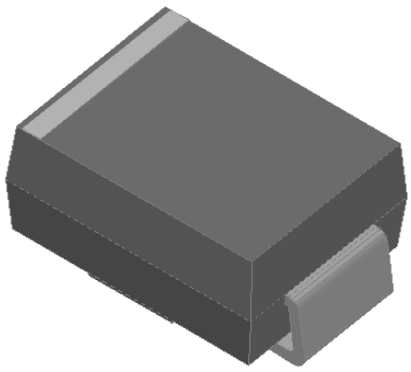
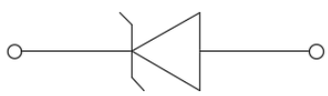
Surface Mount Zener Diodes





Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

Mechanical Data

- **Package**: DO-214AA (SMB)
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

■Maximum Ratings (T_a=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MAX
DC power dissipation at TL = 75 °C	P_D	W	3.0
Maximum instantaneous forward voltage@ I_F=200mA	V_F	V	1.5
Maximum junction temperature	T_j	℃	-55 to +150
Storage temperature range	T_{stg}	℃	-55 to +150

■Electrical Characteristics（T_a=25℃ Unless otherwise specified）

Part Number	Nominal Zener voltage			Test current	Maximum dynamic impedance resistance			Maximum reverse leakage current		Maximum DC Zener Current
	Min V_Z (1)at I_{ZT}	Typ. V_Z (1)at I_{ZT}	Max V_Z (1)at I_{ZT}	I_{ZT}	Z_{ZT} at I_{ZT}	Z_{ZK} at I_{ZK}	I_{ZK}	I_R	Test voltage V_R	I_{ZM}
	V	V	V	mA	Ω	Ω	mA	μA	V	mA
SMB3Z3.3A	3.14	3.3	3.47	227.3	10.0	500	1.00	100.0	1.0	817.0
SMB3Z3.6A	3.42	3.6	3.78	208.3	9.0	500	1.00	100.0	1.0	749.0
SMB3Z3.9A	3.71	3.9	4.10	192.0	4.5	400	1.00	100.0	1.0	691.0
SMB3Z4.3A	4.09	4.3	4.52	174.0	4.5	400	1.00	50.0	1.0	627.0
SMB3Z4.7A	4.47	4.7	4.94	160.0	4.0	500	1.00	50.0	1.0	573.0
SMB3Z5.1A	4.85	5.1	5.36	147.0	3.5	550	1.00	10.0	1.0	528.0
SMB3Z5.6A	5.32	5.6	5.88	134.0	2.5	600	1.00	10.0	2.0	481.0
SMB3Z6.2A	5.89	6.2	6.51	121.0	1.5	700	1.00	10.0	3.0	435.0
SMB3Z6.8A	6.46	6.8	7.14	110.0	2.0	700	1.00	10.0	4.0	393.0
SMB3Z7.5A	7.13	7.5	7.88	100.0	2.0	700	0.50	10.0	5.0	360.0
SMB3Z8.2A	7.79	8.2	8.61	91.0	2.3	700	0.50	10.0	6.0	330.0
SMB3Z9.1A	8.65	9.1	9.56	82.0	2.5	700	0.50	10.0	7.0	297.0

