

## Small Signal Zener Diodes



### FEATURES

- Very sharp reverse characteristic
- Very high stability
- Electrical data identical with the devices 1N5221B to 1N5267B
- Low reverse current level
- Standard Zener voltage tolerance  $\pm 5\%$  with a "B" suffix in the ordering code (e.g.: TZM5221B), suffix "C" is  $\pm 2\%$  tolerance
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

PRIMARY CHARACTERISTICS		
PARAMETER	VALUE	UNIT
$V_Z$ range nom.	2.4 to 75	V
Test current $I_{ZT}$	1.7 to 20	mA
$V_Z$ specification	Thermal equilibrium	
Int. construction	Single	

### APPLICATIONS

- Voltage stabilization

ORDERING INFORMATION			
DEVICE NAME	ORDERING CODE	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
TZM5221B to TZM5267B	TZM5221B to TZM5267B-series-GS18	10 000 (8 mm tape on 13" reel)	10 000/box
TZM5221C to TZM5267C	TZM5221C to TZM5267C-series-GS18		
TZM5221B to TZM5267B	TZM5221B to TZM5267B-series-GS08	2500 (8 mm tape on 7" reel)	12 500/box
TZM5221C to TZM5267C	TZM5221C to TZM5267C-series-GS08		

PACKAGE				
PACKAGE NAME	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
MiniMELF SOD-80	31 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	260 °C/10 s at terminals

ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ °C}$ , unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Power dissipation	$R_{thJA} = < 300\text{ K/W}$	$P_{tot}$	500	mW
Zener current		$I_Z$	$P_{tot}/V_Z$	mA
Junction to ambient air	On PC board 50 mm x 50 mm x 1.6 mm	$R_{thJA}$	500	K/W
Junction temperature		$T_j$	175	°C
Storage temperature range		$T_{stg}$	-65 to +175	°C
Forward voltage (max.)	$I_F = 200\text{ mA}$	$V_F$	1.1	V

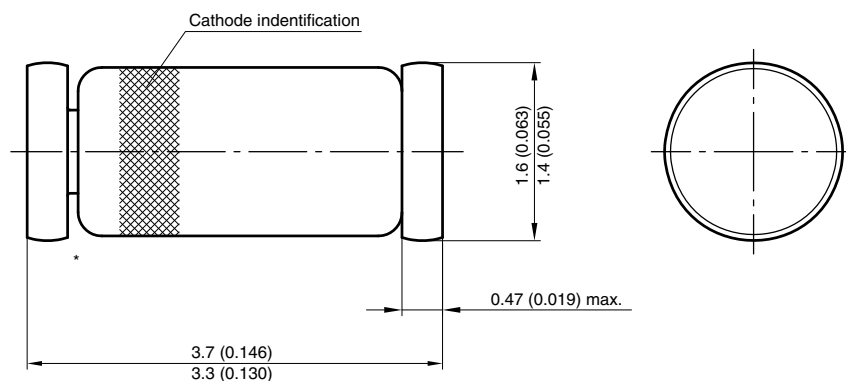
**ELECTRICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

