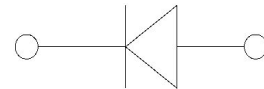
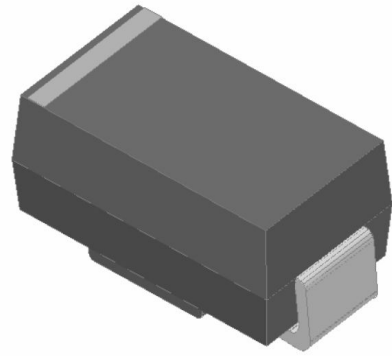


3.0W SURFACE MOUNT POWER ZENER DIODE

■ Features

- 3.0W Power Dissipation
- Ideally Suited for Automated Assembly
- 3.3V - 200V Nominal Zener Voltage Range
- Standard VZ Tolerance is $\pm 5\%$
- ESD Rating of Class 3 (>8kV) per Human Body Model
- Lead-Free Finish; RoHS Compliant



■ Mechanical Data

- Case: SMB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Copper Alloy Leadframe with Lead-Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.096 grams (Approximate)

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Forward Voltage @ $I_F = 200\text{mA}$	V_F	1.5	V
Zener Current (See Page 2)	I_{ZM}	P_D / V_Z	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation @ $T_L = +75^\circ\text{C}$ Derate Above $+75^\circ\text{C}$ (Note 5)	P_D	3.0 40	W mW/ $^\circ\text{C}$
Thermal Resistance - Junction to Terminal (Note 1)	$R_{\theta JT}$	25	$^\circ\text{C/W}$
Power Dissipation @ $T_A = +25^\circ\text{C}$ Derate Above $+25^\circ\text{C}$ (Note 5)	P_D	550 4.4	mW mW/ $^\circ\text{C}$
Thermal Resistance - Junction to Ambient (Note 1)	$R_{\theta JA}$	226	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	$^\circ\text{C}$

Note: 1. Device mounted on FR-4 PCB.

