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 ± 5 %
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

LINKS TO ADDITIONAL RESOURCES

3D Models | Marking | Parametric Search | Order Samples

APPLICATIONS

- Voltage stabilization

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	
Circuit configuration	Single	

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
TZM5221B to TZM5267B	TZM5221B to TZM5267B-series-GS08	2500 (8 mm tape on 7" reel)	12 500/box

PACKAGE				
PACKAGE NAME	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
MiniMELF (SOD-80)	approx. 31 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	Peak temperature max. 260 °C

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Power dissipation	R_{thJA} = < 300 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 mA	V_F	1.1	V

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ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

PART NUMBER	ZENER VOLTAGE RANGE (1)	TEST CURRENT		REVERSE LEAKAGE CURRENT		DYNAMIC RESISTANCE		TEMPERATURE COEFFICIENT
	V_Z at I_{ZT1}	I_{ZT1}	I_{ZT2}	I_R at V_R		Z_Z at I_{ZT1} f = 1 kHz	Z_{ZK} at I_{ZT2} f = 1 kHz	TK_{VZ}
	V	mA		µA	V	Ω		%/K
	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 °C ± 2 °C

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BASIC CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

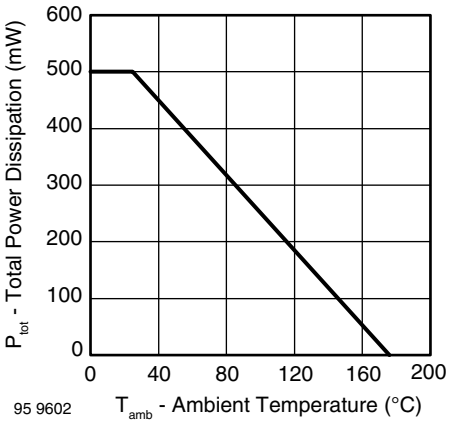

Fig. 1 - Total Power Dissipation vs. Ambient Temperature

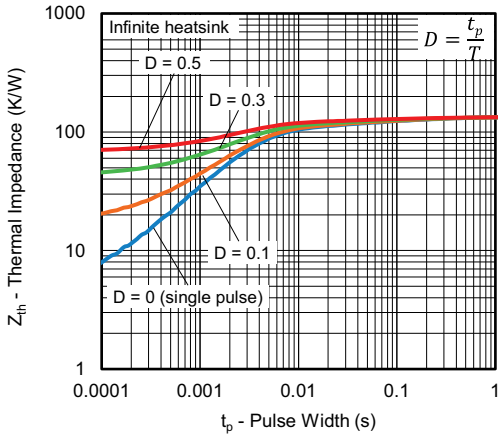

Fig. 2 - Typical Thermal Response

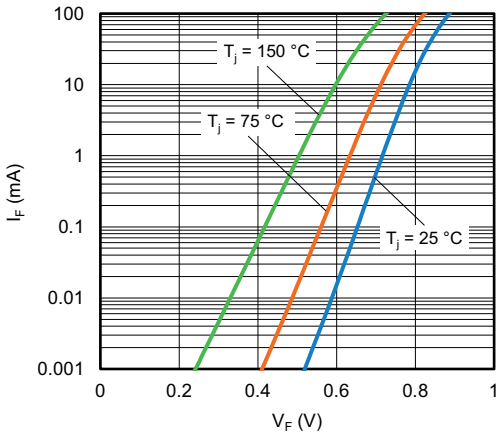

Fig. 3 - Typical Forward Current I_F vs. Forward Voltage V_F

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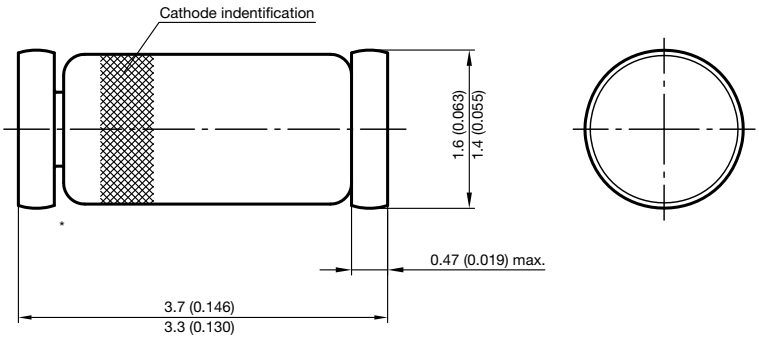
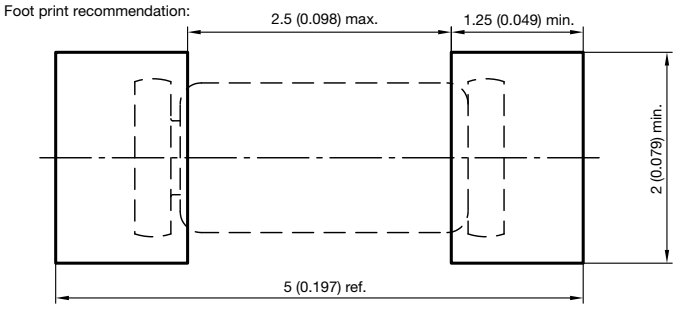
PACKAGE DIMENSIONS in millimeters (inches): **MiniMELF (SOD-80)**



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



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