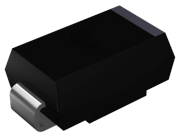
3.0SMBZ10A thru 3.0SMBZ200A

Surface Mount Zener Diodes

Vz Range: 10V to 200V Power Dissipation: 3W

Features

- Total power dissipation: 3.0W
- For use in stabilizing and clipping circuits with high power ratings
- Low leakage current
- Moisture sensitivity: level 1, per J-STD-020
- Solder dip 260°C, 10s



DO-214AA (SMB)

RoHS COMPLIANT

Applications

Protection from high voltage, high energy transients

Mechanical Data

- Case: DO-214AA, molded epoxy body meeting UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002 and JESD22B-106
- Polarity: Indicated by cathode band

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum Steady State Power Dissipation @ T_L=75°C Measured at Zero Lead Length	P_D	3.0	W
Derate Above 75°C		40	mW/°C
Maximum Steady State Power Dissipation @ T_A=25°C		550	mW
Derate Above 25°C		4.4	mW/°C
Thermal Resistance from Junction to Lead	$R_{\theta JL}$	25	°C/W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	226	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

GOOD-ARK SEMICONDUCTOR

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Electrical Characteristics (T_A=25°C unless otherwise noted)

MPN	Marking Code	Zener Voltage @ I_{ZT} V_Z (V)[1]			Test Current	Maximum Zener Impedance[2]			Maximum Reverse Leakage Current		Maximum Regulator Current @ T_A=50°C[3]
		Min	Nom	Max	I_{ZT} (mA)	Z_T @ I_{ZT}	Z_K (Ω)	@ I_{ZK} (mA)	I_R (uA)	V_R (V)	I_{ZM} (mA)
3.0SMBZ10A	925B	9.5	10	10.5	37.5	4.5	500	0.25	2.5	8	300
3.0SMBZ11A	926B	10.45	11	11.55	34.1	5.5	550	0.25	0.5	8.4	272
3.0SMBZ12A	927B	11.4	12	12.6	31.2	6.5	550	0.25	0.5	9.1	250
3.0SMBZ13A	928B	12.35	13	13.65	28.8	7	550	0.25	0.5	9.9	230
3.0SMBZ15A	929B	14.25	15	15.75	25	9	600	0.25	0.5	11.4	200
3.0SMBZ16A	930B	15.2	16	16.8	23.4	10	600	0.25	0.5	12.2	186
3.0SMBZ18A	931B	17.1	18	18.9	20.8	12	650	0.25	0.5	13.7	166
3.0SMBZ20A	932B	19	20	21	18.7	14	650	0.25	0.5	15.2	150
3.0SMBZ22A	933B	20.9	22	23.1	17	17.5	650	0.25	0.5	16.7	156
3.0SMBZ24A	934B	22.8	24	25.2	15.6	19	700	0.25	0.5	18.2	124
3.0SMBZ27A	935B	25.65	27	28.35	13.9	23	700	0.25	0.5	20.6	110
3.0SMBZ30A	936B	28.5	30	31.5	12.5	26	750	0.25	0.5	22.8	100
3.0SMBZ33A	937B	31.35	33	34.65	11.4	33	800	0.25	0.5	25.1	90
3.0SMBZ36A	938B	34.2	36	37.8	10.4	38	850	0.25	0.5	27.4	82
3.0SMBZ39A	939B	37.05	39	40.95	9.6	45	900	0.25	0.5	29.7	76
3.0SMBZ43A	940B	40.85	43	45.15	8.7	53	950	0.25	0.5	32.7	68
3.0SMBZ47A	941B	44.65	47	49.35	8	67	1000	0.25	0.5	35.8	62
3.0SMBZ51A	942B	48.45	51	53.55	7.3	70	1100	0.25	0.5	38.8	58
3.0SMBZ56A	943B	53.2	56	58.8	6.7	86	1300	0.25	0.5	42.6	52
3.0SMBZ62A	944B	58.9	62	65.1	6	100	1500	0.25	0.5	47.1	48
3.0SMBZ68A	945B	64.6	68	71.4	5.5	120	1700	0.25	0.5	51.7	44
3.0SMBZ75A	946B	71.25	75	78.75	5	140	2000	0.25	1	56	40
3.0SMBZ82A	947B	77.9	82	86.1	4.6	160	2500	0.25	1	62.2	36
3.0SMBZ91A	948B	86.45	91	95.55	4.1	200	3000	0.25	1	69.2	32
3.0SMBZ100A	949B	95	100	105	3.7	250	3100	0.25	1	76	30
3.0SMBZ110A	950B	104.5	110	115.5	3.4	300	4000	0.25	1	83.6	26
3.0SMBZ120A	951B	114	120	126	3.1	380	4500	0.25	1	91.2	24
3.0SMBZ130A	952B	123.5	130	136.5	2.9	450	5000	0.25	1	98.8	22
3.0SMBZ150A	953B	142.5	150	157.5	2.5	600	6000	0.25	1	114	20
3.0SMBZ160A	954B	152	160	168	2.3	700	6500	0.25	1	121.6	18
3.0SMBZ180A	955B	171	180	189	2.1	900	7000	0.25	1	136.8	16
3.0SMBZ200A	956B	190	200	210	1.9	1200	8000	0.25	1	152	14