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Type Number	Marking Code	Zener Voltage Range (Note 6)			Test Current	Maximum Zener Impedance (Note 3)			Maximum Reverse Current (Note 2)		I _{ZM} Max
		V _Z @ I _{ZT}				I _{ZT}	Z _{zT} @ I _{ZT}	Z _{zK} @ I _{ZK}		I _R @ V _R	
		Min (V)	Typ (V)	Max (V)	mA	Ω	Ω	mA	μA	V	
1SMB5913B	B913	3.13	3.3	3.47	113.6	10	500	1	100	1	454
1SMB5914B	B914	3.42	3.6	3.78	104.2	9	500	1	75	1	416
1SMB5915B	B915	3.7	3.9	4.1	96.1	7.5	500	1	25	1	384
1SMB5916B	B916	4.08	4.3	4.52	87.2	6	500	1	5	1	348
1SMB5917B	B917	4.46	4.7	4.94	79.8	5	500	1	5	1.5	319
1SMB5920B	B920	5.89	6.2	6.51	60.5	2	200	1	5	4	241
1SMB5921B	B921	6.46	6.8	7.14	55.1	2.5	200	1	5	5.2	220
1SMB5922B	B922	7.12	7.5	7.88	50	3	400	0.5	5	6	200
1SMB5923B	B923	7.79	8.2	8.61	45.7	3.5	400	0.5	5	6.5	182
1SMB5924B	B924	8.64	9.1	9.56	41.2	4	500	0.5	5	7	164
1SMB5925B	B925	9.5	10	10.5	37.5	4.5	500	0.25	5	8	150
1SMB5926B	B926	10.45	11	11.55	34.1	5.5	550	0.25	1	8.4	136
1SMB5927B	B927	11.4	12	12.6	31.2	6.5	550	0.25	1	9.1	125
1SMB5928B	B928	12.35	13	13.65	28.8	7	550	0.25	1	9.9	115
1SMB5929B	B929	14.25	15	15.75	25	9	600	0.25	1	11.4	100
1SMB5930B	B930	15.2	16	16.8	23.4	10	600	0.25	1	12.2	93
1SMB5931B	B931	17.1	18	18.9	20.8	12	650	0.25	1	13.7	83
1SMB5932B	B932	19	20	21	18.7	14	650	0.25	1	15.2	75
1SMB5933B	B933	20.9	22	23.1	17	17.5	650	0.25	1	16.7	68
1SMB5934B	B934	22.8	24	25.2	15.6	19	700	0.25	1	18.2	62
1SMB5935B	B935	25.65	27	28.35	13.9	23	700	0.25	1	20.6	55
1SMB5936B	B936	28.5	30	31.5	12.5	28	750	0.25	1	22.8	50
1SMB5937B	B937	31.35	33	34.65	11.4	33	800	0.25	1	25.1	45
1SMB5938B	B938	34.2	36	37.8	10.4	38	850	0.25	1	27.4	41
1SMB5939B	B939	37.05	39	40.95	9.6	45	900	0.25	1	29.7	38
1SMB5940B	B940	40.85	43	45.15	8.7	53	950	0.25	1	32.7	34
1SMB5941B	B941	44.65	47	49.35	8	67	1000	0.25	1	35.8	31
1SMB5942B	B942	48.45	51	53.55	7.3	70	1100	0.25	1	38.8	29
1SMB5943B	B943	53.2	56	58.8	6.7	86	1300	0.25	1	42.6	26
1SMB5944B	B944	58.9	62	65.1	6	100	1500	0.25	1	47.1	24
1SMB5945B	B945	64.6	68	71.4	5.5	120	1700	0.25	1	51.7	22
1SMB5946B	B946	71.25	75	78.75	5	140	2000	0.25	1	56	20
1SMB5947B	B947	77.9	82	86.1	4.6	160	2500	0.25	1	62.2	18
1SMB5948B	B948	86.45	91	95.55	4.1	200	3000	0.25	1	69.2	16
1SMB5949B	B949	95	100	105	3.7	250	3100	0.25	1	76	15
1SMB5950B	B950	104.5	110	115.5	3.4	300	4000	0.25	1	83.6	13
1SMB5951B	B951	114	120	128	3.1	380	4500	0.25	1	91.2	12
1SMB5952B	B952	123.5	130	136.5	2.9	450	5000	0.25	1	98.8	11
1SMB5953B	B953	142.5	150	157.5	2.5	600	6000	0.25	1	114	10
1SMB5954B	B954	152	160	168	2.3	700	6500	0.25	1	121.6	9
1SMB5955B	B955	171	180	189	2.1	900	7000	0.25	1	136.8	8
1SMB5956B	B956	190	200	210	1.9	1200	8000	0.25	1	152	7

- Notes:
2. Short duration pulse test used to minimize self-heating effect.
 3. ZENER IMPEDANCE (Z_Z) DERIVATION Z_{zT} and Z_{zK} are measured by dividing the AC voltage drop across the device by the AC current applied. The specified limits are for I_{Z(AC)} = 0.1 I_{Z(DC)} with the AC frequency = 60 Hz.

Characteristics(Typical)

