

# 1N4728A-G SERIES

## SILICON ZENER DIODE

**VOLTAGE** 3.3 to 75 Volt    **POWER** 1 Watt

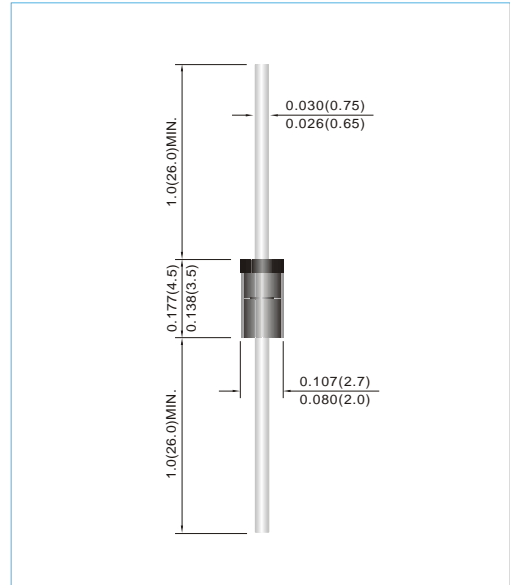
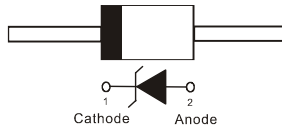
**DO-41G**    Unit : inch(mm)

### FEATURES

- Low inductance
- High temperature soldering : 260°C /10 seconds at terminals
- Glass package has Underwriters Laboratory Flammability Classification
- Lead free in compliance with EU RoHS 2011/65/EU directive

### MECHANICAL DATA

- Case: Molded Glass DO-41G
- Terminals: Axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes positive end
- Weight: 0.012 ounce, 0.317 gram



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Units
Power Dissipation at $T_A \leq 50^\circ\text{C}$	$P_{TOT}$	1*	W
Junction Temperature	$T_J$	-65 to +200	°C
Storage Temperature Range	$T_{STG}$	-65 to +200	°C

\*Valid provided that leads at a distance of 10mm from case are kept at ambient temperature.

Parameter	Symbol	Min.	Typ.	Max.	Units
Thermal Resistance Junction to Ambient Air	$R_{\theta JA}$	--	--	170*	°C/W
Forward Voltage at $I_F = 200\text{mA}$	$V_F$	--	--	1.2	V