Part Number	Nominal Zener voltage			Test current	Maximum dynamic impedance resistance			Maximum reverse leakage current		Maximum DC Zener Current
	Min V_Z (1)at I_{ZT}	Typ. V_Z (1)at I_{ZT}	Max V_Z (1)at I_{ZT}	I_{ZT}	Z_{ZT} at I_{ZT}	Z_{ZK} at I_{ZK}	I_{ZK}	I_R	Test voltage V_R	I_{ZM}
	V	V	V	mA	Ω	Ω	mA	μA	V	mA
SMB3Z10A	9.50	10.0	10.50	75.0	3.5	700	0.25	10.0	7.6	270.0
SMB3Z11A	10.45	11.0	11.55	68.0	4.0	700	0.25	0.5	8.4	225.0
SMB3Z12A	11.40	12.0	12.60	63.0	4.5	700	0.25	0.5	9.1	246.0
SMB3Z13A	12.35	13.0	13.65	58.0	4.5	700	0.25	0.5	9.9	208.0
SMB3Z14A	13.30	14.0	14.70	53.0	5.0	700	0.25	0.5	10.6	193.0
SMB3Z15A	14.25	15.0	15.75	50.0	5.5	700	0.25	0.5	11.4	180.0
SMB3Z16A	15.20	16.0	16.80	47.0	5.5	700	0.25	0.5	12.2	169.0
SMB3Z17A	16.15	17.0	17.85	44.0	6.0	750.0	0.25	0.5	13.0	159.0
SMB3Z18A	17.10	18.0	18.90	42.0	6.0	750.0	0.25	0.5	13.7	150.0
SMB3Z19A	18.05	19.0	19.95	40.0	7.0	750.0	0.25	0.5	14.4	142.0
SMB3Z20A	19.00	20.0	21.00	37.0	7.0	750.0	0.25	0.5	15.2	135.0
SMB3Z22A	20.90	22.0	23.10	34.0	8.0	750.0	0.25	0.5	16.7	123.0
SMB3Z24A	22.80	24.0	25.20	31.0	9.0	750	0.25	0.5	18.2	112.0
SMB3Z27A	25.65	27.0	28.35	28.0	10.0	750	0.25	0.5	20.6	100.0
SMB3Z30A	28.50	30.0	31.50	25.0	16.0	1000	0.25	0.5	22.5	90.0
SMB3Z33A	31.35	33.0	34.65	23.0	20.0	1000	0.25	0.5	25.1	82.0
SMB3Z36A	34.20	36.0	37.80	21.0	22.0	1000	0.25	0.5	27.4	75.0
SMB3Z39A	37.05	39.0	40.95	19.0	28.0	1000	0.25	0.5	29.7	69.0
SMB3Z43A	40.85	43.0	45.15	17.0	33.0	1500	0.25	0.5	32.7	63.0
SMB3Z47A	44.65	47.0	49.35	16.0	38.0	1500	0.25	0.5	35.6	57.0
SMB3Z51A	48.45	51.0	53.55	15.0	45.0	1500	0.25	0.5	38.8	53.0
SMB3Z56A	53.20	56.0	58.80	13.0	50.0	2000	0.25	0.5	42.6	48.0
SMB3Z62A	58.90	62.0	65.10	12.0	55.0	2000	0.25	0.5	47.1	44.0
SMB3Z68A	64.60	68.0	71.40	11.0	70.0	2000	0.25	0.5	51.7	40.0
SMB3Z75A	71.25	75.0	78.75	10.0	85.0	2000	0.25	0.5	56.0	36.0
SMB3Z82A	77.90	82.0	86.10	9.1	95.0	3000	0.25	0.5	62.2	33.0
SMB3Z91A	86.45	91.0	95.55	8.2	115.0	3000	0.25	0.5	69.2	30.0
SMB3Z100A	95.00	100.0	105.00	7.5	160.0	3000	0.25	0.5	76.0	27.0
SMB3Z110A	104.50	110.0	115.50	6.8	225.0	4000	0.25	0.5	83.6	25.0
SMB3Z120A	114.00	120.0	126.00	6.3	300.0	4500	0.25	0.5	91.2	22.0
SMB3Z130A	123.50	130.0	136.50	5.8	375.0	5000	0.25	0.5	98.8	21.0
SMB3Z140A	133.00	140.0	147.00	5.3	475.0	5000	0.25	0.5	106.4	19.0
SMB3Z150A	142.50	150.0	157.50	5.0	550.0	6000	0.25	0.5	114.0	18.0
SMB3Z160A	152.00	160.0	168.00	4.7	625.0	6500	0.25	0.5	121.6	17.0
SMB3Z170A	161.50	170.0	178.50	4.4	650.0	7000	0.25	0.5	130.4	16.0