Notes:

1. Standard voltage tolerance is ±5%.
2. The Zener impedance is derived from the 1KHz AC voltage, which results when an AC current having an RMS value equal to 10% of the Zener current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK}. Zener impedance is measure at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units.
3. Valid provided that electrodes at a distance of 10mm from case are kept at ambient temperature.

3.0SMBZ10A thru 3.0SMBZ200A

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Typical Electrical Characteristic Curves

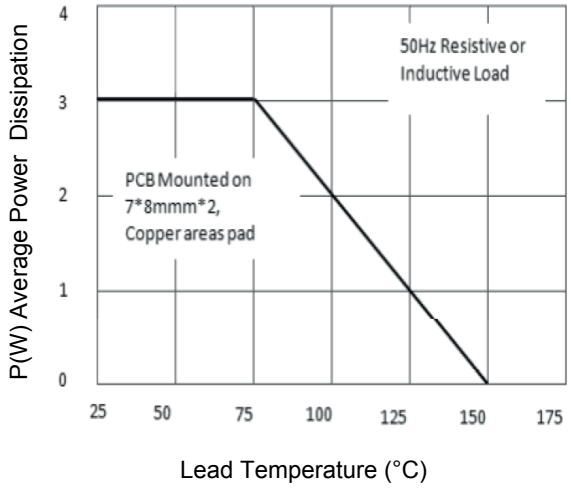

Figure 1. Maximum Continuous Power Dissipation

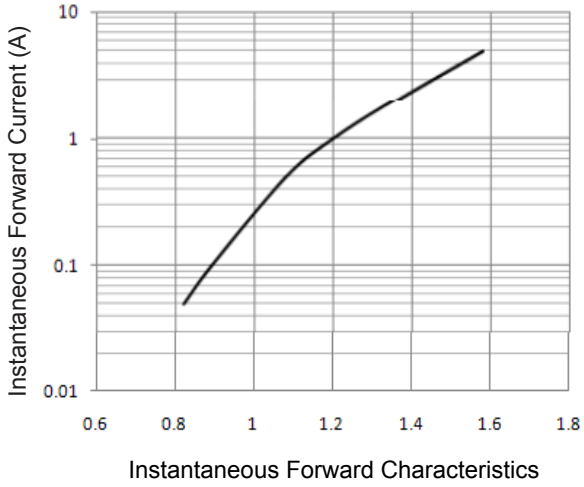

Figure 2. Typical Instantaneous Forward Characteristics

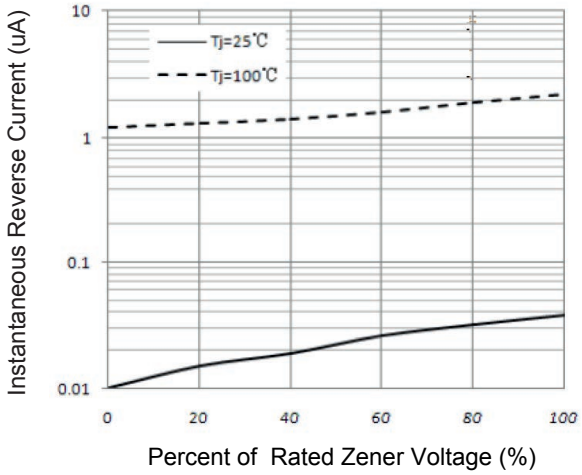

