Micro Commercial Components
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SMBJ5338B THRU SMBJ5388B

5 Watt Surface Mount Silicon Zener Diode 5.1 to 200 Volts

Features

- Low Profile Package for Surface Mountiong(Flat Handling Surface for Accurate Placement)
- Zener Voltage 5.1V to 200V
- High Surge Current Capability
- For Available Tolerances-see Note 1
- Available on Tape and Reel (see E1A std RS-481)
- Lead Free Finish/Rohs Compliant (Note1) ("P"Suffix designates Compliant. See ordering information)
- Halogen free available upon request by adding suffix "-HF"

Mechanical Data

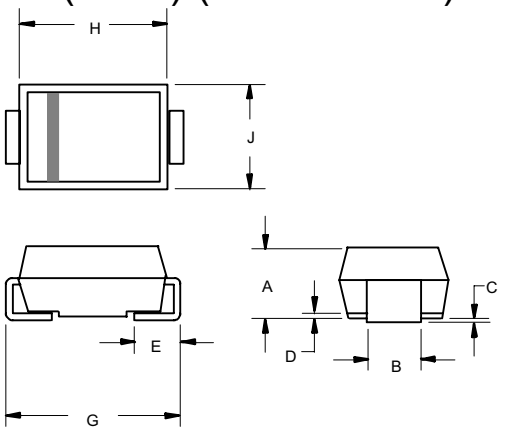
- Standard JEDEC Outlines as Shown
- Marking: See page 2
- Maximum Temperature for Soldering: 260℃ for 10 Seconds
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

Electrical Characteristics @ 25°C Unless Otherwise Specified

Forward Voltage at 1.0A Current	V_F	1.2Volts
Steady State Power Dissipation	$P_{(AV)}$	5Watts See Note 2
Operating and Storage Temperatures	T_J, T_{STG}	-55℃ to +150℃
Thermal Resistance	$R_{\theta JL}$ $R_{\theta JA}$	15℃/W 90℃/W

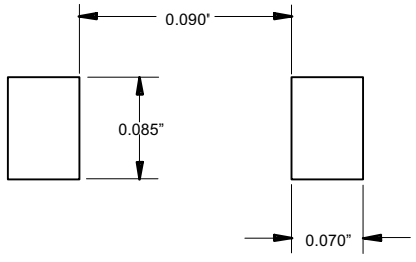
Note: 1.High Tempertaure Solder Exemptions Applied,see EU Directive Annex 7.
2. Lead temperature at 75℃ = TL at mounting plane. Derate linearly above 75℃ to zero power at 150 ℃
3. Ambient temperature at 15℃ = TA at mounting plane. Derate linearly above 15℃ to zero power at 150 ℃

DO-214AA
(SMB) (Lead Frame)



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	.075	.095	1.91	2.41	
B	.077	.083	1.96	2.10	
C	.002	.008	.05	.20	
D	-----	.02	-----	.51	
E	.030	.060	.76	1.52	
G	.200	.220	5.08	5.59	
H	.160	.187	4.06	4.75	
J	.130	.155	3.30	3.94	

SUGGESTED SOLDER PAD LAYOUT



SMBJ5338B thru SMBJ5388B

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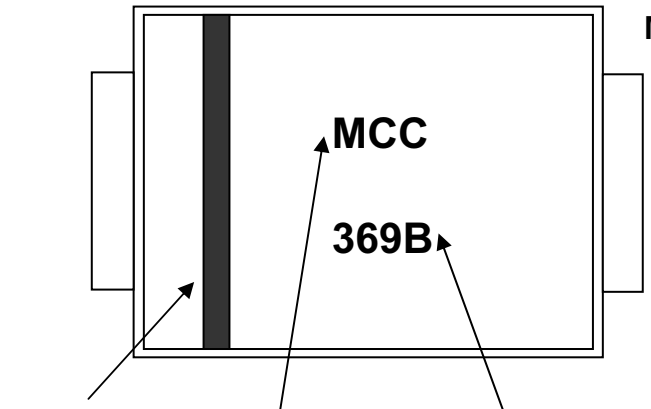
ELECTRICAL CHARACTERISTICS @25℃