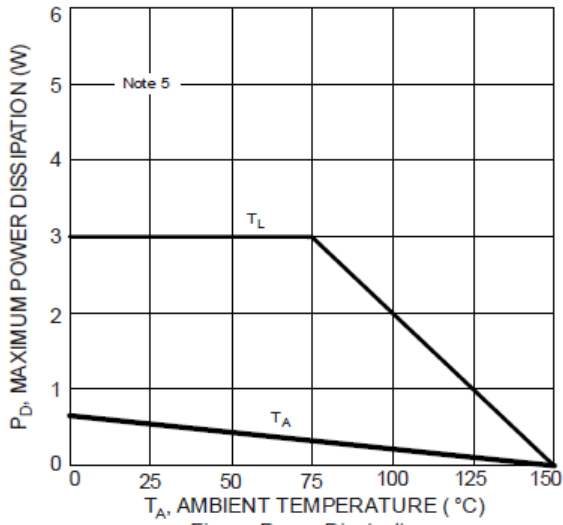


Figure 1 Power Dissipation vs. Ambient Temperature

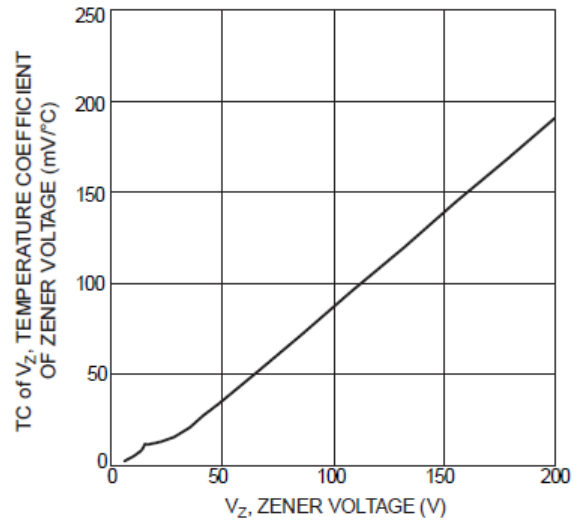


Figure 2 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage

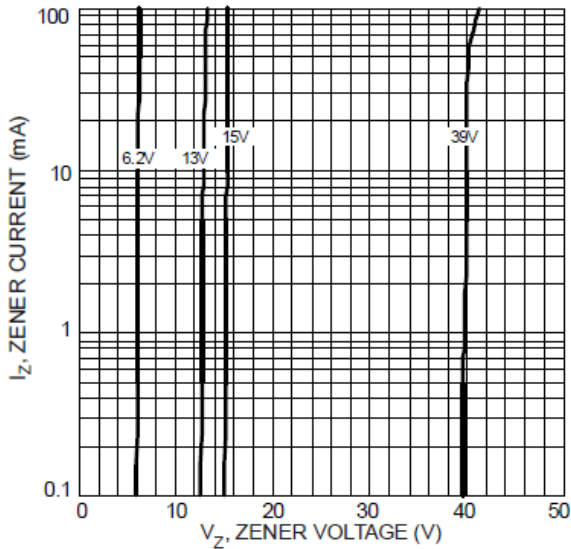


Figure 3 Typical Zener Breakdown Characteristics

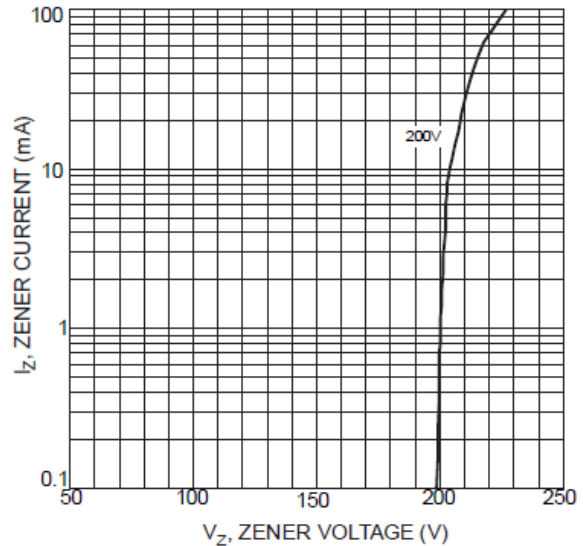


Figure 4 Typical Zener Breakdown Characteristics

