Zener Diodes

FEATURES

- Silicon planar power Zener diodes
- For use in stabilizing and clipping circuits with high power rating
- Standard Zener voltage tolerance is ± 5 %
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT
HALOGEN FREE

APPLICATIONS

- Voltage stabilization

PRIMARY CHARACTERISTICS		
PARAMETER	VALUE	UNIT
V_Z range nom.	3.3 to 100	V
Test current I_{ZT}	2.5 to 76	mA
V_Z specification	Thermal equilibrium	
Int. construction	Single	

ORDERING INFORMATION			
DEVICE NAME	ORDERING CODE	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
1N4728A to 1N4764A	1N4728A to 1N4764A -series-TR	5000 per 13" reel	25 000/box
1N4728A to 1N4764A	1N4728A to 1N4764A-series-TAP	5000 per ammopack (52 mm tape)	25 000/box

PACKAGE				
PACKAGE NAME	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
DO-41	310 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	260 °C/10 s at terminals

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Power dissipation	Valid provided that leads at a distance of 4 mm from case are kept at ambient temperature	P_{tot}	1300	mW
Zener current		I_Z	P_V/V_Z	mA
Thermal resistance junction to ambient air	Valid provided that leads at a distance of 4 mm from case are kept at ambient temperature	R_{thJA}	110	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	1.2	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 f = 1 kHz		SURGE CURRENT (3)	REGULATOR CURRENT (2)
	V_Z at I_{ZT1}	I_{ZT1}	I_{ZT2}	I_R at V_R		Z_{ZT} at I_{ZT1}	Z_{ZK} at I_{ZT2}	I_R	I_{ZM}
	V	mA	mA	µA	V	Ω		mA	mA
	NOM.			MAX.		TYP.	MAX.		MAX.
1N4728A	3.3	76	1	100	1	10	400	1380	276
1N4729A	3.6	69	1	100	1	10	400	1260	252
1N4730A	3.9	64	1	50	1	9	400	1190	234
1N4731A	4.3	58	1	10	1	9	400	1070	217
1N4732A	4.7	53	1	10	1	8	500	970	193
1N4733A	5.1	49	1	10	1	7	550	890	178
1N4734A	5.6	45	1	10	2	5	600	810	162
1N4735A	6.2	41	1	10	3	2	700	730	146
1N4736A	6.8	37	1	10	4	3.5	700	660	133
1N4737A	7.5	34	0.5	10	5	4	700	605	121
1N4738A	8.2	31	0.5	10	6	4.5	700	550	110
1N4739A	9.1	28	0.5	10	7	5	700	500	100
1N4740A	10	25	0.25	10	7.6	7	700	454	91
1N4741A	11	23	0.25	5	8.4	8	700	414	83
1N4742A	12	21	0.25	5	9.1	9	700	380	76
1N4743A	13	19	0.25	5	9.9	10	700	344	69
1N4744A	15	17	0.25	5	11.4	14	700	304	61
1N4745A	16	15.5	0.25	5	12.2	16	700	285	57
1N4746A	18	14	0.25	5	13.7	20	750	250	50
1N4747A	20	12.5	0.25	5	15.2	22	750	225	45
1N4748A	22	11.5	0.25	5	16.7	23	750	205	41
1N4749A	24	10.5	0.25	5	18.2	25	750	190	38
1N4750A	27	9.5	0.25	5	20.6	35	750	170	34
1N4751A	30	8.5	0.25	5	22.8	40	1000	150	30
1N4752A	33	7.5	0.25	5	25.1	45	1000	135	27
1N4753A	36	7	0.25	5	27.4	50	1000	125	25
1N4754A	39	6.5	0.25	5	29.7	60	1000	115	23
1N4755A	43	6	0.25	5	32.7	70	1500	110	22
1N4756A	47	5.5	0.25	5	35.8	80	1500	95	19
1N4757A	51	5	0.25	5	38.8	95	1500	90	18
1N4758A	56	4.5	0.25	5	42.6	110	2000	80	16
1N4759A	62	4	0.25	5	47.1	125	2000	70	14
1N4760A	68	3.7	0.25	5	51.7	150	2000	65	13
1N4761A	75	3.3	0.25	5	56	175	2000	60	12
1N4762A	82	3	0.25	5	62.2	200	3000	55	11
1N4763A	91	2.8	0.25	5	69.2	250	3000	50	10
1N4764A	100	2.5	0.25	5	76	350	3000	45	9