Figure 3. Typical Reverse Characteristics

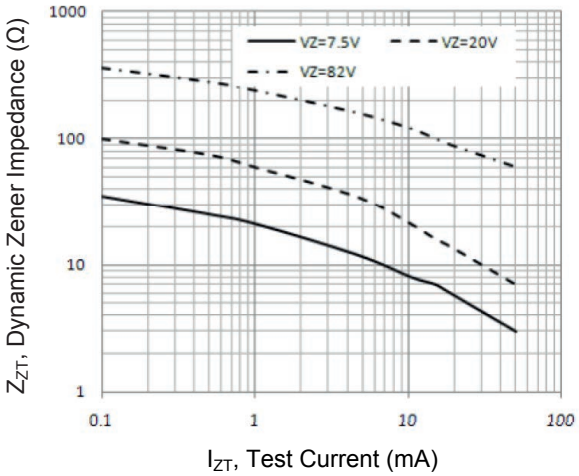

Figure 4. Typical Zener Impedance

3.0SMBZ10A thru 3.0SMBZ200A

Surface Mount Zener Diodes

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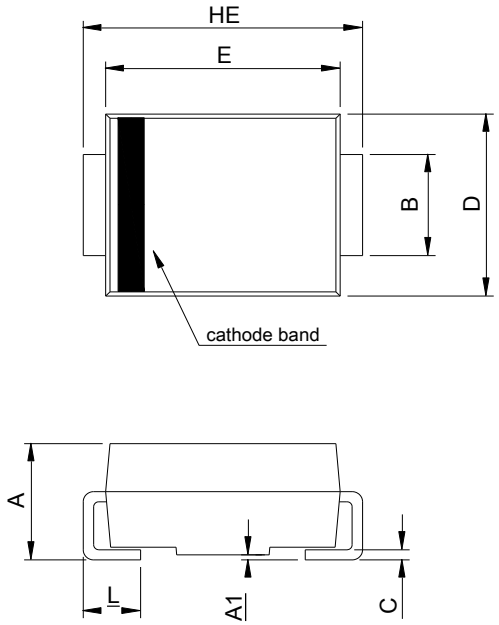
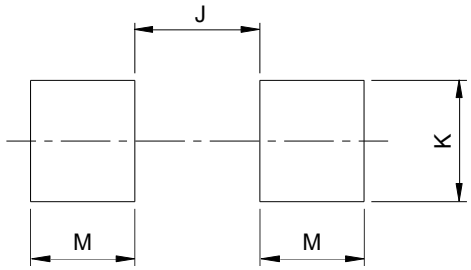
Package Outline Dimensions DO-214AA (SMB)



SMB (DO-214AA)				
DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.95	2.65	0.077	0.104
A1	0.00	0.20	0.000	0.008
B	1.95	2.20	0.077	0.087
C	0.15	0.31	0.006	0.012
D	3.30	3.95	0.130	0.156
E	4.06	4.60	0.160	0.181
HE	5.10	5.60	0.201	0.220
L	0.76	1.60	0.030	0.063

Recommended Pad Layout



Recommended Pad Layout (Reference ONLY)				
DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	-	2.60	-	0.102
K	2.20	-	0.087	-
M	1.80	-	0.071	-