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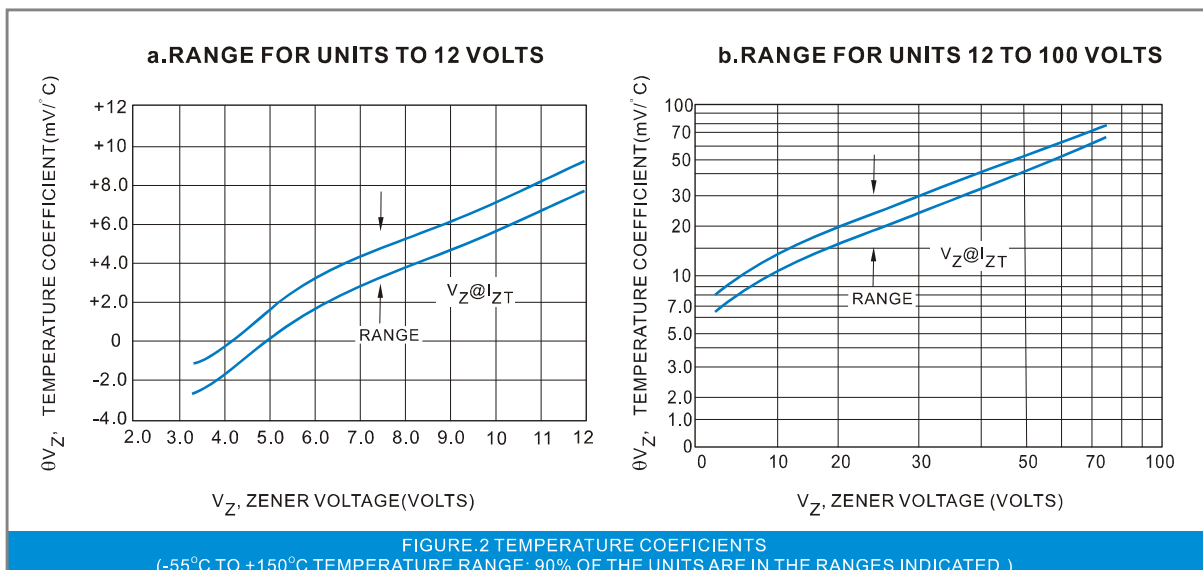
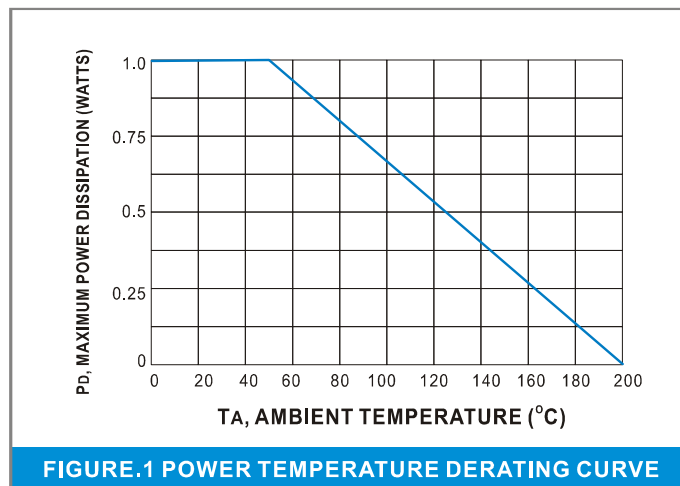
Part Number	Nominal Zener Voltage			Max. Zener Impedance				Maximum Leakage Current		Marking Code
	V <sub>Z</sub> @ I <sub>ZT</sub>			Z <sub>ZT</sub> @ I <sub>ZT</sub>		Z <sub>ZK</sub> @ I <sub>ZK</sub>		I <sub>R</sub> @ V <sub>R</sub>		
	Nom. V	Min. V	Max. V	Ω	mA	Ω	mA	μA	V	
1 Watt Zener Diodes										
1N4728A-G	3.3	3.14	3.47	10	76	400	1	100	1	1N4728A
1N4729A-G	3.6	3.42	3.78	10	69	400	1	100	1	1N4729A
1N4730A-G	3.9	3.71	4.1	9	64	400	1	50	1	1N4730A
1N4731A-G	4.3	4.09	4.52	9	58	400	1	10	1	1N4731A
1N4732A-G	4.7	4.47	4.94	8	53	500	1	10	1	1N4732A
1N4733A-G	5.1	4.85	5.36	7	49	550	1	10	1	1N4733A
1N4734A-G	5.6	5.32	5.88	5	45	600	1	10	2	1N4734A
1N4735A-G	6.2	5.89	6.51	2	41	700	1	10	3	1N4735A
1N4736A-G	6.8	6.46	7.14	3.5	37	700	1	5	4	1N4736A
1N4737A-G	7.5	7.13	7.88	4	34	700	0.5	5	5	1N4737A
1N4738A-G	8.2	7.79	8.61	4.5	31	700	0.5	5	6	1N4738A
1N4739A-G	9.1	8.65	9.56	5	28	700	0.5	0.5	7	1N4739A
1N4740A-G	10	9.5	10.5	7	25	700	0.25	0.5	7.6	1N4740A
1N4741A-G	11	10.45	11.55	8	23	700	0.25	0.1	8.4	1N4741A
1N4742A-G	12	11.4	12.6	9	21	700	0.25	0.1	9.1	1N4742A
1N4743A-G	13	12.35	13.65	10	19	700	0.25	0.1	9.9	1N4743A
1N4744A-G	15	14.25	15.75	14	17	700	0.25	0.1	11.4	1N4744A
1N4745A-G	16	15.2	16.8	16	15.5	700	0.25	0.1	12.2	1N4745A
1N4746A-G	18	17.1	18.9	20	14	750	0.25	0.1	13.7	1N4746A
1N4747A-G	20	19	21	22	12.5	750	0.25	0.1	15.2	1N4747A
1N4748A-G	22	20.9	23.1	23	11.5	750	0.25	0.1	16.7	1N4748A
1N4749A-G	24	22.8	25.2	25	10.5	750	0.25	0.1	18.2	1N4749A
1N4750A-G	27	25.65	28.35	35	9.5	750	0.25	0.1	20.6	1N4750A
1N4751A-G	30	28.5	31.5	40	8.5	1000	0.25	0.1	22.8	1N4751A
1N4752A-G	33	31.35	34.65	45	7.5	1000	0.25	0.1	25.1	1N4752A
1N4753A-G	36	34.2	37.8	50	7	1000	0.25	0.1	27.4	1N4753A
1N4754A-G	39	37.05	40.95	60	6.5	1000	0.25	0.1	29.7	1N4754A
1N4755A-G	43	40.85	45.15	70	6	1500	0.25	0.1	32.7	1N4755A
1N4756A-G	47	44.65	49.35	80	5.5	1500	0.25	0.1	35.8	1N4756A
1N4757A-G	51	48.45	53.55	95	5	1500	0.25	0.1	38.8	1N4757A
1N4758A-G	56	53.2	58.8	110	4.5	2000	0.25	0.1	42.6	1N4758A
1N4759A-G	62	58.9	65.1	125	4	2000	0.25	0.1	47.1	1N4759A
1N4760A-G	68	64.6	71.4	150	3.7	2000	0.25	0.1	51.7	1N4760A
1N4761A-G	75	71.25	78.75	175	3.3	2000	0.25	0.1	56	1N4761A