MCC PART NUMBER	REGULATOR VOLTAGE V_Z	TEST CURRENT I_Z	MAXIMUM DYNAMIC IMPEDANCE Z_{ZT}	MAXIMUM REVERSE CURRENT I_R	TEST VOLTAGE V_R	MAXIMUM REGULATOR CURRENT I_{ZM}	MAXIMUM DYNAMIC KNEE IMPEDANCE Z_{ZK}@1.0mA	MAXIMUM SURGE CURRENT I_{ZSM}	MAXIMUM VOLTAGE REGULATION
	VOLTS	mA	OHMS	μA	VOLTS	mA	OHMS	A	VOLTS
SMBJ5338B	5.1	240	1.5	1	1	930	400	14.4	0.39
SMBJ5339B	5.6	220	1	1	2	865	400	13.4	0.25
SMBJ5340B	6	200	1	1	3	790	300	12.7	0.19
SMBJ5341B	6.2	200	1	1	3	765	200	12.4	0.1
SMBJ5342B	6.8	175	1	10	5.2	700	200	11.5	0.15
SMBJ5343B	7.5	175	1.5	10	5.7	630	200	10.7	0.15
SMBJ5344B	8.2	150	1.5	10	6.2	580	200	10	0.2
SMBJ5345B	8.7	150	2	10	6.6	545	200	9.5	0.2
SMBJ5346B	9.1	150	2	7.5	6.9	520	150	9.2	0.22
SMBJ5347B	10	125	2	5	7.6	475	125	8.6	0.22
SMBJ5348B	11	125	2.5	5	8.4	430	125	8	0.25
SMBJ5349B	12	100	2.5	2	9.1	395	125	7.5	0.25
SMBJ5350B	13	100	2.5	1	9.9	365	100	7	0.25
SMBJ5351B	14	100	2.5	1	10.6	340	75	6.7	0.25
SMBJ5352B	15	75	2.5	1	11.5	315	75	6.3	0.25
SMBJ5353B	16	75	2.5	1	12.2	295	75	6	0.3
SMBJ5354B	17	70	2.5	0.5	12.9	280	75	5.8	0.35
SMBJ5355B	18	65	2.5	0.5	13.7	264	75	5.5	0.4
SMBJ5356B	19	65	3	0.5	14.4	250	75	5.3	0.4
SMBJ5357B	20	65	3	0.5	15.2	237	75	5.1	0.4
SMBJ5358B	22	50	3.5	0.5	16.7	216	75	4.7	0.45
SMBJ5359B	24	50	3.5	0.5	18.2	198	100	4.4	0.55
SMBJ5360B	25	50	4	0.5	19	190	110	4.3	0.55
SMBJ5361B	27	50	5	0.5	20.6	176	120	4.1	0.6
SMBJ5362B	28	50	6	0.5	21.2	170	130	3.9	0.6
SMBJ5363B	30	40	8	0.5	22.8	158	140	3.7	0.6
SMBJ5364B	33	40	10	0.5	25.1	144	150	3.5	0.6
SMBJ5365B	36	30	11	0.5	27.4	132	160	3.3	0.65
SMBJ5366B	39	30	14	0.5	29.7	122	170	3.1	0.65
SMBJ5367B	43	30	20	0.5	32.7	110	190	2.8	0.7
SMBJ5368B	47	25	25	0.5	35.8	100	210	2.7	0.8
SMBJ5369B	51	25	27	0.5	38.8	93	230	2.5	0.9
SMBJ5370B	56	20	35	0.5	42.6	86	280	2.3	1
SMBJ5371B	60	20	40	0.5	45.5	79	350	2.2	1.2
SMBJ5372B	62	20	42	0.5	47.1	76	400	2.1	1.35
SMBJ5373B	68	20	44	0.5	51.7	70	500	2	1.5
SMBJ5374B	75	20	45	0.5	56	63	620	1.9	1.6
SMBJ5375B	82	15	65	0.5	62.2	58	720	1.8	1.8
SMBJ5376B	87	15	75	0.5	66	54.5	760	1.7	2
SMBJ5377B	91	15	75	0.5	69.2	52.5	760	1.6	2.2
SMBJ5378B	100	12	90	0.5	76	47.5	800	1.5	2.3
SMBJ5379B	110	12	125	0.5	83.6	43	1000	1.4	2.5
SMBJ5380B	120	10	170	0.5	91.2	39.5	1150	1.3	2.5
SMBJ5381B	130	10	190	0.5	98.8	36.6	1250	1.2	2.5
SMBJ5382B	140	8.0	230	0.5	106	34	1500	1.2	2.5
SMBJ5383B	150	8.0	330	0.5	114	31.6	1500	1.1	3
SMBJ5384B	160	8.0	350	0.5	122	29.4	1650	1.1	3
SMBJ5385B	170	8.0	380	0.5	129	28	1750	1.0	3
SMBJ5386B	180	5.0	430	0.5	137	26.4	1750	1.0	4
SMBJ5387B	190	5.0	450	0.5	144	25	1850	0.9	5
SMBJ5388B	200	5.0	480	0.5	152	23.6	1850	0.9	5

Marking Code Info.



