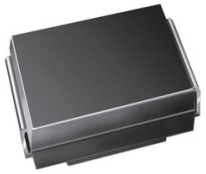
1SMB5913B to 1SMB5956B

Surface Mount Silicon Zener Diodes

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
- RoHS compliant



DO-214AA (SMB)

Mechanical Data

- Case: DO-214AA Molded plastic
- Lead: Solderable per MIL-STD-750, method 2026
- Epoxy: UL 94V-0 rate flame retardant
- Polarity: Color band denotes cathode end
- Mounting position: Any

Major Ratings and Characteristics

V_Z	3.3 to 200V
P_D	3.0W
$T_{Jmax.}$	150°C

Maximum Ratings & Thermal Characteristics

(T_A = 25 °C unless otherwise noted)

Parameter	Symbol	Value	UNIT
DC Power dissipation at TL = 75 °C(1)	P_D	3.0	W
Typical thermal resistance, junction to ambient(1)	$R_{\theta JA}$	100	°C / W
Typical thermal resistance, junction to lead(1)	$R_{\theta JL}$	22	°C / W
Maximum forward voltage at if=200mA	V_F	1.2	V
Junction temperature range	T_J , T_{STG}	-55 to +150	℃
Storage temperature range	T_J , T_{STG}	-55 to +150	℃

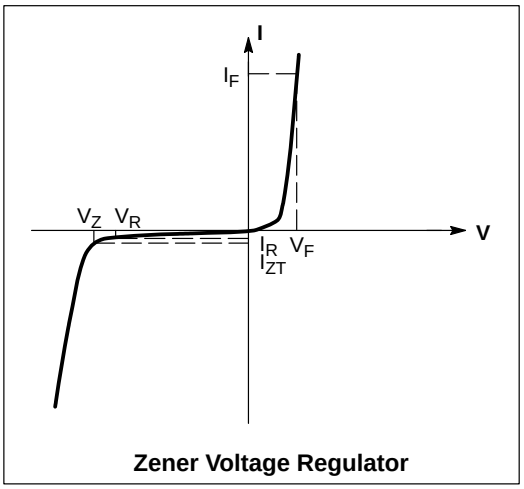
Note :

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

ELECTRICAL CHARACTERISTICS

(T_L = 30°C unless otherwise noted,
V_F = 1.5 V Max. @ I_F = 200 mA(dc) for all types)

Symbol	Parameter
V_Z	Reverse Zener Voltage @ I_{ZT}
I_{ZT}	Reverse Current
Z_{ZT}	Maximum Zener Impedance @ I_{ZT}
I_{ZK}	Reverse Current
Z_{ZK}	Maximum Zener Impedance @ I_{ZK}
I_R	Reverse Leakage Current @ V_R
V_R	Reverse Voltage
I_F	Forward Current
V_F	Forward Voltage @ I_F
I_{ZM}	Maximum DC Zener Current