Part Number	Nominal Zener voltage			Test current	Maximum dynamic impedance resistance			Maximum reverse leakage current		Maximum DC Zener Current
	Min V_Z (1) at I_{ZT}	Typ. V_Z (1) at I_{ZT}	Max V_Z (1) at I_{ZT}	I_{ZT}	Z_{ZT} at I_{ZT}	Z_{ZK} at I_{ZK}	I_{ZK}	I_R	Test voltage V_R	I_{ZM}
	V	V	V	mA	Ω	Ω	mA	μA	V	mA
SMB3Z180A	171.00	180.0	189.00	4.2	700.0	7000	0.25	0.5	136.8	15.0
SMB3Z190A	180.50	190.0	199.50	4.0	800.0	8000	0.25	0.5	144.8	14.0
SMB3Z200A	190.00	200.0	210.00	3.7	875.0	8000	0.25	0.5	152.0	13.0
SMB3Z210A	199.50	210.0	220.50	3.5	950.0	8300	0.25	0.5	169.0	12.3
SMB3Z220A	209.00	220.0	231.00	3.3	1600.0	8500	0.25	0.5	178.0	11.6
SMB3Z230A	218.50	230.0	241.50	3.1	2000.0	9000	0.25	0.5	186.0	10.9
SMB3Z240A	228.00	240.0	252.00	2.9	2500.0	9000	0.25	0.5	195.0	10.2
SMB3Z250A	237.50	250.0	262.50	2.7	3000.0	9500	0.25	0.5	205.0	9.5

Notes:

（1）Nominal Zener voltage Range：95% Typ.Vz (1)at Izt----105% Typ.Vz (1)at Izt

■ **Characteristics** (Typical)