Note 1 Devices listed have a ± 5% tolerance on nominal V_Z. Suffix C denotes a ±2%

Note 2 Nominal Zener Voltage (V_Z) is tested with a 40 +/-10 milliseconds pulse current at 25°C to avoid self-heat affection.

Note 3 The Zener impedance (Z_{ZT} or Z_{ZK} is derived from the 60 H_Z ac voltage, which results when an ac current having a rms value equal to 10% of the dc zener current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK} respectively.

Note 4 The Maximum Reverse (leakage) Current is specified for devices with ± 20% and ± 10% voltage tolerances on nominal V_Z in another column.

Note 5 The Maximum Zener Current (I_{ZM}) shown is for ± 5% tolerance devices. I_{ZM} for ± 10% and ± 20% devices can be calculated using the formula:

$$I_{ZM} = \frac{P}{V_{ZM}}$$

Where "V_{ZM}" is V_Z at the high end of the voltage tolerance specified and "P" is the rated power of the device.

Note 6 The Surge Current (I_{ZM}) is specified as the maximum peak of a nonrecurring sine wave of 8.3 milliseconds duration.

Note 7 Voltage Regulation (ΔV_Z) is the difference between the voltage measured at 10% and 50% I_{ZM}).

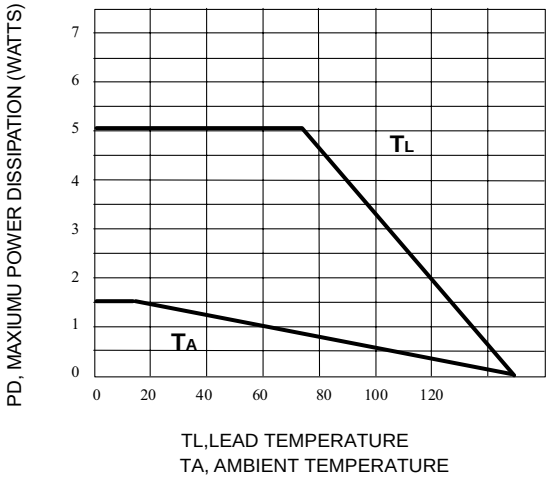


Fig. 1-POWER TEMPERATURE DERATING CURVE

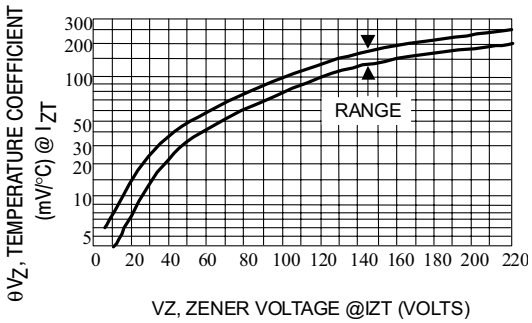


Fig. 2-TEMPERATURE COEFFICIENT-RANGE FOR UNITS 6 TO 51 VOLTS

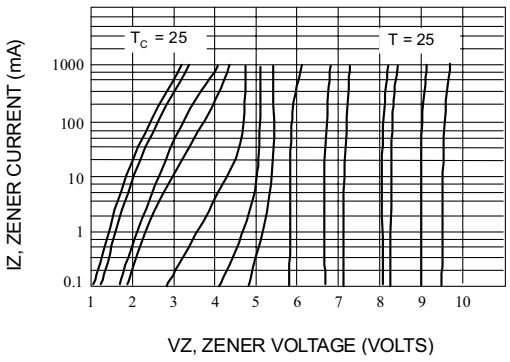


Fig. 3-ZENER VOLTAGE VERSUS ZENER CURRENT
VZ = 6.8 THRU 10 VOLTS

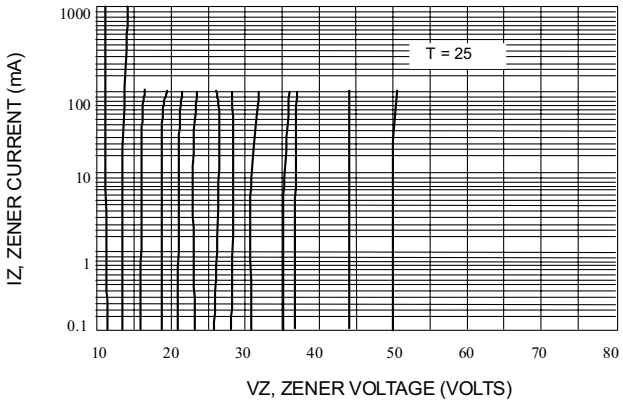


Fig. 4-ZENER VOLTAGE VERSUS ZENER CURRENT
VZ = 11 THRU 51 VOLTS

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Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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