PART NUMBER	ZENER VOLTAGE RANGE <sup>(1)</sup>	TEST CURRENT		REVERSE LEAKAGE CURRENT		DYNAMIC RESISTANCE		TEMPERATURE COEFFICIENT
	V <sub>Z</sub> at I <sub>ZT1</sub>	I <sub>ZT1</sub>	I <sub>ZT2</sub>	I <sub>R</sub> at V <sub>R</sub>		Z <sub>Z</sub> at I <sub>ZT1</sub>	Z <sub>ZK</sub> at I <sub>ZT2</sub>	TK <sub>VZ</sub>
						f = 1 kHz		
						V	mA	
NOM.					TYP.	TYP.		
TZM5221	2.4	20	0.25	< 100	1	< 30	< 1200	< - 0.085
TZM5222	2.5	20	0.25	< 100	1	< 30	< 1250	< - 0.085
TZM5223	2.7	20	0.25	< 75	1	< 30	< 1300	< - 0.080
TZM5224	2.8	20	0.25	< 75	1	< 30	< 1400	< - 0.080
TZM5225	3	20	0.25	< 50	1	< 29	< 1600	< - 0.075
TZM5226	3.3	20	0.25	< 25	1	< 28	< 1600	< - 0.070
TZM5227	3.6	20	0.25	< 15	1	< 24	< 1700	< - 0.065
TZM5228	3.9	20	0.25	< 10	1	< 23	< 1900	< - 0.060
TZM5229	4.3	20	0.25	< 5	1	< 22	< 2000	< ± 0.055
TZM5230	4.7	20	0.25	< 5	2	< 19	< 1900	< ± 0.030
TZM5231	5.1	20	0.25	< 5	2	< 17	< 1600	< ± 0.030
TZM5232	5.6	20	0.25	< 5	3	< 11	< 1600	< + 0.038
TZM5233	6	20	0.25	< 5	3.5	< 7	< 1600	< + 0.038
TZM5234	6.2	20	0.25	< 5	4	< 7	< 1000	< + 0.045
TZM5235	6.8	20	0.25	< 3	5	< 5	< 750	< + 0.050
TZM5236	7.5	20	0.25	< 3	6	< 6	< 500	< + 0.058
TZM5237	8.2	20	0.25	< 3	6.5	< 8	< 500	< + 0.062
TZM5238	8.7	20	0.25	< 3	6.5	< 8	< 600	< + 0.065
TZM5239	9.1	20	0.25	< 3	7	< 10	< 600	< + 0.068
TZM5240	10	20	0.25	< 3	8	< 17	< 600	< + 0.075
TZM5241	11	20	0.25	< 2	8.4	< 22	< 600	< + 0.076
TZM5242	12	20	0.25	< 1	9.1	< 30	< 600	< + 0.077
TZM5243	13	9.5	0.25	< 0.5	9.9	< 13	< 600	< + 0.079
TZM5244	14	9	0.25	< 0.1	10	< 15	< 600	< + 0.082
TZM5245	15	8.5	0.25	< 0.1	11	< 16	< 600	< + 0.082
TZM5246	16	7.8	0.25	< 0.1	12	< 17	< 600	< + 0.083
TZM5247	17	7.4	0.25	< 0.1	13	< 19	< 600	< + 0.084
TZM5248	18	7	0.25	< 0.1	14	< 21	< 600	< + 0.085
TZM5249	19	6.6	0.25	< 0.1	14	< 23	< 600	< + 0.086
TZM5250	20	6.2	0.25	< 0.1	15	< 25	< 600	< + 0.086
TZM5251	22	5.6	0.25	< 0.1	17	< 29	< 600	< + 0.087
TZM5252	24	5.2	0.25	< 0.1	18	< 33	< 600	< + 0.088
TZM5253	25	5	0.25	< 0.1	19	< 35	< 600	< + 0.089
TZM5254	27	4.6	0.25	< 0.1	21	< 41	< 600	< + 0.090
TZM5255	28	4.5	0.25	< 0.1	21	< 44	< 600	< + 0.091
TZM5256	30	4.2	0.25	< 0.1	23	< 49	< 600	< + 0.091
TZM5257	33	3.8	0.25	< 0.1	25	< 58	< 700	< + 0.092
TZM5258	36	3.4	0.25	< 0.1	27	< 70	< 700	< + 0.093
TZM5259	39	3.2	0.25	< 0.1	30	< 80	< 800	< + 0.094
TZM5260	43	3	0.25	< 0.1	33	< 93	< 900	< + 0.095
TZM5261	47	2.7	0.25	< 0.1	36	105	< 1000	< + 0.095
TZM5262	51	2.5	0.25	< 0.1	39	125	< 1100	< + 0.096
TZM5263	56	2.2	0.25	< 0.1	43	150	< 1300	< + 0.096
TZM5264	60	2.1	0.25	< 0.1	46	170	< 1400	< + 0.097
TZM5265	62	2	0.25	< 0.1	47	185	< 1400	< + 0.097
TZM5266	68	1.8	0.25	< 0.1	52	230	< 1600	< + 0.097
TZM5267	75	1.7	0.25	< 0.1	56	270	< 1700	< + 0.098

**Note**(1) Based on DC measurement at thermal equilibrium; case temperature maintained at  $30\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$

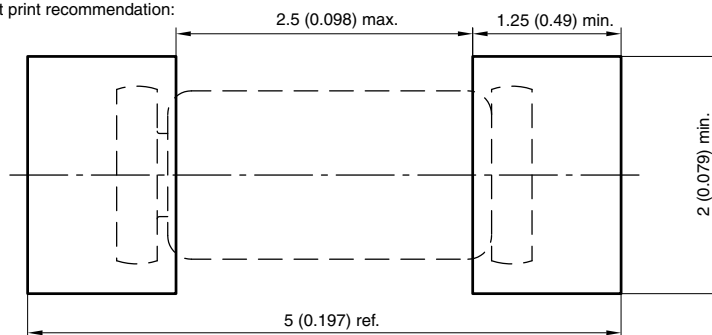


**PACKAGE DIMENSIONS** in millimeters (inches): **MiniMELF SOD-80**



\* The gap between plug and glass can be either on cathode or anode side

Foot print recommendation:



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96 12070



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