Zener Voltage Regulator

1SMB5913B to 1SMB5956B

Part Number	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)
1SMB5913B	3.3	3.14	3.47	227.3	10.0	500.0	1.00	100.0	1.0	817.0
1SMB5914B	3.6	3.42	3.78	208.3	9.0	500.0	1.00	100.0	1.0	749.0
1SMB5915B	3.9	3.71	4.10	192.0	4.5	400.0	1.00	100.0	1.0	691.0
1SMB5916B	4.3	4.09	4.52	174.0	4.5	400.0	1.00	50.0	1.0	627.0
1SMB5917B	4.7	4.47	4.94	160.0	4.0	500.0	1.00	50.0	1.0	573.0
1SMB5918B	5.1	4.85	5.36	147.0	3.5	550.0	1.00	10.0	1.0	528.0
1SMB5919B	5.6	5.32	5.88	134.0	2.5	600.0	1.00	10.0	2.0	481.0
1SMB5920B	6.2	5.89	6.51	121.0	1.5	700.0	1.00	10.0	3.0	435.0
1SMB5921B	6.8	6.46	7.14	110.0	2.0	700.0	1.00	10.0	4.0	393.0
1SMB5922B	7.5	7.13	7.88	100.0	2.0	700.0	0.50	10.0	5.0	360.0
1SMB5923B	8.2	7.79	8.61	91.0	2.3	700.0	0.50	10.0	6.0	330.0
1SMB5924B	9.1	8.65	9.56	82.0	2.5	700.0	0.50	10.0	7.0	297.0
1SMB5925B	10.0	9.50	10.50	75.0	3.5	700.0	0.25	10.0	7.6	270.0
1SMB5926B	11.0	10.45	11.55	68.0	4.0	700.0	0.25	0.5	8.4	225.0
1SMB5927B	12.0	11.40	12.60	63.0	4.5	700.0	0.25	0.5	9.1	246.0
1SMB5928B	13.0	12.35	13.65	58.0	4.5	700.0	0.25	0.5	9.9	208.0
1SMB5929B	15.0	14.25	15.75	50.0	5.5	700.0	0.25	0.5	11.4	180.0
1SMB5930B	16.0	15.20	16.80	47.0	5.5	700.0	0.25	0.5	12.2	169.0
1SMB5931B	18.0	17.10	18.90	42.0	6.0	750.0	0.25	0.5	13.7	150.0
1SMB5932B	20.0	19.00	21.00	37.0	7.0	750.0	0.25	0.5	15.2	135.0
1SMB5933B	22.0	20.90	23.10	34.0	8.0	750.0	0.25	0.5	16.7	123.0
1SMB5934B	24.0	22.80	25.20	31.0	9.0	750.0	0.25	0.5	18.2	112.0
1SMB5935B	27.0	25.65	28.35	28.0	10.0	750.0	0.25	0.5	20.6	100.0
1SMB5936B	30.0	28.50	31.50	25.0	16.0	1000.0	0.25	0.5	22.5	90.0
1SMB5937B	33.0	31.35	34.65	23.0	20.0	1000.0	0.25	0.5	25.1	82.0
1SMB5938B	36.0	34.20	37.80	21.0	22.0	1000.0	0.25	0.5	27.4	75.0
1SMB5939B	39.0	37.05	40.95	19.0	28.0	1000.0	0.25	0.5	29.7	69.0
1SMB5940B	43.0	40.85	45.15	17.0	33.0	1500.0	0.25	0.5	32.7	63.0
1SMB5941B	47.0	44.65	49.35	16.0	38.0	1500.0	0.25	0.5	35.6	57.0
1SMB5942B	51.0	48.45	53.55	15.0	45.0	1500.0	0.25	0.5	38.8	53.0
1SMB5943B	56.0	53.20	58.80	13.0	50.0	2000.0	0.25	0.5	42.6	48.0
1SMB5944B	62.0	58.90	65.10	12.0	55.0	2000.0	0.25	0.5	47.1	44.0
1SMB5945B	68.0	64.60	71.40	11.0	70.0	2000.0	0.25	0.5	51.7	40.0
1SMB5946B	75.0	71.25	78.75	10.0	85.0	2000.0	0.25	0.5	56.0	36.0
1SMB5947B	82.0	77.90	86.10	9.1	95.0	3000.0	0.25	0.5	62.2	33.0
1SMB5948B	91.0	86.45	95.55	8.2	115.0	3000.0	0.25	0.5	69.2	30.0
1SMB5949B	100.0	95.00	105.00	7.5	160.0	3000.0	0.25	0.5	76.0	27.0
1SMB5951B	120.0	114.00	126.00	6.3	300.0	4500.0	0.25	0.5	91.2	22.0
1SMB5952B	130.0	123.50	136.50	5.8	375.0	5000.0	0.25	0.5	98.8	21.0
1SMB5953B	150.0	142.50	157.50	5.0	550.0	6000.0	0.25	0.5	114.0	18.0
1SMB5954B	160.0	152.00	168.00	4.7	625.0	6500.0	0.25	0.5	121.6	17.0
1SMB5955B	180.0	171.00	189.00	4.2	700.0	7000.0	0.25	0.5	136.8	15.0
1SMB5956B	200.0	190.00	210.00	3.7	875.0	8000.0	0.25	0.5	152.0	13.0

