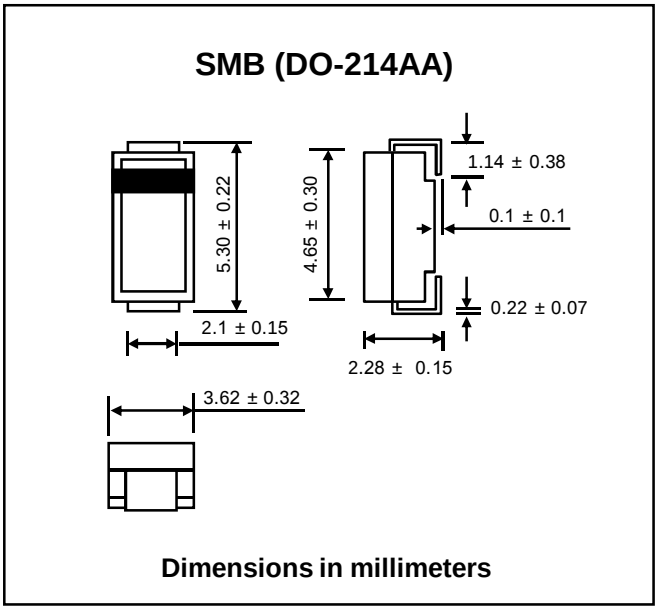
SMBJ5338B - SMBJ5388B SURFACE MOUNT SILICON ZENER DIODES

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

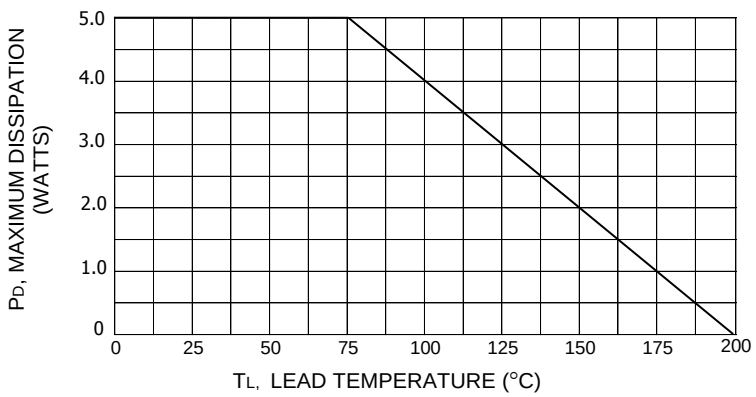
MAXIMUM RATINGS

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)	$R_{\Theta JA}$	90	°C/W
Thermal Resistance, Junction to Lead (Note 1)	$R_{\Theta JL}$	25	°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



