# **Vishay Semiconductors**

# **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 %
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition







### **Applications**

· Voltage stabilization

### **Mechanical Data**

Case: DO-41

Weight: approx. 310 mg Packaging codes/options: TR/5K per 13" reel, 25K/box

TAP/5K per Ammo pack (52 mm tape), 25K/box

### **Absolute Maximum Ratings**

T<sub>amb</sub> = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Power dissipation		P <sub>tot</sub>	1.3 <sup>1)</sup>	W
Z-current		Ι <sub>Ζ</sub>	$P_V/V_Z$	mA

<sup>1)</sup> Valid provided that leads at a distance of 4 mm from case are kept at ambient temperature.

### **Thermal Characteristics**

T<sub>amb</sub> = 25 °C, unless otherwise specified

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Parameter	Test condition	Symbol	Value	Unit
Thermal resistance juntion to ambient air		R <sub>thJA</sub>	110 <sup>1)</sup>	K/W
Junction temperature		Tj	175	°C
Storage temperature range		T <sub>stg</sub>	- 65 to + 175	°C

<sup>1)</sup> Valid provided that leads at a distance of 4 mm from case are kept at ambient temperature.

### **Electrical Characteristics**

T<sub>amb</sub> = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Min.	Тур.	Max.	Unit
Forward voltage	I <sub>F</sub> = 200 mA	V <sub>F</sub>			1.2	V

# 1N4728A to 1N4764A

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### **Electrical Characteristics**

1N4728A...1N4764A

number	Nominal Zener voltage <sup>1)</sup>	Test current	Maximum dynamic impedance			Maximum reverse leakage current		Surge current <sup>3)</sup>	Maximum regulator current <sup>2)</sup>
	V <sub>Z</sub> at I <sub>ZT</sub>	I <sub>ZT</sub>	$Z_{ZT}$ at $I_{ZT}$	$Z_{ZK}$ at $I_{ZK}$	I <sub>ZK</sub>	I <sub>R</sub>	Test voltage V <sub>R</sub>	at T <sub>A</sub> = 25 °C I <sub>R</sub>	I <sub>ZM</sub>
	٧	mA	Ω	Ω	mA	μΑ	V	mA	mA
1N4728A	3.3	76	10	400	1	100	1	1380	276
1N4729A	3.6	69	10	400	1	100	1	1260	252
1N4730A	3.9	64	9	400	1	50	1	1190	234
1N4731A	4.3	58	9	400	1	10	1	1070	217
1N4732A	4.7	53	8	500	1	10	1	970	193
1N4733A	5.1	49	7	550	1	10	1	890	178
1N4734A	5.6	45	5	600	1	10	2	810	162
1N4735A	6.2	41	2	700	1	10	3	730	146
1N4736A	6.8	37	3.5	700	1	10	4	660	133
1N4737A	7.5	34	4	700	0.5	10	5	605	121
1N4738A	8.2	31	4.5	700	0.5	10	6	550	110
1N4739A	9.1	28	5	700	0.5	10	7	500	100
1N4740A	10	25	7	700	0.25	10	7.6	454	91
1N4741A	11	23	8	700	0.25	5	8.4	414	83
1N4742A	12	21	9	700	0.25	5	9.1	380	76
1N4743A	13	19	10	700	0.25	5	9.9	344	69
1N4744A	15	17	14	700	0.25	5	11.4	304	61
1N4745A	16	15.5	16	700	0.25	5	12.2	285	57
1N4746A	18	14	20	750	0.25	5	13.7	250	50
1N4747A	20	12.5	22	750	0.25	5	15.2	225	45
1N4748A	22	11.5	23	750	0.25	5	16.7	205	41
1N4749A	24	10.5	25	750	0.25	5	18.2	190	38
1N4750A	27	9.5	35	750	0.25	5	20.6	170	34
1N4751A	30	8.5	40	1000	0.25	5	22.8	150	30
1N4752A	33	7.5	45	1000	0.25	5	25.1	135	27
1N4753A	36	7	50	1000	0.25	5	27.4	125	25
1N4754A	39	6.5	60	1000	0.25	5	29.7	115	23
1N4755A	43	6	70	1500	0.25	5	32.7	110	22
1N4756A	47	5.5	80	1500	0.25	5	35.8	95	19
1N4757A	51	5	95	1500	0.25	5	38.8	90	18
1N4758A	56	4.5	110	2000	0.25	5	42.6	80	16
1N4759A	62	4	125	2000	0.25	5	47.1	70	14
1N4760A	68	3.7	150	2000	0.25	5	51.7	65	13
1N4761A	75	3.3	175	2000	0.25	5	56	60	12
1N4762A	82	3.0	200	3000	0.25	5	62.2	55	11
1N4763A	91	2.8	250	3000	0.25	5	69.2	50	10
1N4764A	100	2.5	350	3000	0.25	5	76.0	45	9

 $<sup>^{1)}</sup>$  Based on dc-measurement at thermal equilibrium while maintaining the lead temperature (T<sub>L</sub>) at 30 °C + 1 °C, 9.5 mm (3/8") from the

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<sup>&</sup>lt;sup>2)</sup> Valid provided that electrodes at a distance of 4 mm from case are kept at ambient temperature.

 $<sup>^{3)}</sup>$  t<sub>p</sub> = 10 ms.

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**Typical Characteristics** T<sub>amb</sub> = 25 °C, unless otherwise specified

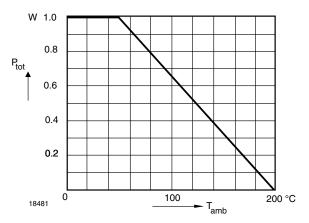
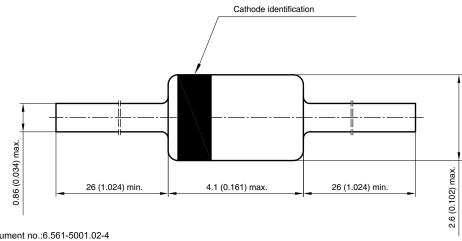


Figure 1. Admissible Power Dissipation vs. Ambient Temperature

## Package Dimensions in millimeters (inches): DO-41



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