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**NOTE:**

1. Tolerance and Type Number Designation. The type numbers listed have a standard tolerance on the nominal zener voltage of  $\pm 5\%$
2. Specials Available Include:
  - A. Nominal zener voltages between the voltages shown and tighter voltage tolerances.
  - B. Matched sets.
3. Zener Voltage ( $V_Z$ ) Measurement. Guarantees the zener voltage when measured at 90 seconds while maintaining the lead temperature ( $T_L$ ) at  $30^\circ\text{C} \pm 1^\circ\text{C}$ , from the diode body.
4. Zener Impedance ( $Z_Z$ ) Derivation. The zener impedance is derived from the 60 cycle ac voltage, which results when an ac current having an rms value equal to 10% of the dc zener current ( $I_{ZT}$  or  $I_{ZK}$ ) is superimposed on  $I_{ZT}$  or  $I_{ZK}$ .
5. Surge Current ( $I_r$ ) Non-Repetitive. The rating listed in the electrical characteristics table is maximum peak, non-repetitive, reverse surge current of 1/2

### RATING AND CHARACTERISTICS CURVES



# 1N4728A-G SERIES

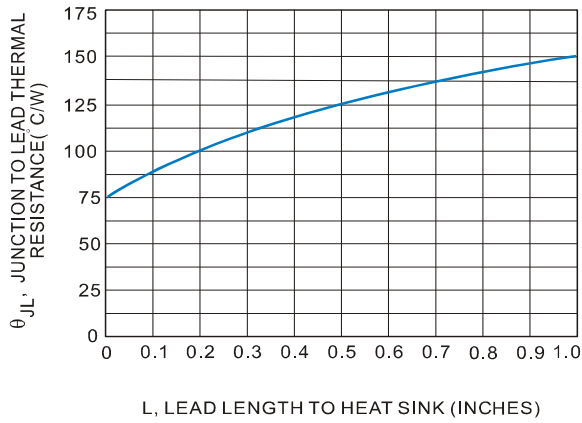


FIGURE.3 TYPICAL THERMAL RESISTANCE versus LEAD LENGTH

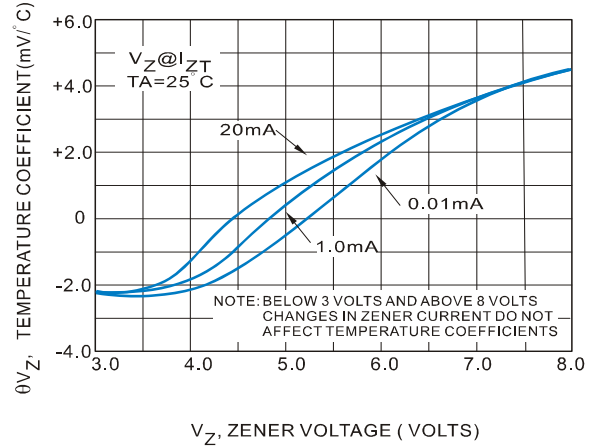
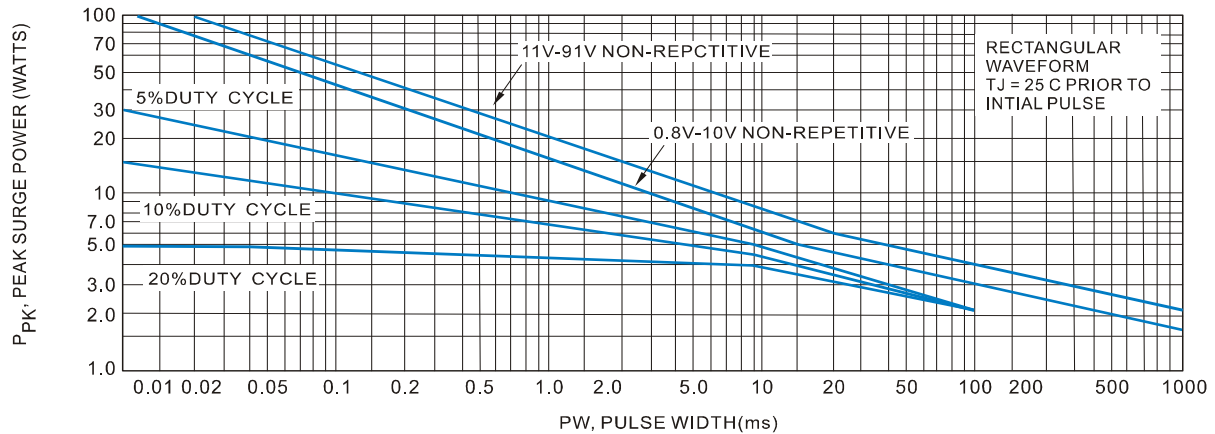


