

# 1N4728A THRU 1N4761A

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# 1N4728A THRU 1N4761A

## 1000mW Axial Lead Zener Diodes - 3.3V-75V

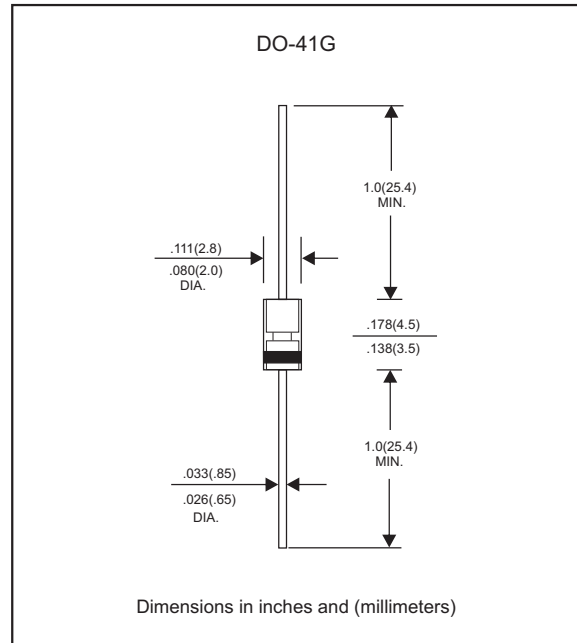
### Features

- High reliability
- Very sharp reverse characteristic
- Wide zener reverse voltage range 3.3V to 75V.
- Low reverse current level
- VZ-tolerance  $\pm 5\%$
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

### Mechanical data

- Case : Glass, DO-41G
- Terminals :Plated terminals, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any
- Weight : Approximated 0.31 gram

### Package outline



### MAXIMUM RATINGS (at $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 200 \text{ mA}$	$V_F$			1.20	V
Power dissipation	$T_{amb} \leq 50^\circ\text{C}$	$P_D$			1000	mW
Thermal resistance	Junction ambient	$R_{\theta JA}$		100		$^\circ\text{C}/\text{W}$
Operating junction temperature range		$T_J$	-65		+175	$^\circ\text{C}$
Storage temperature range		$T_{STG}$	-65		+175	$^\circ\text{C}$

These ratings are limiting values above which the serviceability of the diode may be impaired

