

SMBJ5338A - SMBJ5388A SURFACE MOUNT SILICON ZENER DIODES

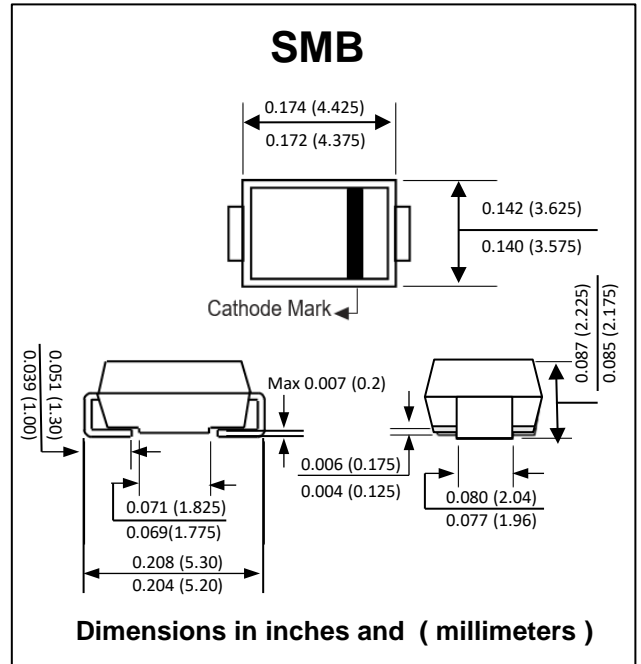
V_Z : 5.1 - 200 Volts
P_D : 5 Watts

FEATURES :

- * Complete Voltage Range 5.1 to 200 Volts
- * High peak reverse power dissipation
- * High reliability
- * Low leakage current
- * **Pb / RoHS Free**

MECHANICAL DATA

- * Case : SMB Molded plastic
- * Epoxy : UL94V-0 rate flame retardant
- * Lead : Lead Formed for Surface Mount
- * Polarity : Color band denotes cathode end
- * Mounting position : Any
- * Weight : 0.108 gram



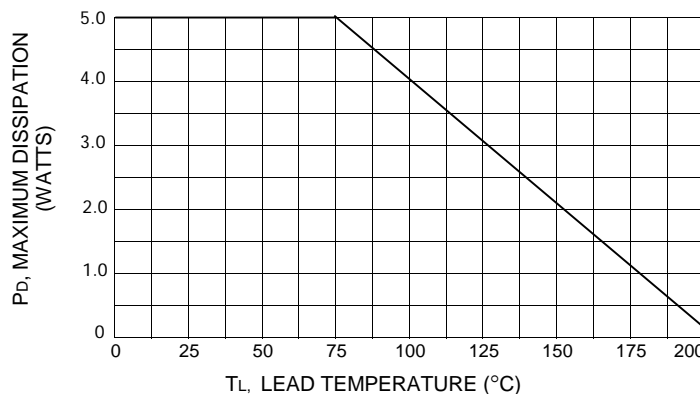
MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified

Rating	Symbol	Value	Unit
Power Dissipation at T _L = 75 °C	P _D	5	W
Maximum Forward Voltage at I _F = 1.0 A	V _F	1.2	V
Thermal Resistance, Junction to Ambient (Note 1)	R _{θJA}	90	°C/W
Thermal Resistance, Junction to Lead (Note 1)	R _{θJL}	25	°C/W
Thermal Resistance, Junction to Case	R _{θJC}	40	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	- 65 to + 200	°C

Note : (1) When mounted on FR4 PC board (1 oz Cu) with recommended footprint.

Fig. 1 POWER DERATING CURVE





ELECTRICAL CHARACTERISTICS (Rating at 25 °C ambient temperature unless otherwise specified)