FIGURE.4 EFFECT OF ZENER CURRENT



This graph represents 90 percentile data points.  
FOR worst-case design characteristics, multiply surge power by 2/3

FIGURE.5 MAXIMUM SURGE POWER

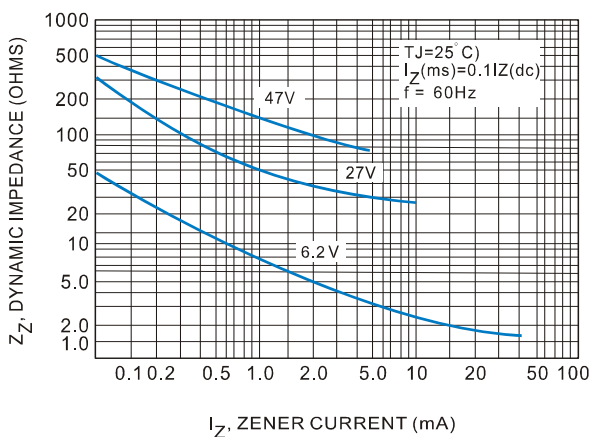


FIGURE.6 EFFECT OF ZENER CURRENT ON ZENER IMPEDANCE

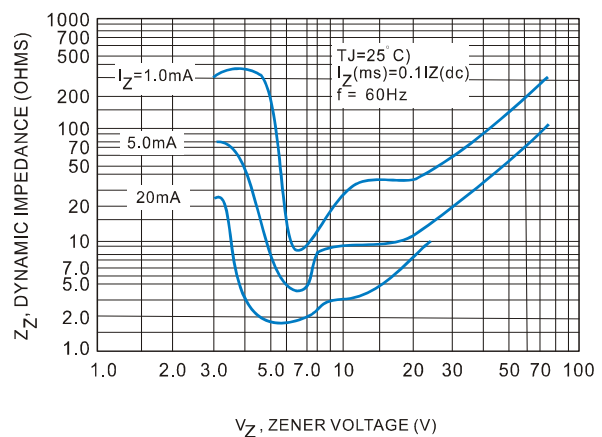
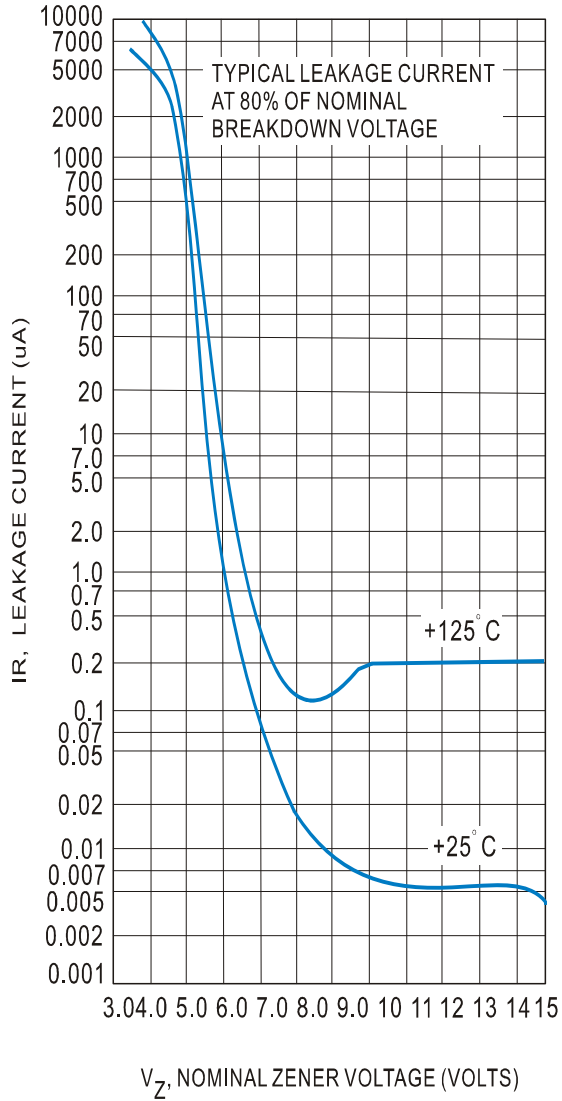
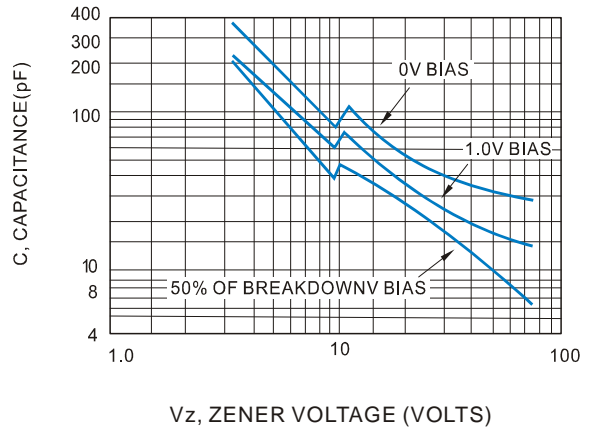