**Electrical characteristics** (at  $T_A=25^\circ\text{C}$  unless otherwise noted)

Part No.	Marking code	Zener voltage			Test current	Zener impedance			Leakage current	
		$V_Z @ I_{ZT}$ (Volts)				$I_{ZT}$	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	$I_{ZK}$	$I_R$
		Min.	Nom.	Max.	mA	( $\Omega$ )Max	( $\Omega$ )Max	mA	( $\mu\text{A}$ )Max	Volts
1N4728A	1N4728A	3.140	3.3	3.470	76	10	400	1.00	100	1.0
1N4729A	1N4729A	3.420	3.6	3.780	69	10	400	1.00	100	1.0
1N4730A	1N4730A	3.710	3.9	4.100	64	9	400	1.00	50	1.0
1N4731A	1N4731A	4.090	4.3	4.520	58	9	400	1.00	10	1.0
1N4732A	1N4732A	4.470	4.7	4.940	53	8	500	1.00	10	1.0
1N4733A	1N4733A	4.850	5.1	5.360	49	7	550	1.00	10	1.0
1N4734A	1N4734A	5.320	5.6	5.880	45	5	600	1.00	10	2.0
1N4735A	1N4735A	5.890	6.2	6.510	41	2	700	1.00	10	3.0
1N4736A	1N4736A	6.460	6.8	7.140	37	3.5	700	1.00	10	4.0
1N4737A	1N4737A	7.130	7.5	7.880	34	4.0	700	0.50	10	5.0
1N4738A	1N4738A	7.790	8.2	8.610	31	4.5	700	0.50	10	6.0
1N4739A	1N4739A	8.645	9.1	9.560	28	5	700	0.50	10	7.0
1N4740A	1N4740A	9.50	10	10.5	25	7	700	0.25	10	7.6
1N4741A	1N4741A	10.45	11	11.55	23	8	700	0.25	5	8.4
1N4742A	1N4742A	11.40	12	12.60	21	9	700	0.25	5	9.1
1N4743A	1N4743A	12.35	13	13.65	19	10	700	0.25	5	9.9
1N4744A	1N4744A	14.25	15	15.75	17	14	700	0.25	5	11.4
1N4745A	1N4745A	15.20	16	16.80	15.5	16	700	0.25	5	12.2
1N4746A	1N4746A	17.10	18	18.90	14	20	750	0.25	5	13.7
1N4747A	1N4747A	19.00	20	21.00	12.5	22	750	0.25	5	15.2
1N4748A	1N4748A	20.90	22	23.10	11.5	23	750	0.25	5	16.7
1N4749A	1N4749A	22.80	24	25.20	10.5	25	750	0.25	5	18.2
1N4750A	1N4750A	25.65	27	28.35	9.5	35	750	0.25	5	20.6
1N4751A	1N4751A	28.50	30	31.50	8.5	40	1000	0.25	5	22.8
1N4752A	1N4752A	31.35	33	34.65	7.5	45	1000	0.25	5	25.4
1N4753A	1N4753A	34.20	36	37.80	7.0	50	1000	0.25	5	27.4
1N4754A	1N4754A	37.05	39	40.95	6.5	60	1000	0.25	5	29.7
1N4755A	1N4755A	40.85	43	45.15	6.0	70	1500	0.25	5	32.7
1N4756A	1N4756A	44.65	47	49.35	5.5	80	1500	0.25	5	35.8
1N4757A	1N4757A	48.45	51	53.55	5.0	95	1500	0.25	5	38.8
1N4758A	1N4758A	53.20	56	58.80	4.5	110	2000	0.25	5	42.6
1N4759A	1N4759A	58.90	62	65.10	4.0	125	2000	0.25	5	47.1
1N4760A	1N4760A	64.60	68	71.40	3.7	150	2000	0.25	5	51.7
1N4761A	1N4761A	71.25	75	78.75	3.3	175	2000	0.25	5	56.0

Note : 5% tolerance of Zener voltage

## Rating and characteristic curves (1N4728A THRU 1N4761A)

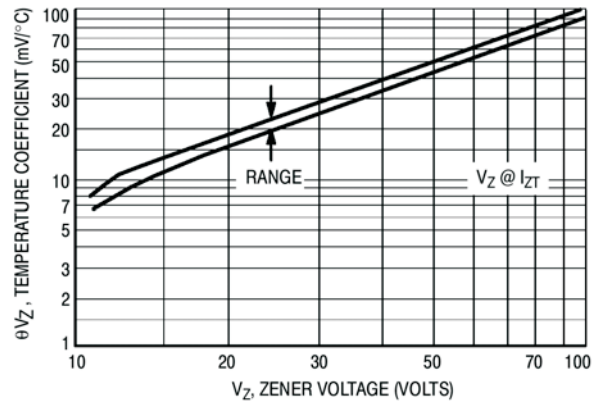
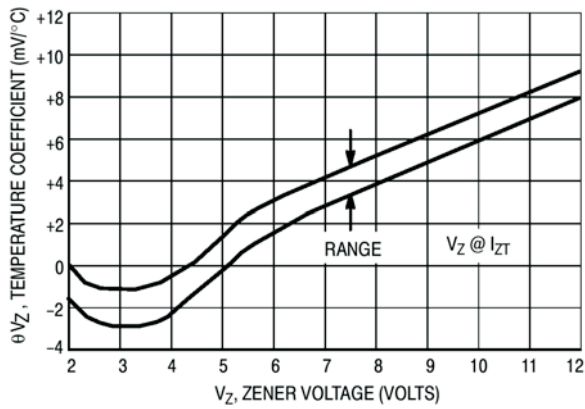


Figure 1. Temperature coefficients  
( $-55^\circ\text{C}$  to  $+150^\circ\text{C}$  temperature range; 90% of the units are in the ranges indicated.)