Ratings and Characteristics Curves (T_A=25℃ unless otherwise noted)

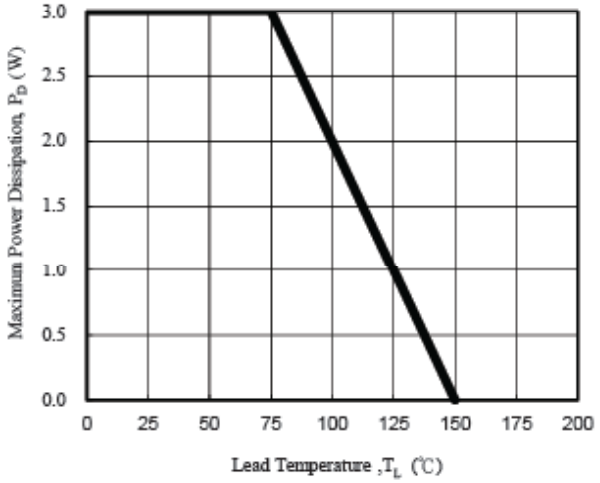


Fig. 1 - Power Temperature Derating Curve

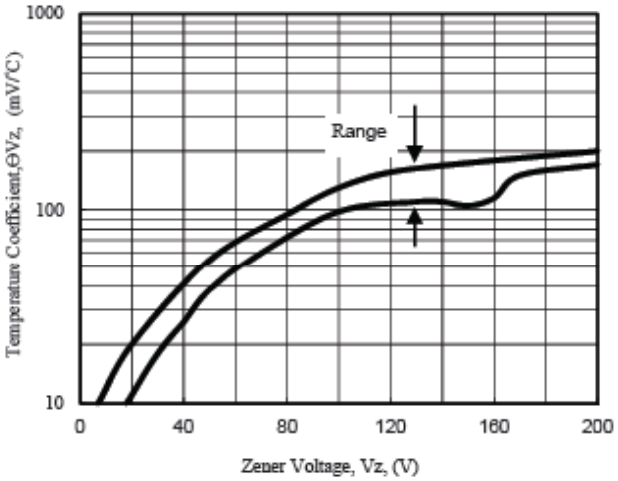


Fig. 2 - Temperature Coefficients v.s. Zener Voltage

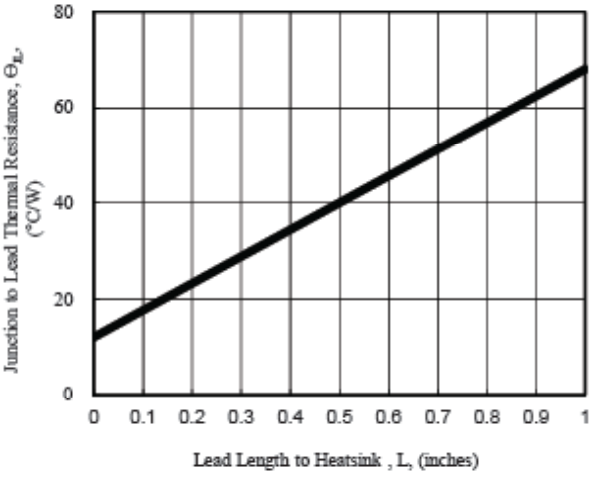


Fig. 3 - Typical Thermal Resistance v.s. Lead Length