FIGURE.7 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

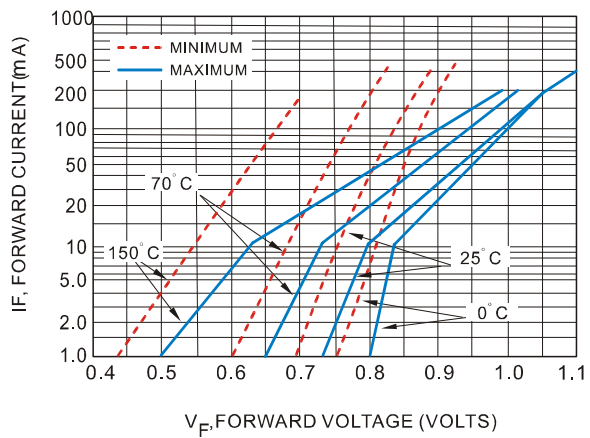
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**FIGURE.8 TYPICAL LEAKAGE CURRENT**



**FIGURE.9 TYPICAL CAPACITANCE versus  $V_Z$**



**FIGURE.10 TYPICAL FORWARD CHARACTERISTICS**

## 1N4728A-G SERIES

### Part No\_packing code\_Version

1N4728A-G\_AX\_10001

1N4728A-G\_AY\_10001

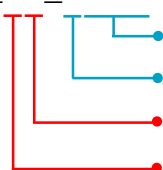
1N4728A-G\_BO\_10001

1N4728A-G\_R2\_10001

For example :

**RB500V-40\_R2\_00001**

Part No.



Serial number

Version code means HF

Packing size code means 13"

Packing type means T/R

Packing Code <b>XX</b>				Version Code <b>XXXXX</b>		
Packing type	1 <sup>st</sup> Code	Packing size code	2 <sup>nd</sup> Code	HF or RoHS	1 <sup>st</sup> Code	2 <sup>nd</sup> ~5 <sup>th</sup> Code
Tape and Ammunition Box (T/B)	<b>A</b>	N/A	<b>0</b>	<b>HF</b>	<b>0</b>	serial number
Tape and Reel (T/R)	<b>R</b>	7"	<b>1</b>	<b>RoHS</b>	<b>1</b>	serial number
Bulk Packing (B/P)	<b>B</b>	13"	<b>2</b>			
Tube Packing (T/P)	<b>T</b>	26mm	<b>X</b>			
Tape and Reel (Right Oriented) (TRR)	<b>S</b>	52mm	<b>Y</b>			
Tape and Reel (Left Oriented) (TRL)	<b>L</b>	PANASERT T/B CATHODE UP (PBCU)	<b>U</b>			
FORMING	<b>F</b>	PANASERT T/B CATHODE DOWN (PBCD)	<b>D</b>			

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