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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)	(μA)	(V)	(mA)	(A)	ΔV_Z
SMBJ5338B	5.1	240	1.5	400	1.0	1.0	1.0	930	14.4	0.39
SMBJ5339B	5.6	220	1.0	400	1.0	1.0	2.0	865	13.4	0.25
SMBJ5340B	6.0	200	1.0	300	1.0	1.0	3.0	790	12.7	0.19
SMBJ5341B	6.2	200	1.0	200	1.0	1.0	3.0	765	12.4	0.10
SMBJ5342B	6.8	175	1.0	200	1.0	10	5.2	700	11.5	0.15
SMBJ5343B	7.5	175	1.5	200	1.0	10	5.7	630	10.7	0.15
SMBJ5344B	8.2	150	1.5	200	1.0	10	6.2	580	10.0	0.20
SMBJ5345B	8.7	150	2.0	200	1.0	10	6.6	545	9.5	0.20
SMBJ5346B	9.1	150	2.0	150	1.0	7.5	6.9	520	9.2	0.22
SMBJ5347B	10	125	2.0	125	1.0	5.0	7.6	475	8.6	0.22
SMBJ5348B	11	125	2.5	125	1.0	5.0	8.4	430	8.0	0.25
SMBJ5349B	12	100	2.5	125	1.0	2.0	9.1	395	7.5	0.25
SMBJ5350B	13	100	2.5	100	1.0	1.0	9.9	365	7.0	0.25
SMBJ5351B	14	100	2.5	75	1.0	1.0	10.6	340	6.7	0.25
SMBJ5352B	15	75	2.5	75	1.0	1.0	11.5	315	6.3	0.25
SMBJ5353B	16	75	2.5	75	1.0	1.0	12.2	295	6.0	0.30
SMBJ5354B	17	70	2.5	75	1.0	0.5	12.9	280	5.8	0.35
SMBJ5355B	18	65	2.5	75	1.0	0.5	13.7	265	5.5	0.40
SMBJ5356B	19	65	3.0	75	1.0	0.5	14.4	250	5.3	0.40
SMBJ5357B	20	65	3.0	75	1.0	0.5	15.2	237	5.1	0.40
SMBJ5358B	22	50	3.5	75	1.0	0.5	16.7	216	4.7	0.45
SMBJ5359B	24	50	3.5	100	1.0	0.5	18.2	198	4.4	0.55
SMBJ5360B	25	50	4.0	110	1.0	0.5	19.0	190	4.3	0.55
SMBJ5361B	27	50	5.0	120	1.0	0.5	20.6	176	4.1	0.60
SMBJ5362B	28	50	6.0	130	1.0	0.5	21.2	170	3.9	0.60
SMBJ5363B	30	40	8.0	140	1.0	0.5	22.8	158	3.7	0.60
SMBJ5364B	33	40	10	150	1.0	0.5	25.1	144	3.5	0.60
SMBJ5365B	36	30	11	160	1.0	0.5	27.4	132	3.3	0.65
SMBJ5366B	39	30	14	170	1.0	0.5	29.7	122	3.1	0.65
SMBJ5367B	43	30	20	190	1.0	0.5	32.7	110	2.8	0.70
SMBJ5368B	47	25	25	210	1.0	0.5	35.8	100	2.7	0.80
SMBJ5369B	51	25	27	230	1.0	0.5	38.8	93.0	2.5	0.90
SMBJ5370B	56	20	35	280	1.0	0.5	42.6	86.0	2.3	1.00
SMBJ5371B	60	20	40	350	1.0	0.5	45.5	79.0	2.2	1.20
SMBJ5372B	62	20	42	400	1.0	0.5	47.1	76.0	2.1	1.35
SMBJ5373B	68	20	44	500	1.0	0.5	51.7	70.0	2.0	1.50
SMBJ5374B	75	20	45	620	1.0	0.5	56.0	63.0	1.9	1.60
SMBJ5375B	82	15	65	720	1.0	0.5	62.2	58.0	1.8	1.80
SMBJ5376B	87	15	75	760	1.0	0.5	66.0	54.5	1.7	2.00
SMBJ5377B	91	15	75	760	1.0	0.5	69.2	52.5	1.6	2.20
SMBJ5378B	100	12	90	800	1.0	0.5	76.0	47.5	1.5	2.30
SMBJ5379B	110	12	125	1000	1.0	0.5	83.6	43.0	1.4	2.50
SMBJ5380B	120	10	170	1150	1.0	0.5	91.2	39.5	1.3	2.50
SMBJ5381B	130	10	190	1250	1.0	0.5	98.8	36.6	1.2	2.50
SMBJ5382B	140	8.0	230	1500	1.0	0.5	106	34.0	1.2	2.50
SMBJ5383B	150	8.0	330	1500	1.0	0.5	114	31.6	1.1	3.00
SMBJ5384B	160	8.0	350	1650	1.0	0.5	122	29.4	1.1	3.00
SMBJ5385B	170	8.0	380	1750	1.0	0.5	129	28.0	1.0	3.00
SMBJ5386B	180	5.0	430	1750	1.0	0.5	137	26.4	1.0	4.00
SMBJ5387B	190	5.0	450	1850	1.0	0.5	144	25.0	0.9	5.00
SMBJ5388B	200	5.0	480	1850	1.0	0.5	152	23.6	0.9	5.00

Notes : (1) Suffix " B " indicates ± 5% tolerance, suffix " A " indicates ± 10% 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}

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