Zener Diodes



FEATURES

- Silicon planar power Zener diodes
- For use in stablilizing and clipping circuits with high power rating
- Standard Zener voltage tolerance is ± 5 %
- These diodes are also available in the DO-41 case with type designation 1N4728A to 1N4761A
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT
HALOGEN FREE

LINKS TO ADDITIONAL RESOURCES

3D Models

PRIMARY CHARACTERISTICS		
PARAMETER	VALUE	UNIT
V_Z range nom.	3.3 to 75	V
Test current I_{ZT}	3.3 to 76	mA
V_Z specification	Thermal equilibrium	
Circuit configuration	Single	

ORDERING INFORMATION			
DEVICE NAME	ORDERING CODE	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
ZM4728A to ZM4761A	ZM4728A to ZM4761A-series-GS18	5 000 (12 mm tape on 13" reel)	10 000/box
ZM4728A to ZM4761A	ZM4728A to ZM4761A-series-GS08	1 500 (12 mm tape on 7" reel)	12 000/box

PACKAGE				
PACKAGE NAME	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
MELF (DO-213AB) glass	135 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	Valid provided that electrodes are kept at ambient temperature	P_{tot}	1000	mW
Zener current	See table “Characteristics”			
Junction to ambient air	Valid provided that electrodes are kept at ambient temperature	R_{thJA}	170	K/W
Junction temperature		T_j	175	°C
Storage temperature range		T_{stg}	-65 to +175	°C

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

PART NUMBER	ZENER VOLTAGE RANGE (3)	TEST CURRENT		REVERSE LEAKAGE CURRENT		DYNAMIC RESISTANCE (1) f = 1 kHz		SURGE CURRENT (4)	REGULATOR CURRENT (2)
	V_Z at I_{ZT1}	I_{ZT1}	I_{ZT2}	I_R at V_R		Z_Z at I_{ZT1}	Z_{ZK} at I_{ZT2}	I_{ZSM}	I_{ZM}
	V	mA		µA	V	Ω		mA	mA
	NOM.			MAX.		MAX.	MAX.		MAX.
ZM4728A	3.3	76	1	100	1	10	400	1380	276
ZM4729A	3.6	69	1	100	1	10	400	1260	252
ZM4730A	3.9	64	1	50	1	9	400	1190	234
ZM4731A	4.3	58	1	10	1	9	400	1070	217
ZM4732A	4.7	53	1	10	1	8	500	970	193
ZM4733A	5.1	49	1	10	1	7	550	890	178
ZM4734A	5.6	45	1	10	2	5	600	810	162
ZM4735A	6.2	41	1	10	3	2	700	730	146
ZM4736A	6.8	37	1	10	4	3.5	700	660	133
ZM4737A	7.5	34	0.5	10	5	4	700	605	121
ZM4738A	8.2	31	0.5	10	6	4.5	700	550	110
ZM4739A	9.1	28	0.5	10	7	5	700	500	100
ZM4740A	10	25	0.25	10	7.6	7	700	454	91
ZM4741A	11	23	0.25	5	8.4	8	700	414	83
ZM4742A	12	21	0.25	5	9.1	9	700	380	76
ZM4743A	13	19	0.25	5	9.9	10	700	344	69
ZM4744A	15	17	0.25	5	11.4	14	700	304	61
ZM4745A	16	15.5	0.25	5	12.2	16	700	285	57
ZM4746A	18	14	0.25	5	13.7	20	750	250	50
ZM4747A	20	12.5	0.25	5	15.2	22	750	225	45
ZM4748A	22	11.5	0.25	5	16.7	23	750	205	41
ZM4749A	24	10.5	0.25	5	18.2	25	750	190	38
ZM4750A	27	9.5	0.25	5	20.6	35	750	170	34
ZM4751A	30	8.5	0.25	5	22.8	40	1000	150	30
ZM4752A	33	7.5	0.25	5	25.1	45	1000	135	27
ZM4753A	36	7	0.25	5	27.4	50	1000	125	25
ZM4754A	39	6.5	0.25	5	29.7	60	1000	115	23
ZM4755A	43	6	0.25	5	32.7	70	1500	110	22
ZM4756A	47	5.5	0.25	5	35.8	80	1500	95	19
ZM4757A	51	5	0.25	5	38.8	95	1500	90	18
ZM4758A	56	4.5	0.25	5	42.6	110	2000	80	16
ZM4759A	62	4	0.25	5	47.1	125	2000	70	14
ZM4760A	68	3.7	0.25	5	51.7	150	2000	65	13
ZM4761A	75	3.3	0.25	5	56	175	2000	60	12
ZM4762A	82	3	0.25	5	62.2	200	3000	55	11
ZM4763A	91	2.8	0.25	5	69.2	250	3000	50	10
ZM4764A	100	2.5	0.25	5	76	350	3000	45	9

Notes

(1) 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

(2) Valid provided that electrodes are kept at ambient temperature

(3) Measured under thermal equilibrium and DC test conditions

(4) Width of the test pulse is 8.3 ms

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

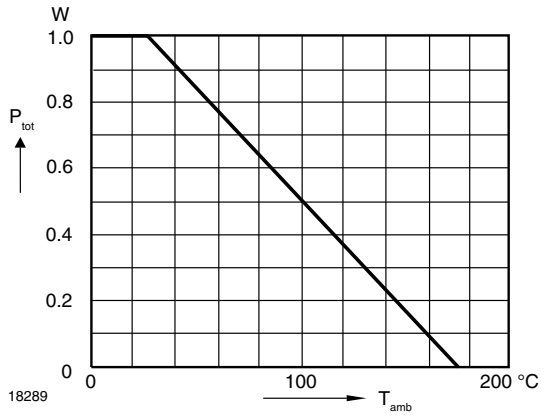
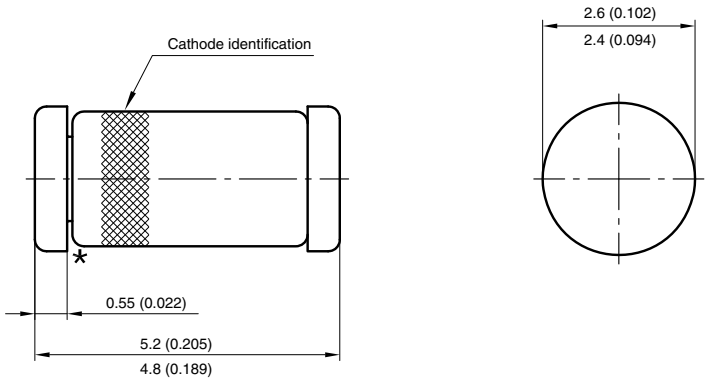


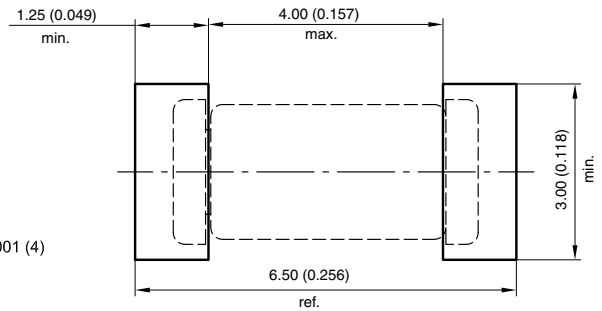
Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

PACKAGE DIMENSIONS in millimeters (inches): MELF DO-213AB (glass)



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

Foot print recommendation:



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