

## FEATURES

- | Glass Passivated Chip

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- | Built-in Strain Relief

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- | Low Inductance

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- | High Peak Reverse Power Dissipation

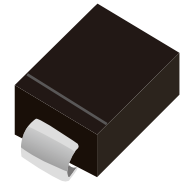
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- | Low Reverse Leakage

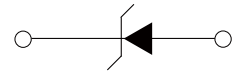
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- | For Use In Stabilizing And Clipping With High Power Rating

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DO-214AA(SMB)



Schematic Symbol

## MECHANICAL DATA

- | Case : Molded plastic body

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- | Polarity : Polarity symbol marking on body

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- | Mounting Position : Any

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## APPROVALS

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

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

Parameter	Symbo	Value	Unit
DC Power dissipation at $T_L = 75^{\circ}\text{C}^{(1)}$	$P_D$	2.0	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:

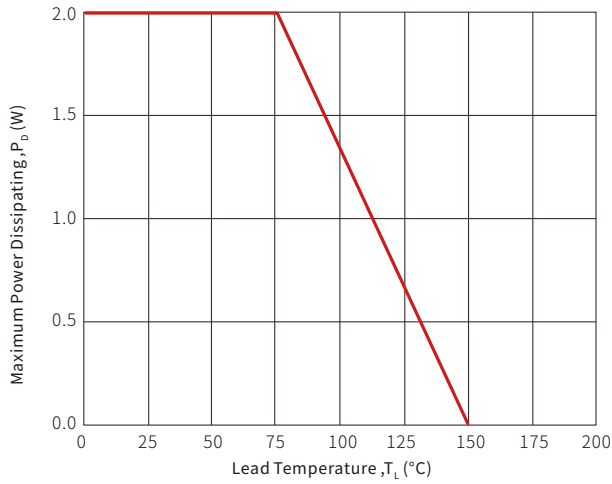
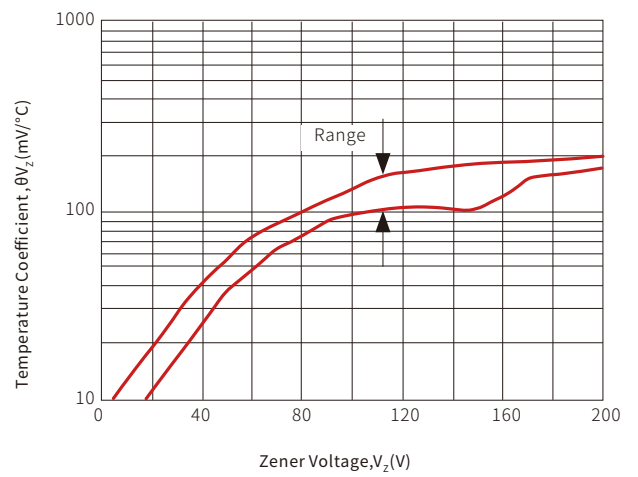
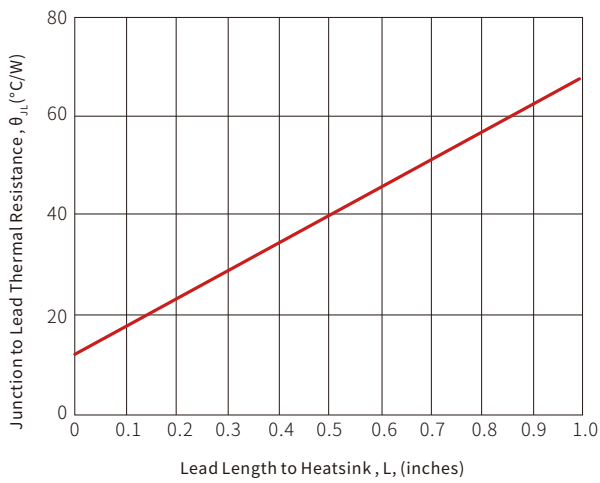
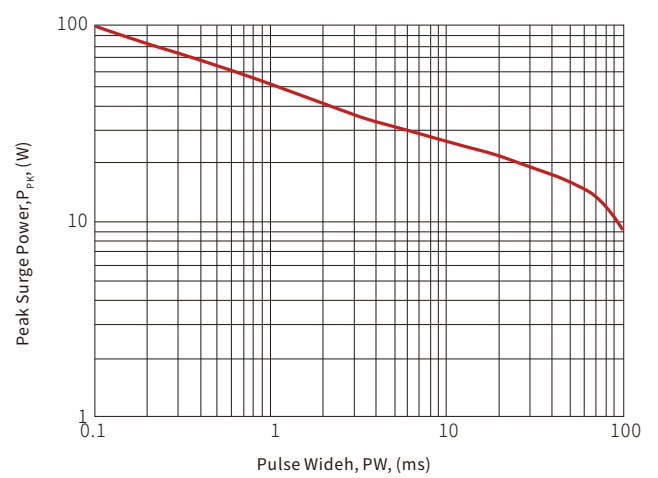
 (1)  $T_L$ =Lead temperature at 3/8" (9.5mm)from body

