



## Small Signal Zener Diodes



## FEATURES

- Silicon planar power Zener diodes.
- Standard Zener voltage tolerance is  $\pm 5\%$  with a "B" suffix (e.g.: MMBZ5225B-G), suffix "C" is  $\pm 2\%$  tolerance
- High temperature soldering guaranteed: 260 °C/4 x 10 s at terminals
- AEC-Q101 qualified
- ESD capability according to AEC-Q101: Human body model > 8 kV Machine model > 800 V
- Base P/N-G3 - green, commercial grade
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



## PRIMARY CHARACTERISTICS

PARAMETER	VALUE	UNIT
V <sub>Z</sub> range nom.	3 to 75	V
Test current I <sub>ZT</sub>	1.7 to 20	mA
V <sub>Z</sub> specification	Thermal equilibrium	
Int. construction	Single	

## ORDERING INFORMATION

DEVICE NAME	ORDERING CODE	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
MMBZ5225-G to MMBZ5267-G	MMBZ5225B-G3-08 to MMBZ5267B-G3-08	3000 (8 mm tape on 7" reel)	15 000/box
	MMBZ5225C-G3-08 to MMBZ5267C-G3-08		
	MMBZ5225B-G3-18 to MMBZ5267B-G3-18	10 000 (8 mm tape on 13" reel)	10 000/box
	MMBZ5225C-G3-18 to MMBZ5267C-G3-18		

## PACKAGE

PACKAGE NAME	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
SOT-23	8.1 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	260 °C/10 s at terminals

ABSOLUTE MAXIMUM RATINGS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Power dissipation	On FR - 5 board using recommended solder pad layout	P <sub>tot</sub>	225	mW
	On alumina substrate	P <sub>tot</sub>	300	mW
Zener current	See table "Electrical Characteristics"			
Thermal resistance, junction to ambient air	On FR - 5 board using recommended solder pad layout	R <sub>thJA</sub>	556	K/W
Junction temperature, maximum		T <sub>j</sub>	150	°C
Storage temperature range		T <sub>stg</sub>	- 65 to + 150	°C
Operating temperature range		T <sub>op</sub>	- 55 to + 150	°C



ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)									
PART NUMBER	MARKING CODE	ZENER VOLTAGE RANGE <sup>(1)</sup>	TEST CURRENT		REVERSE LEAKAGE CURRENT		DYNAMIC RESISTANCE <sup>(2)</sup>		TEMPERATURE COEFFICIENT
		$V_Z$ at $I_{ZT1}$	$I_{ZT1}$	$I_{ZT2}$	$I_R$ at $V_R$		$Z_Z$ at $I_{ZT1}$	$Z_{ZK}$ at $I_{ZT2}$	$\alpha_{VZ}$
		V	mA		$\mu\text{A}$	V	$\Omega$		%/ $^{\circ}\text{C}$
		NOM.			MAX.		MAX.	MAX.	TYP.
MMBZ5225-G	725	3	20	0.25	50	1	30	1600	- 0.075
MMBZ5226-G	726	3.3	20	0.25	25	1	28	1600	- 0.07
MMBZ5227-G	727	3.6	20	0.25	15	1	24	1700	- 0.065
MMBZ5228-G	728	3.9	20	0.25	10	1	23	1900	- 0.06
MMBZ5229-G	729	4.3	20	0.25	5	1	22	2000	- 0.055
MMBZ5230-G	730	4.7	20	0.25	5	2	19	1900	$\pm$ 0.030
MMBZ5231-G	731	5.1	20	0.25	5	2	17	1600	$\pm$ 0.030
MMBZ5232-G	732	5.6	20	0.25	5	3	11	1600	0.038
MMBZ5233-G	733	6	20	0.25	5	3.5	7	1600	0.038
MMBZ5234-G	734	6.2	20	0.25	5	4	7	1000	0.045
MMBZ5235-G	735	6.8	20	0.25	3	5	5	750	0.05
MMBZ5236-G	736	7.5	20	0.25	3	6	6	500	0.058
MMBZ5237-G	737	8.2	20	0.25	3	6.5	8	500	0.062
MMBZ5238-G	738	8.7	20	0.25	3	6.5	8	600	0.065
MMBZ5239-G	739	9.1	20	0.25	3	7	10	600	0.068
MMBZ5240-G	740	10	20	0.25	3	8	17	600	0.075
MMBZ5241-G	741	11	20	0.25	2	8.4	22	600	0.076
MMBZ5242-G	742	12	20	0.25	1	9.1	30	600	0.077
MMBZ5243-G	743	13	9.5	0.25	0.5	9.9	13	600	0.079
MMBZ5244-G	744	14	9	0.25	0.1	10	15	600	0.082
MMBZ5245-G	745	15	8.5	0.25	0.1	11	16	600	0.082
MMBZ5246-G	746	16	7.8	0.25	0.1	12	17	600	0.083
MMBZ5247-G	747	17	7.4	0.25	0.1	13	19	600	0.084
MMBZ5248-G	748	18	7	0.25	0.1	14	21	600	0.085
MMBZ5249-G	749	19	6.6	0.25	0.1	14	23	600	0.086
MMBZ5250-G	750	20	6.2	0.25	0.1	15	25	600	0.086
MMBZ5251-G	751	22	5.6	0.25	0.1	17	29	600	0.087
MMBZ5252-G	752	24	5.2	0.25	0.1	18	33	600	0.087
MMBZ5253-G	753	25	5	0.25	0.1	19	35	600	0.089
MMBZ5254-G	754	27	4.6	0.25	0.1	21	41	600	0.09
MMBZ5255-G	755	28	4.5	0.25	0.1	21	44	600	0.091
MMBZ5256-G	756	30	4.2	0.25	0.1	23	49	600	0.091
MMBZ5257-G	757	33	3.8	0.25	0.1	25	58	700	0.092
MMBZ5258-G	758	36	3.4	0.25	0.1	27	70	700	0.093
MMBZ5259-G	759	39	3.2	0.25	0.1	30	80	800	0.094
MMBZ5260-G	760	43	3	0.25	0.1	33	93	900	0.095
MMBZ5261-G	761	47	2.7	0.25	0.1	36	105	1000	0.095
MMBZ5262-G	762	51	2.5	0.25	0.1	39	125	1100	0.096
MMBZ5263-G	763	56	2.2	0.25	0.1	43	150	1300	0.096
MMBZ5264-G	764	60	2.1	0.25	0.1	46	170	1400	0.097
MMBZ5265-G	765	62	2	0.25	0.1	47	185	1400	0.097
MMBZ5266-G	766	68	1.8	0.25	0.1	52	230	1600	0.097
MMBZ5267-G	767	75	1.7	0.25	0.1	56	270	1700	0.098

