig.5-Typical Thermal Response L, Lead Length=3/8inch


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

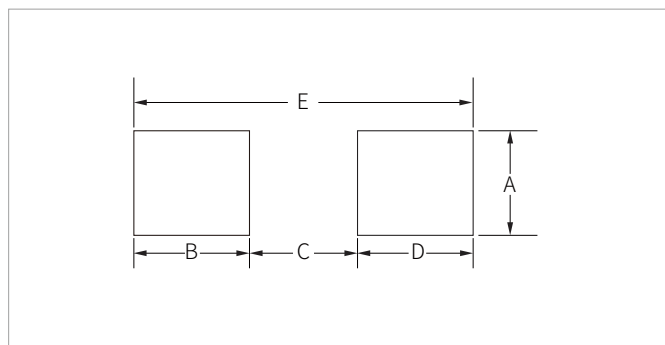


DO-214AA(SMB) PACKAGE INFORMATION



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
SMB3Z3.3AQ-SMB3Z250AQ	DO-214AA(SMB)	3000PCS	13"

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