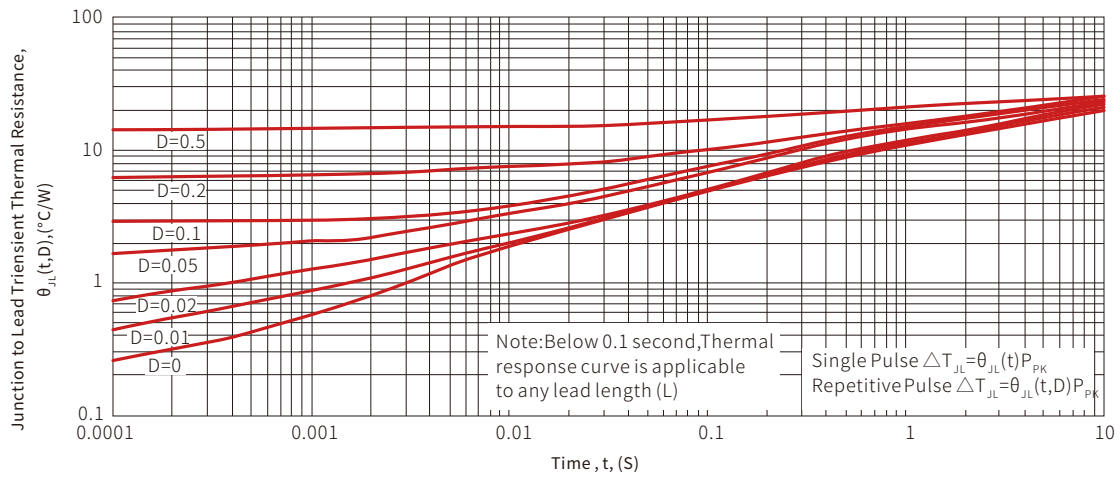
# ELECTRICAL CHARACTERISTICS

Part Number	Device Marking Code	Nominal Zener Voltage @I <sub>T</sub>			I <sub>ZT</sub> (mA)	Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current
		V <sub>Z AVE.</sub> (V)	V <sub>Z MIN.</sub> (V)	V <sub>Z MAX.</sub> (V)		Z <sub>ZT MAX.</sub> (Ω) @I <sub>ZT</sub>	Z <sub>ZK MAX.</sub> (Ω) @I <sub>ZK</sub>	I <sub>ZK</sub> (mA)	I <sub>R</sub> (μA)@V <sub>R</sub>	V <sub>R</sub> (V)	
SMB2Z3.3A	2H2	3.3	3.14	3.47	145	8.0	400	1.00	100.0	1.0	548.0
SMB2Z3.6A	2H3	3.6	3.42	3.78	139	5.0	400	1.00	100.0	1.0	502.0
SMB2Z3.9A	2H4	3.9	3.71	4.10	128	5.0	400	1.00	50.0	1.0	464.0
SMB2Z4.3A	2H5	4.3	4.09	4.52	116	4.5	400	1.00	50.0	1.0	421.0
SMB2Z4.7A	2H6	4.7	4.47	4.94	106	4.5	550	1.00	10.0	1.0	385.0
SMB2Z5.1A	2H7	5.1	4.85	5.36	98	3.5	600	1.00	10.0	1.0	354.0
SMB2Z5.6A	2H8	5.6	5.32	5.88	89.5	2.5	500	1.00	10.0	2.0	323.0
SMB2Z6.2A	2A0	6.2	5.89	6.51	80.5	1.5	700	1.00	10.0	3.0	292.0
SMB2Z6.8A	2A1	6.8	6.46	7.14	73.5	2.0	700	1.00	10.0	4.0	266.0
SMB2Z7.5A	2A2	7.5	7.13	7.88	66.5	2.0	700	0.50	10.0	5.0	242.0
SMB2Z8.2A	2A3	8.2	7.79	8.61	61.0	2.3	700	0.50	10.0	6.0	220.0
SMB2Z9.1A	2A4	9.1	8.65	9.56	55.0	2.5	700	0.50	10.0	7.0	200.0
SMB2Z10A	2A5	10.0	9.50	10.50	50.0	3.5	700	0.25	10.0	7.6	182.0
SMB2Z11A	2A6	11.0	10.45	11.55	45.5	4.0	700	0.25	0.5	8.4	166.0
SMB2Z12A	2A7	12.0	11.40	12.60	41.5	4.5	700	0.25	0.5	9.1	152.0
SMB2Z13A	2A8	13.0	12.35	13.65	38.5	5.0	700	0.25	0.5	9.9	138.0
SMB2Z14A	2A9	14.0	13.30	14.70	35.7	5.5	700	0.25	0.5	10.6	130.0
SMB2Z15A	2B0	15.0	14.25	15.75	33.4	7.0	700	0.25	0.5	11.4	122.0
SMB2Z16A	2B1	16.0	15.20	16.80	31.2	8.0	700	0.25	0.5	12.2	114.0
SMB2Z17A	2B2	17.0	16.15	17.85	29.4	9.0	750	0.25	0.5	13.0	107.0
SMB2Z18A	2B3	18.0	17.10	18.90	27.8	10.0	750	0.25	0.5	13.7	100.0
SMB2Z19A	2B4	19.0	18.05	19.95	26.3	11.0	750	0.25	0.5	14.4	95.0
SMB2Z20A	2B5	20.0	19.00	21.00	25.0	11.0	750	0.25	0.5	15.2	90.0
SMB2Z22A	2B6	22.0	20.90	23.10	22.8	12.0	750	0.25	0.5	16.7	82.0
SMB2Z24A	2B7	24.0	22.80	25.20	20.8	13.0	750	0.25	0.5	18.2	76.0