TYPE	Regulator Voltage		Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum Zener Current	Maximum Surge Current	Maximum Voltage
	$V_Z @ I_{ZT}$	I_{ZT}	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	I_{ZK}	$I_R @ V_R$		I_{ZM}	I_{ZSM}	Regulator
	(V)	(mA)	(Ω)	(Ω)	(mA)	(μ A)	(V)	(mA)	(A)	ΔV_Z
SMBJ5338A	5.1	240	1.5	400	1.0	1.0	1.0	930	14.4	0.39
SMBJ5339A	5.6	220	1.0	400	1.0	1.0	2.0	865	13.4	0.25
SMBJ5340A	6.0	200	1.0	300	1.0	1.0	3.0	790	12.7	0.19
SMBJ5341A	6.2	200	1.0	200	1.0	1.0	3.0	765	12.4	0.10
SMBJ5342A	6.8	175	1.0	200	1.0	10	4.9	700	11.5	0.15
SMBJ5343A	7.5	175	1.5	200	1.0	10	5.4	630	10.7	0.15
SMBJ5344A	8.2	150	1.5	200	1.0	10	5.9	580	10.0	0.20
SMBJ5345A	8.7	150	2.0	200	1.0	10	6.25	545	9.5	0.20
SMBJ5346A	9.1	150	2.0	150	1.0	7.5	6.6	520	9.2	0.22
SMBJ5347A	10	125	2.0	125	1.0	5.0	7.2	475	8.6	0.22
SMBJ5348A	11	125	2.5	125	1.0	5.0	8.0	430	8.0	0.25
SMBJ5349A	12	100	2.5	125	1.0	2.0	8.6	395	7.5	0.25
SMBJ5350A	13	100	2.5	100	1.0	1.0	9.4	365	7.0	0.25
SMBJ5351A	14	100	2.5	75	1.0	1.0	10.1	340	6.7	0.25
SMBJ5352A	15	75	2.5	75	1.0	1.0	10.8	315	6.3	0.25
SMBJ5353A	16	75	2.5	75	1.0	1.0	11.5	295	6.0	0.30
SMBJ5354A	17	70	2.5	75	1.0	0.5	12.2	280	5.8	0.35
SMBJ5355A	18	65	2.5	75	1.0	0.5	13.0	265	5.5	0.40
SMBJ5356A	19	65	3.0	75	1.0	0.5	13.7	250	5.3	0.40
SMBJ5357A	20	65	3.0	75	1.0	0.5	14.4	237	5.1	0.40
SMBJ5358A	22	50	3.5	75	1.0	0.5	15.8	216	4.7	0.45
SMBJ5359A	24	50	3.5	100	1.0	0.5	17.3	198	4.4	0.55
SMBJ5360A	25	50	4.0	110	1.0	0.5	18.0	190	4.3	0.55
SMBJ5361A	27	50	5.0	120	1.0	0.5	19.4	176	4.1	0.60
SMBJ5362A	28	50	6.0	130	1.0	0.5	20.1	170	3.9	0.60
SMBJ5363A	30	40	8.0	140	1.0	0.5	21.6	158	3.7	0.60
SMBJ5364A	33	40	10	150	1.0	0.5	23.8	144	3.5	0.60
SMBJ5365A	36	30	11	160	1.0	0.5	25.9	132	3.3	0.65
SMBJ5366A	39	30	14	170	1.0	0.5	28.1	122	3.1	0.65
SMBJ5367A	43	30	20	190	1.0	0.5	31.0	110	2.8	0.70
SMBJ5368A	47	25	25	210	1.0	0.5	33.8	100	2.7	0.80
SMBJ5369A	51	25	27	230	1.0	0.5	36.7	93.0	2.5	0.90
SMBJ5370A	56	20	35	280	1.0	0.5	40.3	86.0	2.3	1.00
SMBJ5371A	60	20	40	350	1.0	0.5	43.0	79.0	2.2	1.20
SMBJ5372A	62	20	42	400	1.0	0.5	44.6	76.0	2.1	1.35
SMBJ5373A	68	20	44	500	1.0	0.5	49.0	70.0	2.0	1.50
SMBJ5374A	75	20	45	620	1.0	0.5	54.0	63.0	1.9	1.60
SMBJ5375A	82	15	65	720	1.0	0.5	59.0	58.0	1.8	1.80
SMBJ5376A	87	15	75	760	1.0	0.5	63.0	54.5	1.7	2.00
SMBJ5377A	91	15	75	760	1.0	0.5	65.5	52.5	1.6	2.20
SMBJ5378A	100	12	90	800	1.0	0.5	72.0	47.5	1.5	2.30
SMBJ5379A	110	12	125	1000	1.0	0.5	79.2	43.0	1.4	2.50
SMBJ5380A	120	10	170	1150	1.0	0.5	86.4	39.5	1.3	2.50
SMBJ5381A	130	10	190	1250	1.0	0.5	93.2	36.6	1.2	2.50
SMBJ5382A	140	8.0	230	1500	1.0	0.5	101	34.0	1.2	2.50
SMBJ5383A	150	8.0	330	1500	1.0	0.5	108	31.6	1.1	3.00
SMBJ5384A	160	8.0	350	1650	1.0	0.5	115	29.4	1.1	3.00
SMBJ5385A	170	8.0	380	1750	1.0	0.5	122	28.0	1.0	3.00
SMBJ5386A	180	5.0	430	1750	1.0	0.5	130	26.4	1.0	4.00
SMBJ5387A	190	5.0	450	1850	1.0	0.5	137	25.0	0.9	5.00
SMBJ5388A	200	5.0	480	1850	1.0	0.5	144	23.6	0.9	5.00

Notes : (1) Suffix " A " indicates $\pm 10\%$ tolerance, suffix " B " indicates $\pm 5\%$ tolerance

(2) The surge current (I_{ZSM}) is specified as the maximum peak of a non- recurrent half-sin wave of 8.3 ms duration.

(3) Voltage regulation (V_Z) is the difference between the voltage measured at 10% and 50% of I_{ZM}