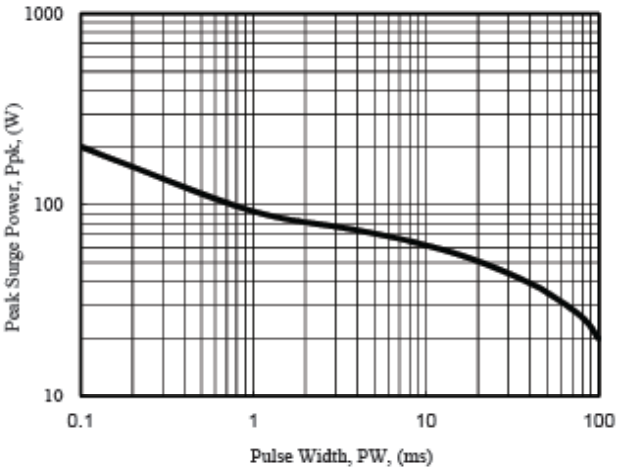


Fig. 4 - Maximum Surge Power

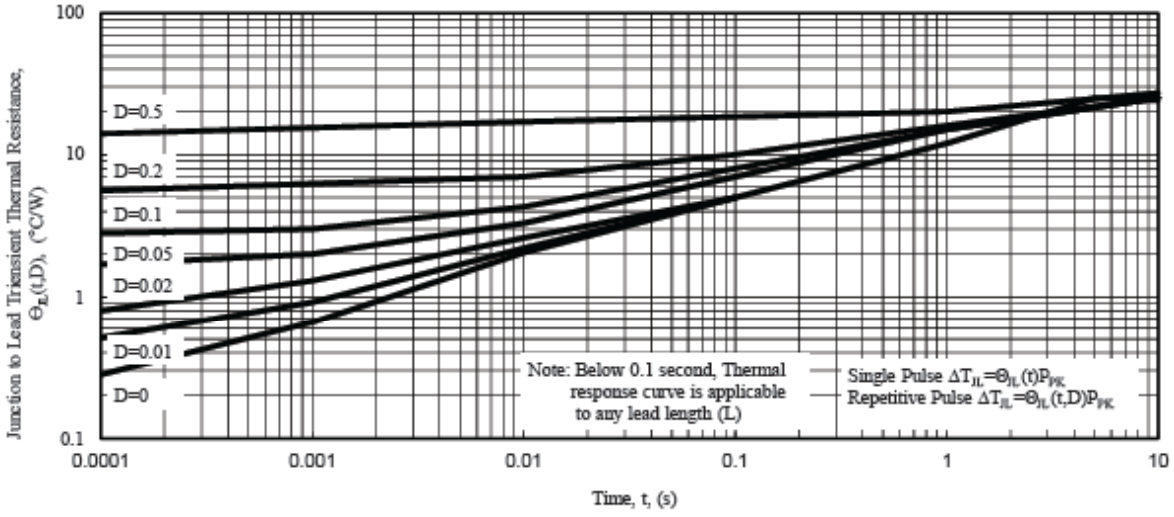
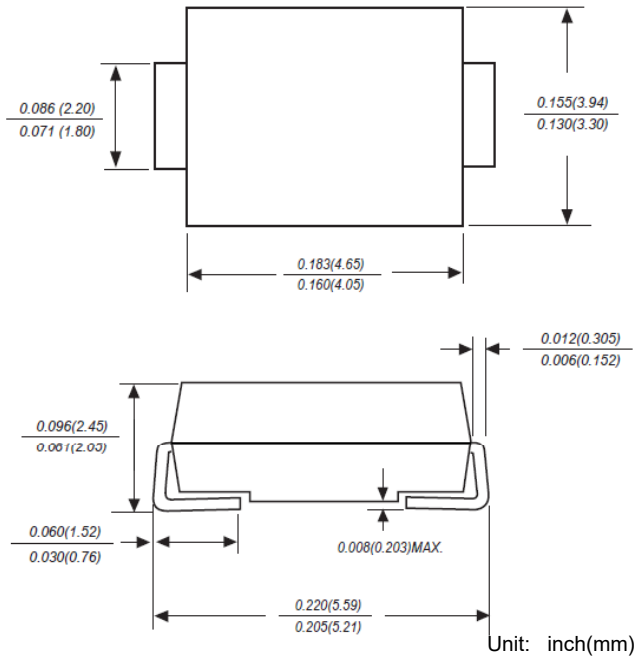


Fig. 5 - Typical Thermal Response L, Lead Length=3/8inch

Package Outline

SMB(DO-214AA)



Unit: inch(mm)

Ordering Information

Outline	Reel (PCS)
Taping	3,000

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