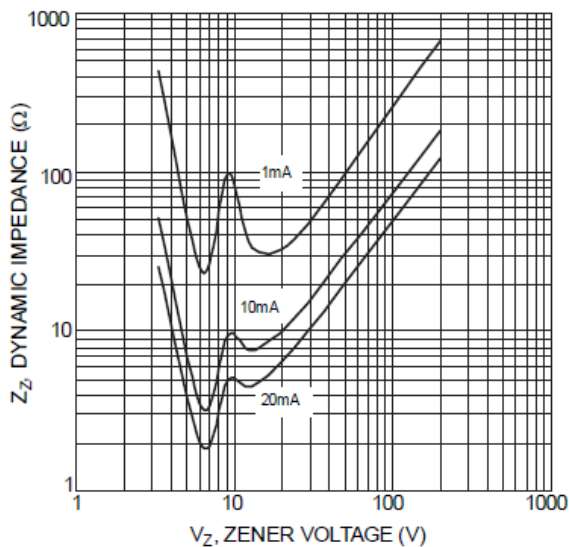


Figure 5 Effect of Zener Voltage

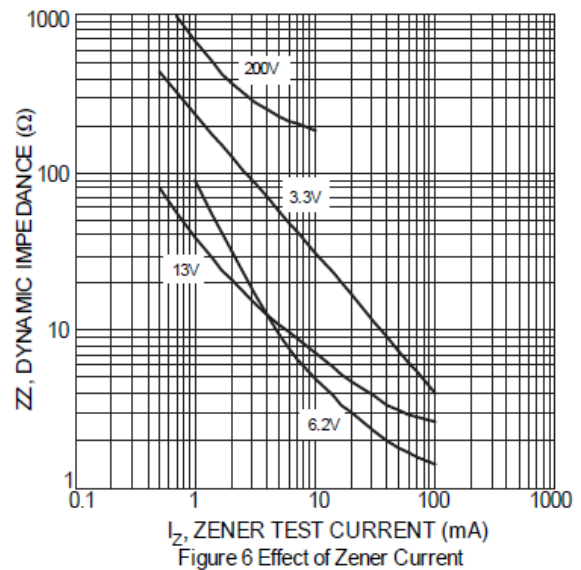


Figure 6 Effect of Zener Current

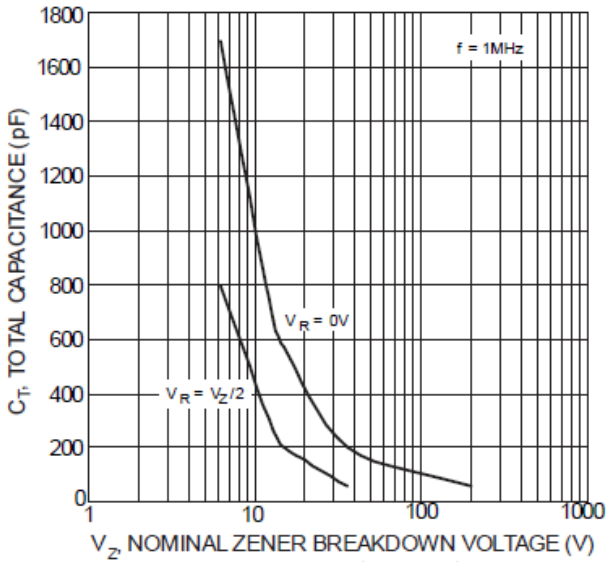


Figure 7 Typical Total Capacitance vs. Nominal Zener Breakdown Voltage

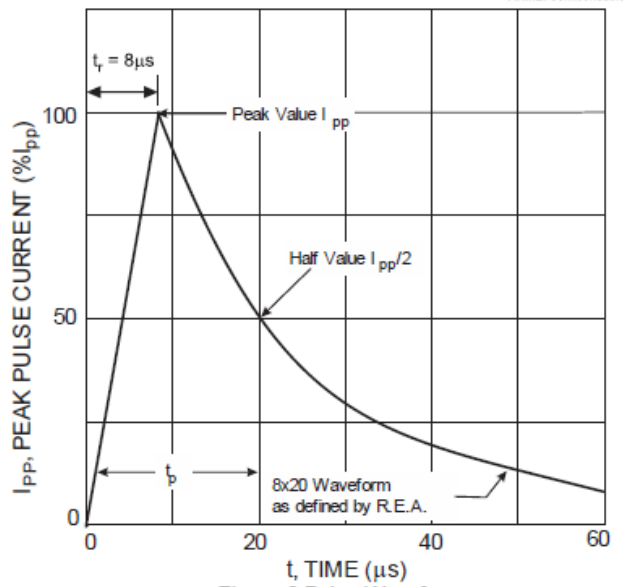


Figure 8 Pulse Waveform

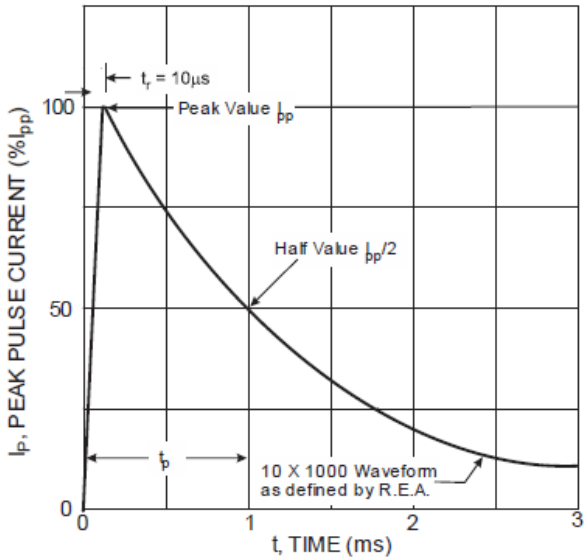