FIG1: Power Temperature Derating Crue

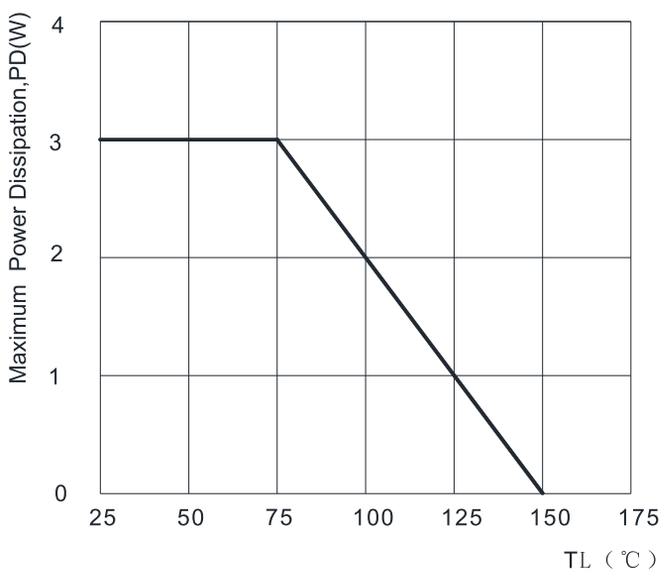


FIG2:Temperature Coefficients v.s. Zener Voltage

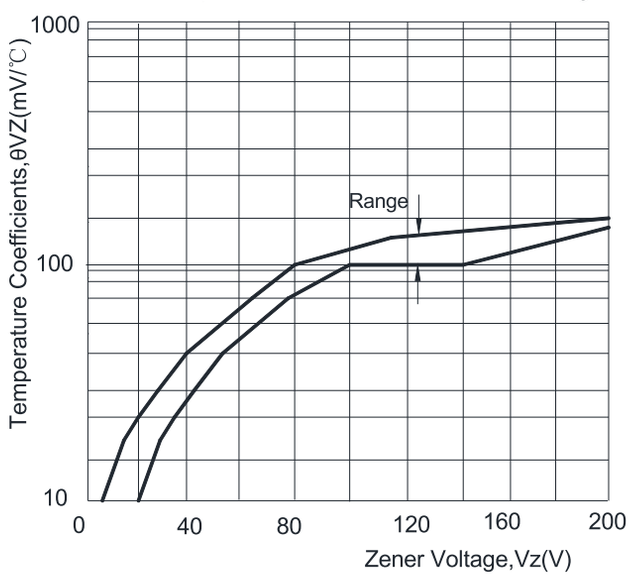


FIG3: Pulse Waveform

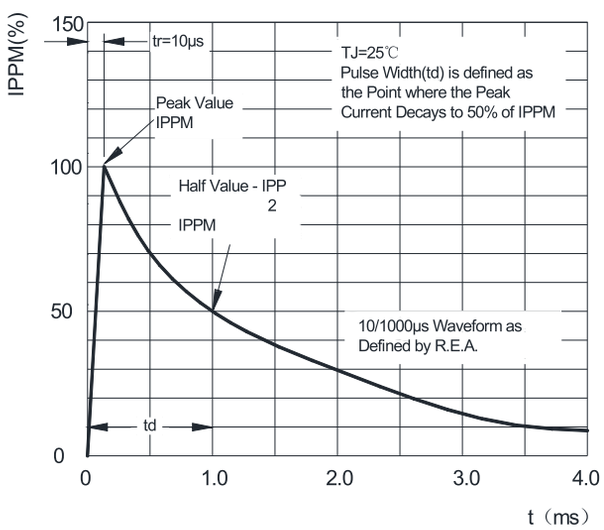
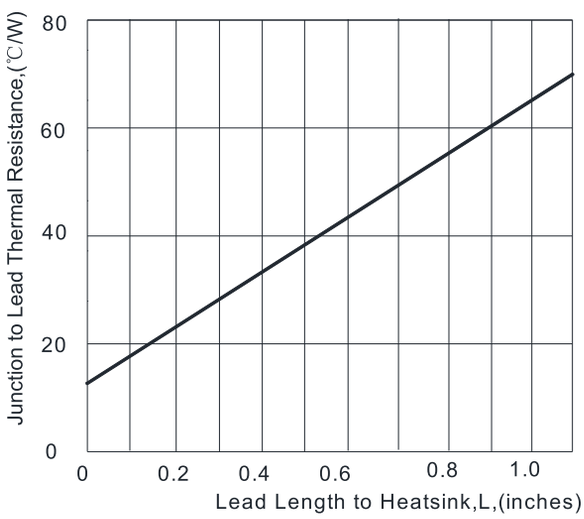


FIG4: Typical Thermal Resistance v.s. Lead Length



■ **Characteristics** (Typical)

FIG5: Maximum Surge Power

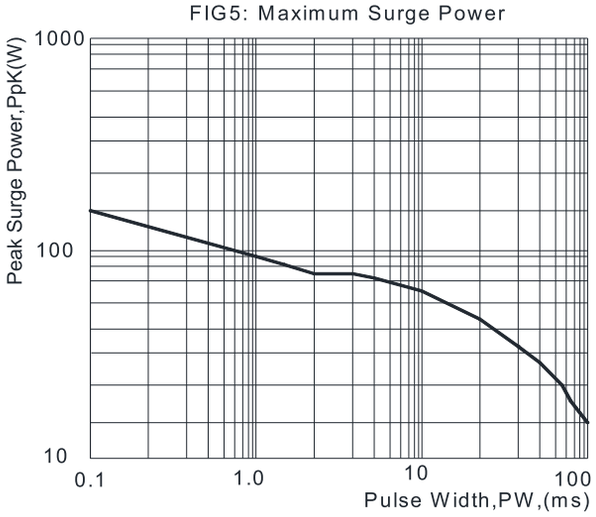
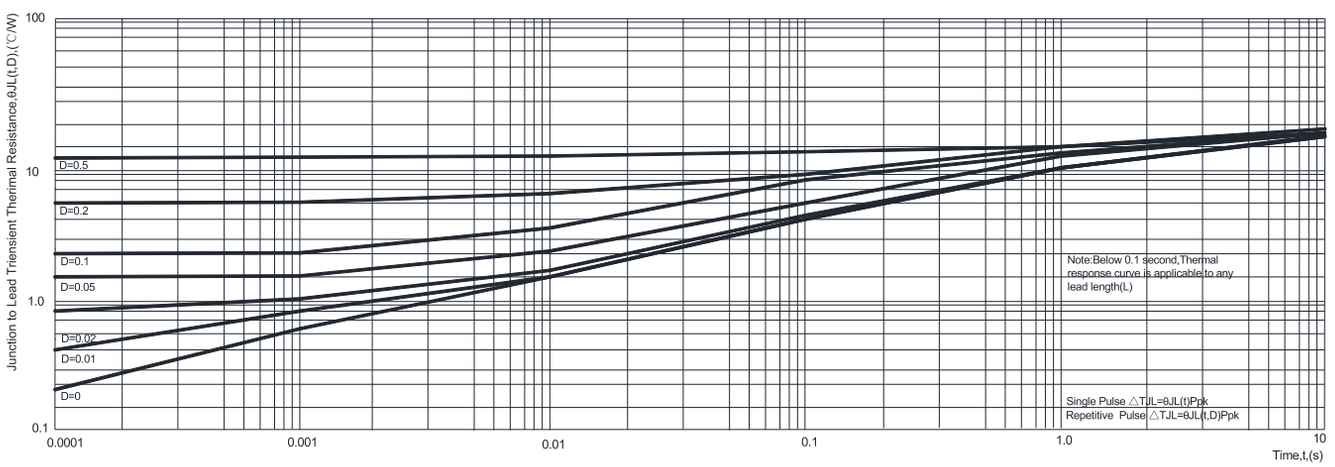


