Microsemi

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SMBJ5221 thru SMBJ5281

SILICON 1 WATT ZENER DIODES

FEATURES:

- Popular SMBJ Package - Small and Rugged Surface Mount
- Constructed with an Oxide Passivated Die
- Voltage Range 2.4 to 200 Volts
- Tight Tolerance Available

MAXIMUM RATINGS:

- Operating & Storage Temperature: -55°C to +150°C
- DC Power Dissipation: 1 Watt
- Power Derating: 20 mW/°C above 100°C
- Forward voltage @ 200mA: 1.1V

MECHANICAL CHARACTERISTICS:

CASE: DO-214AA Molded Surface Mountable with flame retardant epoxy meeting UL94V-0

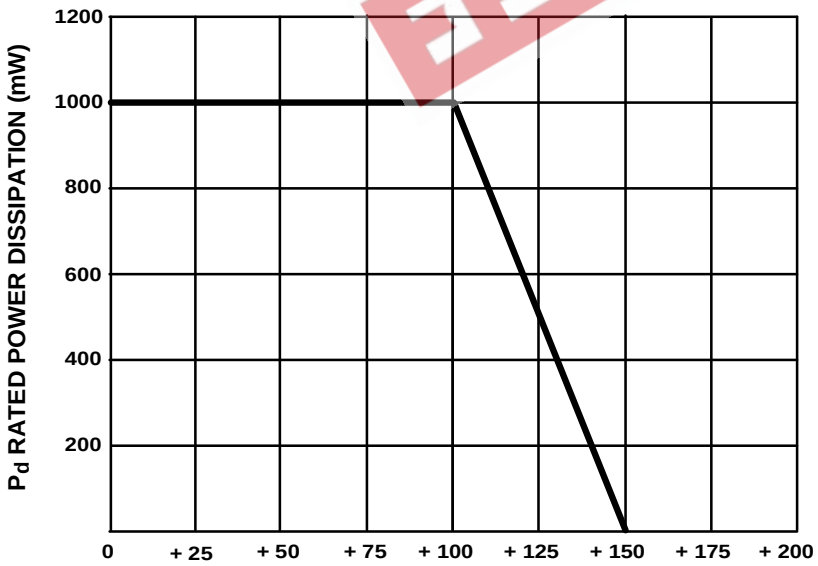
Terminals: C-bend (modified J-bend) leads, tin lead plated.

Polarity: Cathode indicated by band.

Packaging: Standard 12mm tape (see EIA Std. RS-481).

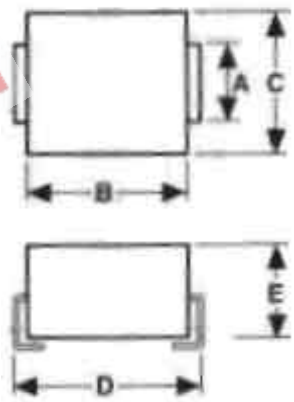
THERMAL RESISTANCE: 50°C/ Watt (typical) junction to lead (tab) at mounting plane.

MAXIMUM TEMPERATURE FOR SOLDERING: 260°C for 10 seconds.



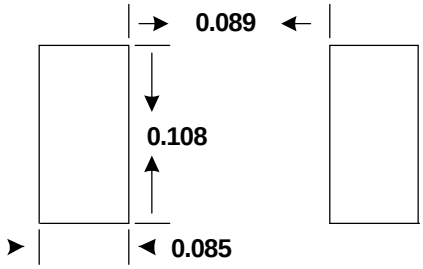
POWER DERATING CURVE

SMBJ



Dimensions in Inches					
	A	B	C	D	E
MIN.	.077	.160	.130	.205	.075
MAX.	.083	.180	.155	.220	.095
Dimensions in Millimeters					
MIN.	1.96	4.06	3.30	5.21	1.90
MAX.	2.10	4.57	3.94	5.59	2.41