Notes

- Maximum  $V_F = 0.9\text{ V}$ , at  $I_F = 10\text{ mA}$

(1) Measured at thermal equilibrium

(2) The Zener impedance is derived from the 1 kHz AC voltage which results when an AC current having an RMS value equal to 10 % of the Zener current ( $I_{ZT1}$  or  $I_{ZT2}$ ) is superimposed on  $I_{ZT1}$  or  $I_{ZT2}$ . Zener Impedance is measured at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units

## TYPICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

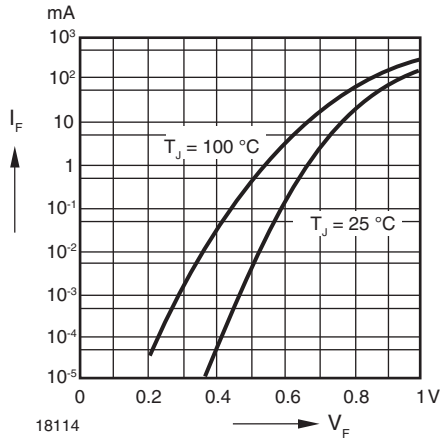


Fig. 1 - Forward Characteristics

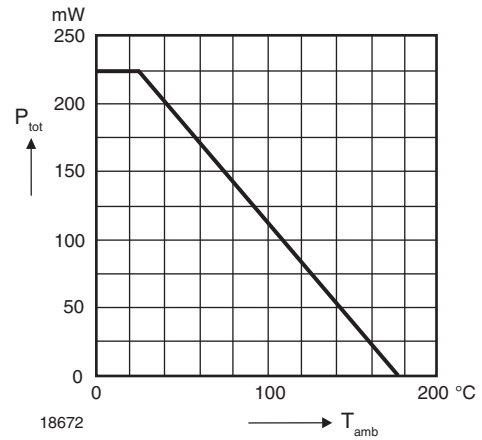
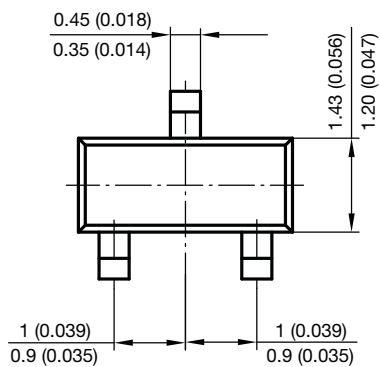
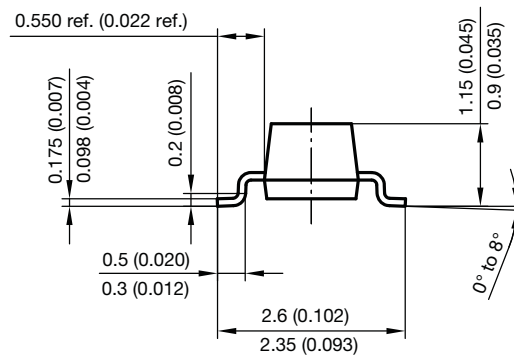
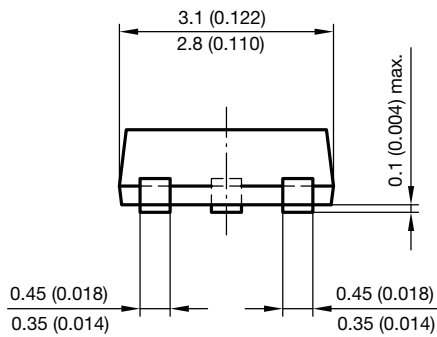
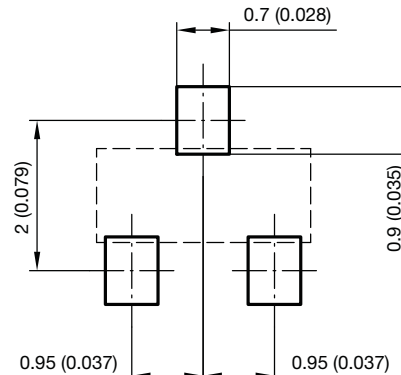


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

## PACKAGE DIMENSIONS in millimeters (inches): SOT-23



Foot print recommendation:





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