SMB2Z27A	2B8	27.0	25.65	28.35	18.5	18.0	750	0.25	0.5	20.6	68.0
SMB2Z30A	2B9	30.0	28.50	31.50	16.6	20.0	1000	0.25	0.5	22.5	60.0
SMB2Z33A	2C0	33.0	31.35	34.65	15.1	23.0	1000	0.25	0.5	25.1	55.0
SMB2Z36A	2C1	36.0	34.20	37.80	13.9	25.0	1000	0.25	0.5	27.4	50.0
SMB2Z39A	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 <sub>T</sub>			I <sub>ZT</sub> (mA)	Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current
		V <sub>Z.AVE.</sub> (V)	V <sub>Z.MIN.</sub> (V)	V <sub>Z.MAX.</sub> (V)		Z <sub>ZT.MAX.</sub> (Ω) @I <sub>ZT</sub>	Z <sub>ZK.MAX.</sub> (Ω) @I <sub>ZK</sub>	I <sub>ZK</sub> (mA)	I <sub>R</sub> (uA)@V <sub>R</sub>	V <sub>R</sub> (V)	
SMB2Z43A	2C3	43.0	40.85	45.15	11.6	35.0	1500	0.25	0.5	32.7	43.0
SMB2Z47A	2C4	47.0	44.65	49.35	10.6	40.0	1500	0.25	0.5	35.8	39.0
SMB2Z51A	2C5	51.0	48.45	53.55	9.8	48.0	1500	0.25	0.5	38.8	36.0
SMB2Z56A	2C6	56.0	53.20	58.80	9.0	55.0	2000	0.25	0.5	42.6	32.0
SMB2Z62A	2C7	62.0	58.90	65.10	8.1	60.0	2000	0.25	0.5	47.1	29.0
SMB2Z68A	2C8	68.0	64.60	71.40	7.4	75.0	2000	0.25	0.5	51.7	27.0
SMB2Z75A	2C9	75.0	71.25	78.75	6.7	90.0	2000	0.25	0.5	56.0	24.0
SMB2Z82A	2F0	82.0	77.90	86.10	6.1	100.0	3000	0.25	0.5	62.2	22.0
SMB2Z91A	2F1	91.0	86.45	95.55	5.5	125.0	3000	0.25	0.5	69.2	20.0
SMB2Z100A	2F2	100.0	95.00	105.00	5.0	175.0	3000	0.25	0.5	76.0	18.0
SMB2Z110A	2F3	110.0	104.50	115.50	4.5	250.0	4000	0.25	0.5	83.6	17.0
SMB2Z120A	2F4	120.0	114.00	126.00	4.2	325.0	4500	0.25	0.5	91.2	15.0
SMB2Z130A	2F5	130.0	123.50	136.50	3.8	400.0	5000	0.25	0.5	98.8	14.0
SMB2Z140A	2F6	140.0	133.00	147.00	3.6	500.0	5500	0.25	0.5	106.4	13.0
SMB2Z150A	2F7	150.0	142.50	157.50	3.3	575.0	6000	0.25	0.5	114.0	12.0
SMB2Z160A	2F8	160.0	152.00	168.00	3.1	650.0	6500	0.25	0.5	121.6	11.0
SMB2Z170A	2F9	170.0	161.50	178.50	2.9	675.0	7000	0.25	0.5	130.4	11.0
SMB2Z180A	2G1	180.0	171.00	189.00	2.8	725.0	7000	0.25	0.5	136.8	10.0
SMB2Z190A	2G2	190.0	180.50	199.50	2.6	825.0	8000	0.25	0.5	144.8	10.0
SMB2Z200A	2G3	200.0	190.00	210.00	2.5	1900.0	9990	0.25	0.5	152.0	9.0