Modified J-Bend



ISO 9001 CERTIFIED

ELECTRICAL CHARACTERISTICS @ 25°C

JEDEC Type No. Note 1	Nominal Zener Voltage V_Z @ I_{ZT} Volts	Test Current I_{ZT} mA	Max Zener Impedance A & B Suffix Only Note 2		Max Reverse Leakage Current				Max Zener Volatage Temp. Coeff. (A & B Suffix Only) α_{VZ}(% / °C)
					A, B, C & D Suffix Only			Non-Suffix	
			Z_{ZT} @ I_{ZT} Ohms	Z_{ZK} @ I_{ZK} = 0.25 mA Ohms	I_R µA	@ V_R Volts A	B, C & D	I_R @ V_R Used For Suffix A µA	
SMBJ5221	2.4	20	30	1200	100	0.95	1.0	200	-0.085
SMBJ5222	2.5	20	30	1250	100	0.95	1.0	200	-0.085
SMBJ5223	2.7	20	30	1300	75	0.95	1.0	150	-0.080
SMBJ5224	2.8	20	30	1400	75	0.95	1.0	150	-0.080
SMBJ5225	3.0	20	29	1600	50	0.95	1.0	100	-0.075
SMBJ5226	3.3	20	28	1600	25	0.95	1.0	100	-0.070
SMBJ5227	3.6	20	24	1700	15	0.95	1.0	100	-0.065
SMBJ5228	3.9	20	23	1900	10	0.95	1.0	75	-0.060
SMBJ5229	4.3	20	22	2000	5.0	0.95	1.0	50	±0.055
SMBJ5230	4.7	20	19	1900	5.0	1.9	2.0	50	±0.030
SMBJ5231	5.1	20	17	1600	5.0	1.9	2.0	50	±0.030
SMBJ5232	5.6	20	11	1600	5.0	2.9	3.0	50	+0.038
SMBJ5233	6.0	20	7.0	1600	5.0	3.3	3.5	50	+0.038
SMBJ5234	6.2	20	7.0	1000	5.0	3.8	4.0	50	+0.045
SMBJ5235	6.8	20	5.0	750	3.0	4.8	5.0	30	+0.050
SMBJ5236	7.5	20	6.0	500	3.0	5.7	6.0	30	+0.058
SMBJ5237	8.2	20	8.0	500	3.0	6.2	6.5	30	+0.062
SMBJ5238	8.7	20	8.0	600	3.0	6.2	6.5	30	+0.065
SMBJ5239	9.1	20	10	600	3.0	6.7	7.0	30	+0.068
SMBJ5240	10	20	17	600	3.0	7.6	8.0	30	+0.075
SMBJ5241	11	20	22	600	2.0	8.0	8.4	30	+0.076
SMBJ5242	12	20	30	600	1.0	8.7	9.1	10	+0.077
SMBJ5243	13	9.5	13	600	0.5	9.4	9.9	10	+0.079
SMBJ5244	14	9.0	15	600	0.1	9.5	10	10	+0.082
SMBJ5245	15	8.5	16	600	0.1	10.5	11	10	+0.082
SMBJ5246	16	7.8	17	600	0.1	11.4	12	10	+0.083
SMBJ5247	17	7.4	19	600	0.1	12.4	13	10	+0.084
SMBJ5248	18	7.0	21	600	0.1	13.3	14	10	+0.085
SMBJ5249	19	6.6	23	600	0.1	13.3	14	10	+0.086
SMBJ5250	20	6.2	25	600	0.1	14.3	15	10	+0.086
SMBJ5251	22	5.6	29	600	0.1	16.2	17	10	+0.087
SMBJ5252	24	5.2	33	600	0.1	17.1	18	10	+0.088
SMBJ5253	25	5.0	35	600	0.1	18.1	19	10	+0.089
SMBJ5254	27	4.6	41	600	0.1	20	21	10	+0.090
SMBJ5255	28	4.5	44	600	0.1	20	21	10	+0.091
SMBJ5256	30	4.2	49	600	0.1	22	23	10	+0.091
SMBJ5257	33	3.8	58	700	0.1	24	25	10	+0.092
SMBJ5258	36	3.4	70	700	0.1	26	27	10	+0.093
SMBJ5259	39	3.2	80	800	0.1	29	30	10	+0.094
SMBJ5260	43	3.0	93	900	0.1	31	33	10	+0.095
SMBJ5261	47	2.7	105	1000	0.1	34	36	10	+0.095
SMBJ5262	51	2.5	125	1100	0.1	37	39	10	+0.096
SMBJ5263	56	2.2	150	1300	0.1	41	43	10	+0.096
SMBJ5264	60	2.1	170	1400	0.1	44	46	10	+0.097
SMBJ5265	62	2.0	185	1400	0.1	45	47	10	+0.097
SMBJ5266	68	1.8	230	1600	0.1	49	52	10	+0.097
SMBJ5267	75	1.7	270	1700	0.1	53	56	10	+0.098
SMBJ5268	82	1.5	330	2000	0.1	59	62	10	+0.098
SMBJ5269	87	1.4	370	2200	0.1	65	68	10	+0.099
SMBJ5270	91	1.4	400	2300	0.1	66	69	10	+0.099
SMBJ5271	100	1.3	500	2600	0.1	72	76	10	+0.110
SMBJ5272	110	1.1	750	3000	0.1	80	84	10	+0.110
SMBJ5273	120	1.0	900	4000	0.1	86	91	10	+0.110
SMBJ5274	130	0.95	1100	4500	0.1	94	99	10	+0.110
SMBJ5275	140	0.90	1300	4500	0.1	101	106	10	+0.110
SMBJ5276	150	0.85	1500	5000	0.1	108	114	10	+0.110
SMBJ5277	160	0.80	1700	5500	0.1	116	122	10	+0.110
SMBJ5278	170	0.74	1900	5500	0.1	123	129	10	+0.110
SMBJ5279	180	0.68	2200	6000	0.1	130	137	10	+0.110
SMBJ5280	190	0.66	2400	6500	0.1	137	144	10	+0.110
SMBJ5281	200	0.65	2500	7000	0.1	144	152	10	+0.110

Note 1.
No suffix indicates a ± 20% tolerance on nominal V_Z. Suffix A denotes a ± 10% tolerance, B denotes a ± 5% tolerance, C denotes a ± 2% tolerance, and D denotes a ± 1% tolerance. The electrical characteristics are measured after allowing the device to stabilize for 20 seconds when mounted on a heat sink.

Note 2.
The zener impedance is derived from the 60 Hz ac voltage, which results when an ac current having an r.m.s. valued equal to 10% of the dc zener current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK}. Zener impedance is measured at two points to insure a sharp knee on the breakdown curve, thereby eliminating unstable units.