Figure 9 Pulse Waveform

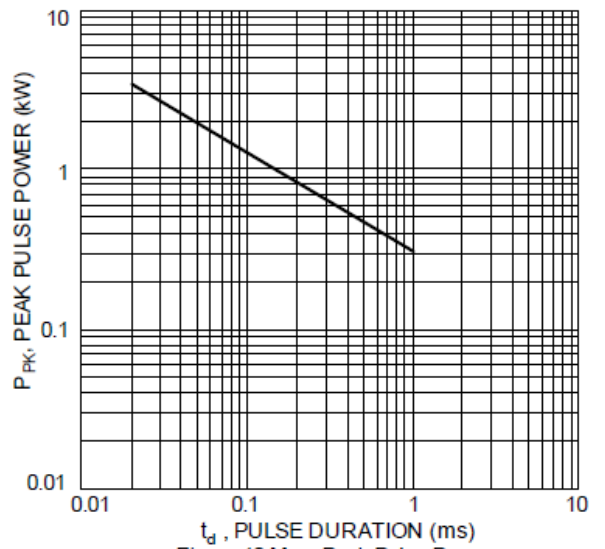
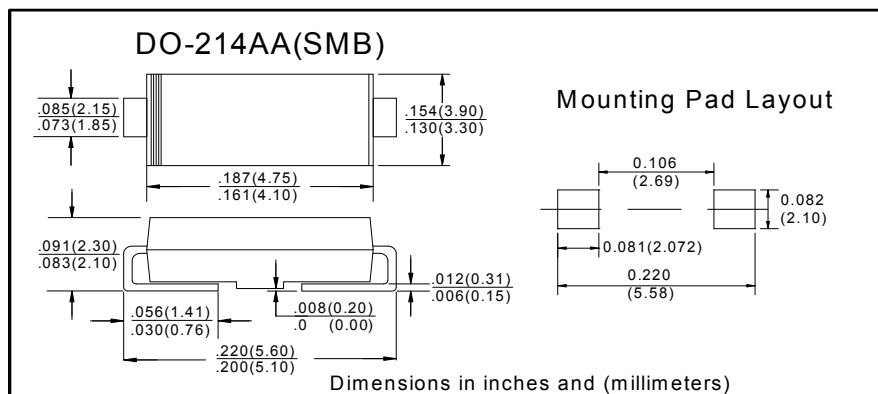


Figure 10 Max. Peak Pulse Power vs. Pulse Duration

Ordering Information (Example)

PREFERRED	PACKAGE CODE	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
GS3AB THRU GS3MB	SMB	3000	6000	48000	13" reel

Outline Dimensions



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