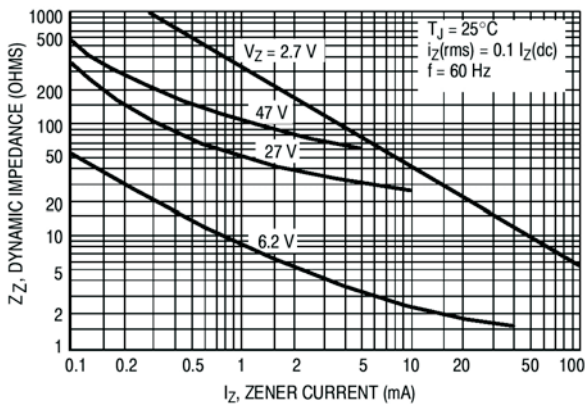


Figure 2. Effect of zener current on zener impedance

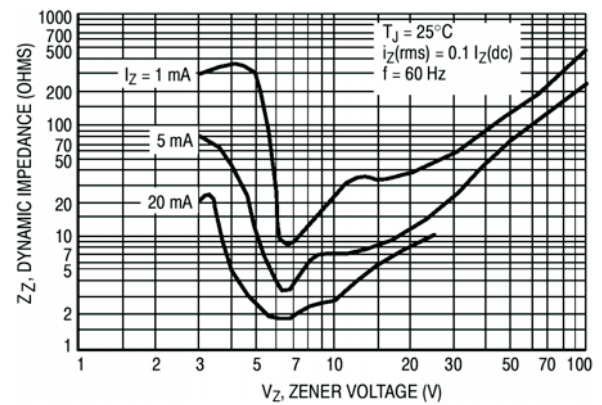




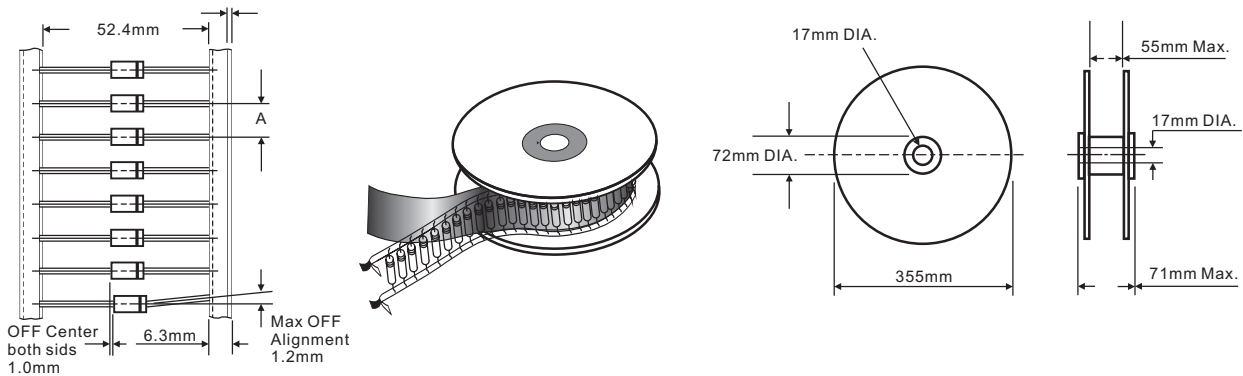
Figure 3. Effect of zener voltage on zener impedance

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## Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

## Taping & bulk specifications for AXIAL devices



### REEL PACKING

DEVICE CASE TYPE	Q'TY 1 (PCS / REEL)	COMPONENT SPACING "A" in FIG. A	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
DO-41G	5,000	5 mm	360 * 340 * 370	20,000	10.8

### AMMO PACKING

DEVICE CASE TYPE	Q'TY 1 (PCS / BOX)	INNER BOX SIZE (m/m)	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
DO-41G/52mm	2,500	250 * 76 * 85	440 * 270 * 340	50,000	15.7

