

# MSKSEMI 美森科

SEMICONDUCTOR



ESD



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PLED

## **SMBJ53XXB-MS**

### **Product specification**

## Features

- Low Profile Package for Surface Mounting(Flat Handling Surface for Accurate Placement)
- Zener Voltage 5.1V to 200V
- Available on Tape and Reel(See E1A Std RS-481)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix Designates Compliant. See Ordering Information)

## Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 15°C/W Junction to Lead
- Thermal Resistance: 90°C/W Junction to Ambient(Note2)


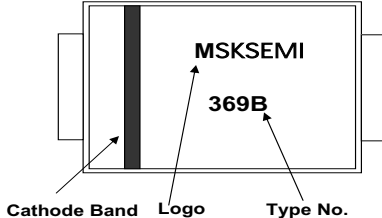
Parameter	Symbol	Rating	Conditions
Steady State Power Dissipation	$P_{(AV)}$	5.0W	Note 3
Maximum Forward Voltage	$V_F$	1.2V	$I_F=1.0A$

Note: 1.High Temperature Solder Exemption Applied, See EU Directive Annex 7a.

2.Ambient Temperature at 15°C =  $T_A$  at Mounting Plane. Derate Linearly Above 15°C to Zero Power at 150°C

3.Lead Temperature at 75°C =  $T_L$  at Mounting Plane. Derate Linearly Above 75°C to Zero Power at 150°C

## Reference News

PACKAGE OUTLINE	Device Marking
	 <p>Cathode Band   Logo   Type No.</p> <p>For Example: 339B for SMBJ5339B-MS 369B for SMBJ5369B-MS</p>
SMB(DO-214AA)	

**Electrical Characteristics @ 25°C Unless Otherwise Specified**

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

**Remarks:**

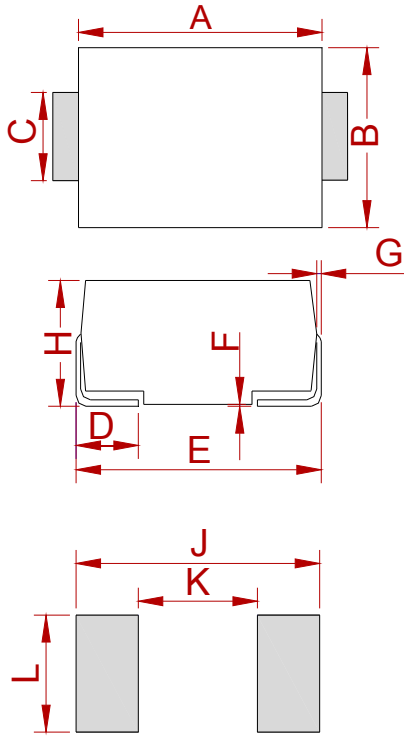
1. Devices Listed Have a  $\pm 5\%$  Tolerance on Nominal  $V_Z$ . Suffix C Denotes a +2%
2. Nominal Zener Voltage ( $V_Z$ ) is Tested With a 40 +/-10 Milliseconds Pulse Current at  $25^\circ\text{C}$  to Avoid Self-heat Affection.
3. The Zener Impedance ( $Z_{ZT}$  or  $Z_{ZK}$ ) is Derived from The 60HzAC Voltage, Which Results When an AC Current Having a rms value Equal to 10% of the DC Zener Current ( $I_{ZT}$  or  $I_{ZK}$ ) Respectively.
4. The Maximum Reverse(Leakage) Current is Specified for Devices With  $\pm 20\%$  and  $\pm 10\%$  Voltage Tolerances on Nominal  $V_Z$  in Another Column.
5. The Maximum Zener Current( $I_{ZM}$ ) Shown is for  $\pm 5\%$  Tolerance Devices.  $I_{ZM}$  for  $\pm 10\%$  and  $\pm 20\%$  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.

6. The Surge Current ( $I_{ZM}$ ) is Specified As The Maximum Peak of a Nonrecurring Sine Wave of 8.3 Milliseconds Duration.
7. Voltage Regulation ( $\Delta V_Z$ ) is The Difference Between The Voltage Measured at 10% and 50% ( $I_{ZM}$ ).

**PACKAGE MECHANICAL DATA**



DO-214AA (SMB)

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.25	4.75	0.167	0.187
B	3.30	3.94	0.130	0.155
C	1.85	2.21	0.073	0.087
D	0.76	1.52	0.030	0.060
E	5.08	5.59	0.200	0.220
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.11	2.44	0.083	0.096
J	6.80		0.270	
K		2.60		0.100
L	2.40		0.090	

**REEL SPECIFICATION**

P/N	PKG	QTY
SMBJ53XXB-MS	SMB	3000

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