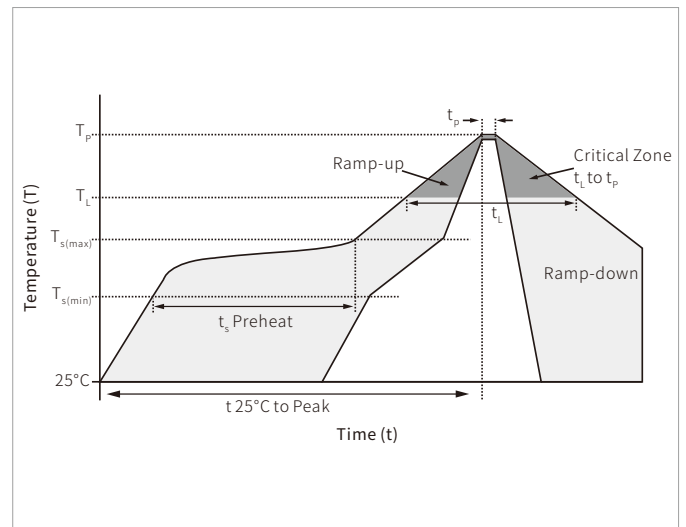
# CHARACTERISTIC CURVES

**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**


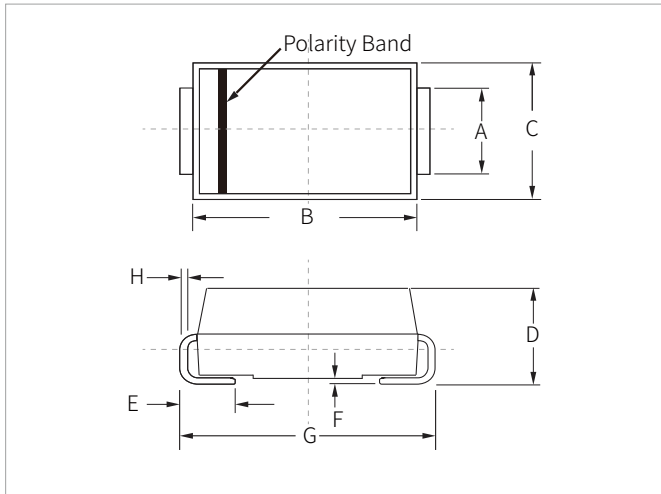
**Fig.5-Typical Thermal Response L, Lead Length=3/8inch**


## 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

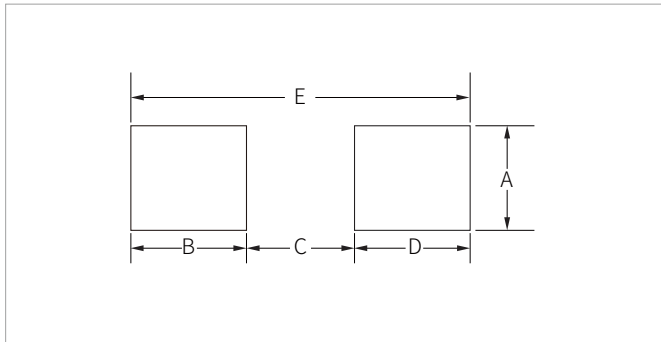


## DO-214AA(SMB) PACKAGE INFORMATION



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
SMB2Z3.3A-SMB2Z200A	DO-214AA(SMB)	3000PCS	13"

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