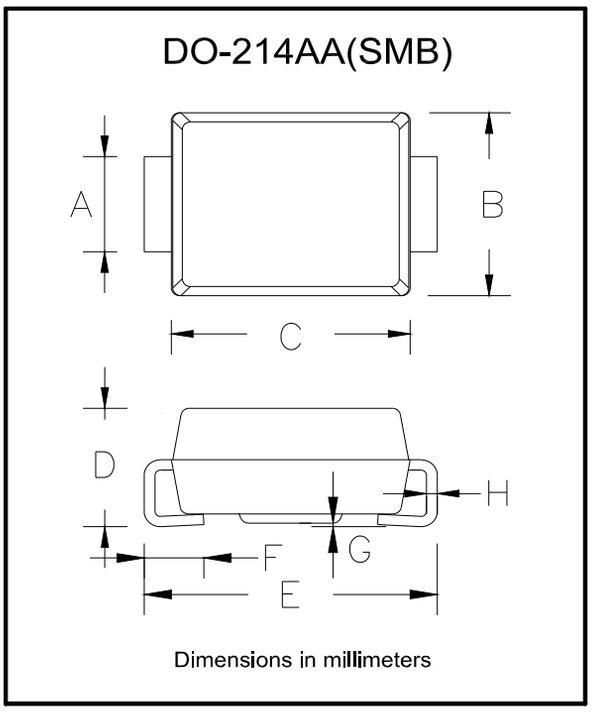
FIG6: Typical Thermal Response L,Lead Length=3/8inch



■**Ordering Information** (Example)

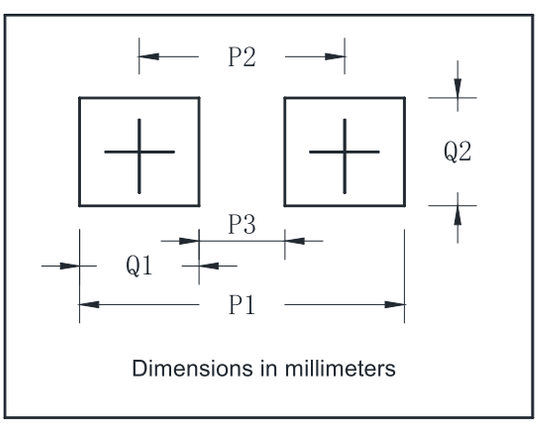
PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
SMB3ZXXA SERIES	F1	Approximate 0.096	3000	/	48000	13” reel
SMB3ZXXA SERIES	F2	Approximate 0.096	750	3000	24000	7” reel
SMB3ZXXA SERIES	F3	Approximate 0.096	500	2000	16000	7” reel

■ Outline Dimensions



DO-214AA(SMB)		
Dim	Min	Max
A	1.85	2.15
B	3.30	3.94
C	4.05	4.75
D	1.99	2.61
E	5.21	5.59
F	0.90	1.41
G	0.05	0.20
H	0.15	0.31

■ Suggested pad layout



DO-214AA(SMB)	
Dim	Millimeters
P1	6.8
P2	4.3
P3	1.8
Q1	2.5
Q2	2.3