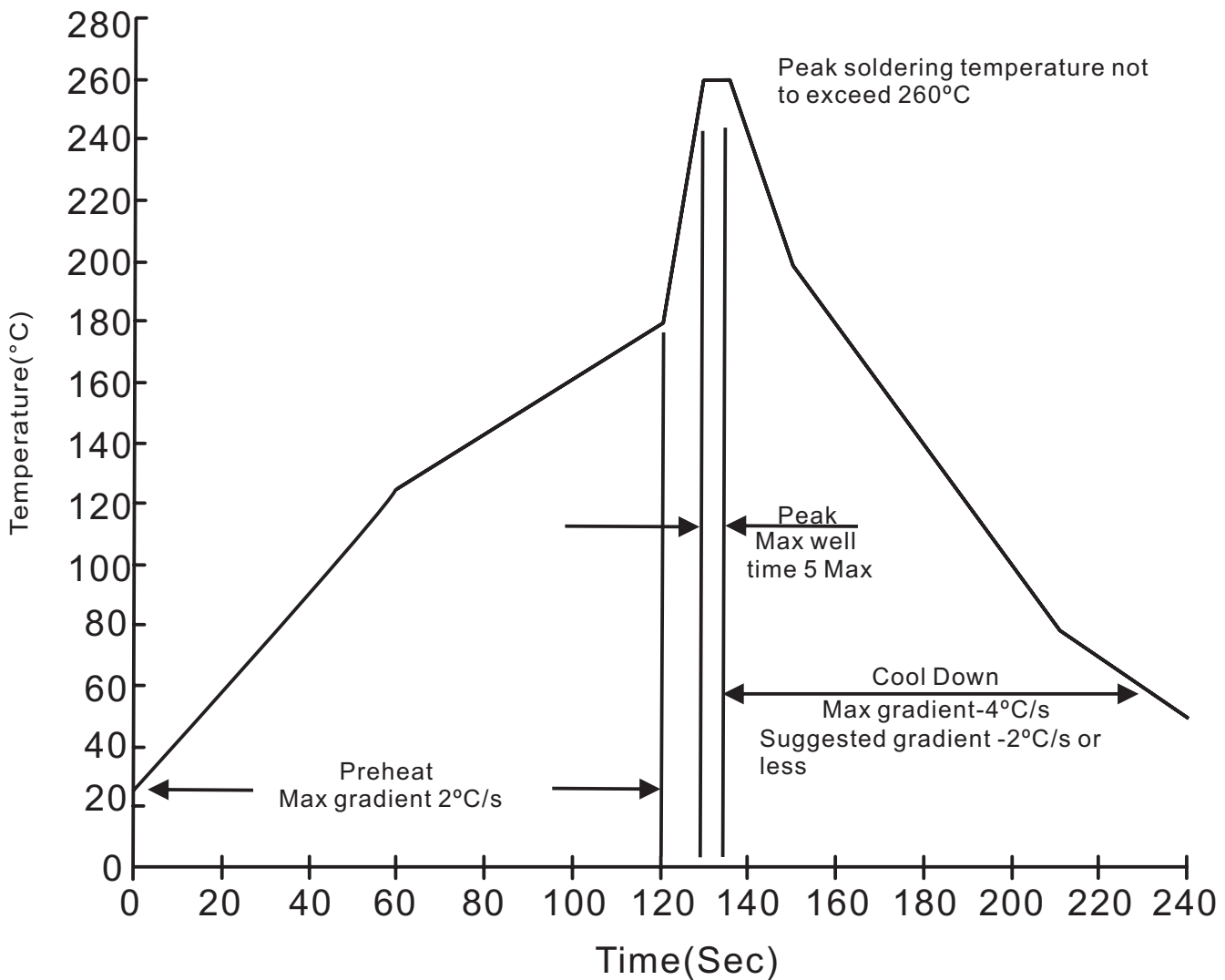
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**BULK PACKING**

DEVICE CASE TYPE	Q'TY 1 (PCS / BOX)	INNER BOX SIZE (m/m)	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
DO-41G	5,000	180 * 155 * 78	465 * 220 * 260	50,000	20.6

**Suggested thermal profiles for soldering processes**

1. Lead free temperature profile wave-soldering



**1N4728A THRU 1N4761A****High reliability test capabilities**

Item Test	Conditions	Reference
1. Solder Resistance	at 260±5°C for 10±2sec. immerse body into solder 1/16"±1/32"	MIL-STD-750D METHOD-2031
2. Solderability	at 245±5°C for 5 sec.	MIL-STD-202F METHOD-208
3. Pull Test	1kg in axial lead direction for 10 sec.	MIL-STD-750D METHOD-2036
4. Bend Lead	1kg weight applied to each lead bending arc 90°±5° for 3 times.	MIL-STD-750D METHOD-2036
5. High Temperature Reverse Bias	$V_R=80\%$ rate at $T_j=175^\circ\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
6. Pressure Cooker	15P <sub>SIG</sub> at $T_A=121^\circ\text{C}$ for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to +125°C dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Humidity	at $T_A=85^\circ\text{C}$ , RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
9. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031