Notes

(1) Based on DC measurement at thermal equilibrium while maintaining the lead temperature (T_L) at 30 °C + 1 °C, 9.5 mm (3/8") from the diode body

(2) Valid provided that electrodes at a distance of 4 mm from case are kept at ambient temperature

(3) t_p = 10 ms.

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

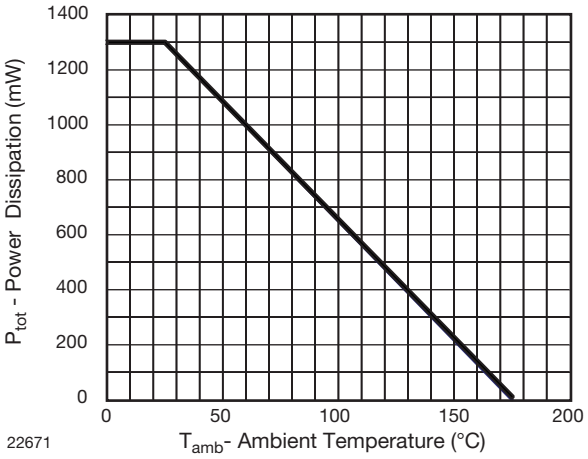
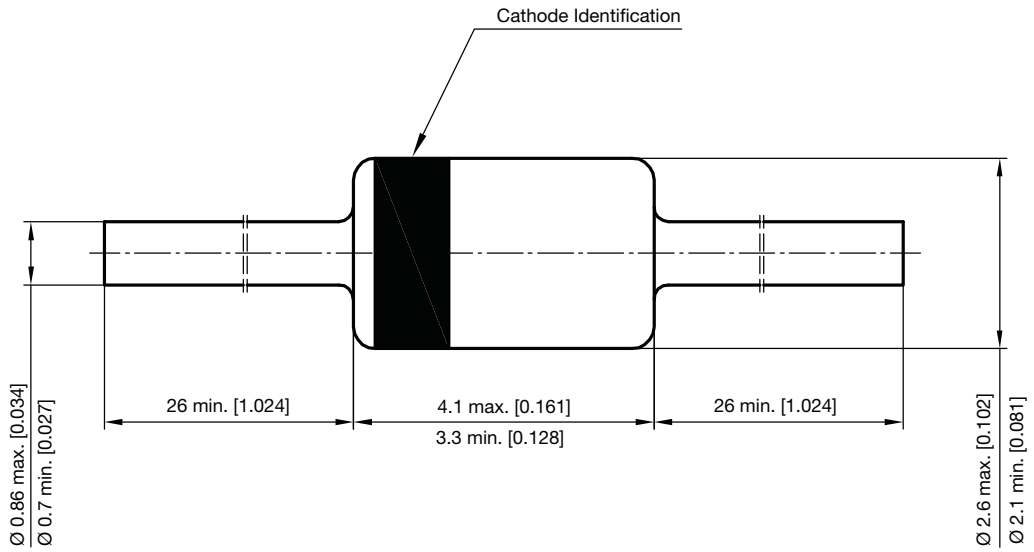


Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature
$P_{tot} = f(T_{amb})$

PACKAGE DIMENSIONS in millimeters (inches): DO-41_1N47xx



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Телефон: 8 (812) 309-75-97 (многоканальный)
Факс: 8 (812) 320-03-32
Электронная почта: ocean@oceanchips.ru
Web: http://oceanchips.ru/
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А