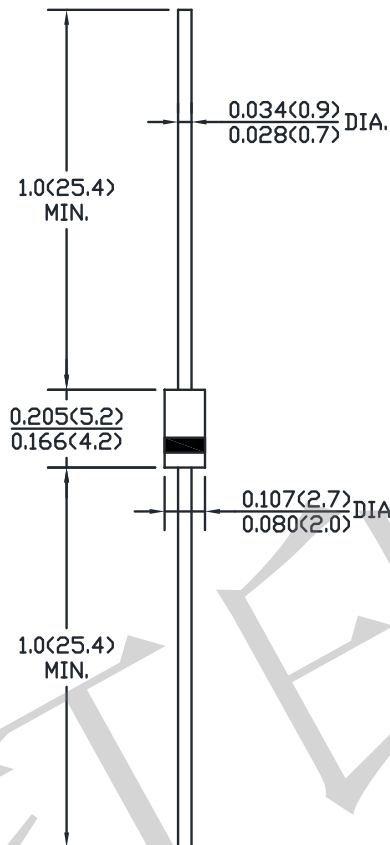


## Transient Voltage Suppressor

**Breakdown Voltage 3.3 to 30 Volts**

**CASE: DO-204AL (DO-41)**



**Dimensions in inches and (millimeters)**

### Features

- Extensive Voltages selection from 3.3 to 30V
- Silicon 1.0 Watt Zener Diodes
- Hermetically sealed glass body construction

### Application

- Voltage stabilization
- Regulates voltage over a broad operating current and temperature range
- Flexible axial-lead mounting terminals

### Mechanical Data

- **Case:** Void-free transfer molded thermosetting epoxy body meeting UL94V-O
- **Terminals:** Tin-Lead or ROHS Compliant annealed matte-Tin plating readily solderable per MIL-STD-750, Method 2026
- **Marking:** Part number
- **Polarity:** Cathode indicated by band
- **Weight:** 0.3g (Approximately)

### Maximum Ratings and Electrical Characteristics @ 25°C unless otherwise specified

Symbol	Conditions	Value	Unit
$P_{M(AV)}$	Steady state power at $T_L \leq 95^\circ\text{C}$ 0.375" (10mm) from body	1.0	W
	Steady state power at $T_A \leq 35^\circ\text{C}$ when mounted on FR4 PC described for thermal resistance (also see Fig.1)	1.0	W
$V_F$	Maximum instantaneous forward voltage at 200mA	1.2	V
$R_{\theta JL}$	Thermal resistance junction to lead	80	$^\circ\text{C/W}$
$R_{\theta JA}$	Thermal resistance junction to ambient	140	$^\circ\text{C/W}$
$T_J, T_{STG}$	Operating and Storage Temperature	-65 to +175	$^\circ\text{C}$

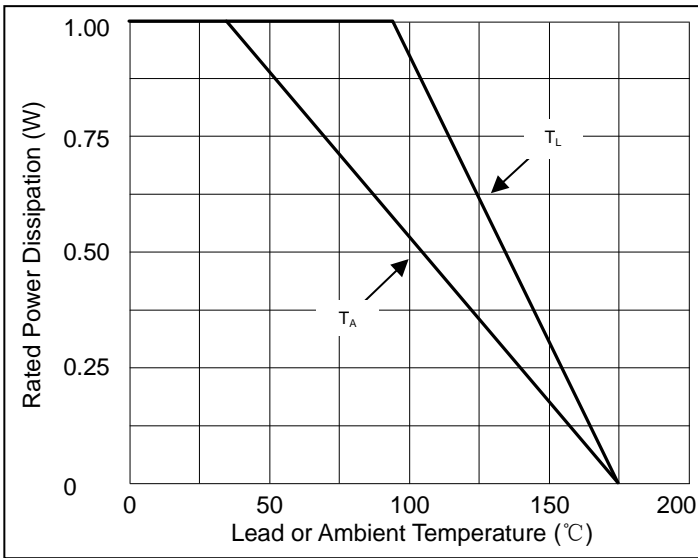
## Electrical Characteristics @ 25°C (Unless Otherwise Noted)

JEDEC Type Number (Note1)	Zener Voltage $V_Z$ @ $I_{ZT}$ (Note4)	Test Current	Maximum Dynamic Impedance (Note2) $Z_{ZT}$ @ $I_{ZT}$	Maximum Knee Impedance $Z_{Zk}$ @ $I_{Zk}$	Maximum Regulator Current $T_A=50^\circ\text{C}$	Knee Current	Maximum Reverse Current $I_R$ @ $V_R$		Maximum Surge Current (Note3)
	$V_Z$ (V)						$I_{ZT}$ (mA)	$Z_{ZT}$ (Ohms)	
1N4728A	3.3	76.0	10.0	400	276	1.00	100	1.0	1380
1N4729A	3.6	69.0	10.0	400	252	1.00	100	1.0	1260
1N4730A	3.9	64.0	9.0	400	234	1.00	50	1.0	1190
1N4731A	4.3	58.0	9.0	400	217	1.00	10	1.0	1070
1N4732A	4.7	53.0	8.0	500	193	1.00	10	1.0	970
1N4733A	5.1	49.0	7.0	550	178	1.00	10	1.0	890
1N4734A	5.6	45.0	5.0	600	162	1.00	10	2.0	810
1N4735A	6.2	41.0	2.0	700	146	1.00	10	3.0	730
1N4736A	6.8	37.0	3.5	700	133	1.00	10	4.0	660
1N4737A	7.5	34.0	4.0	700	121	0.50	10	5.0	605
1N4738A	8.2	31.0	4.5	700	110	0.50	10	6.0	550
1N4739A	9.1	28.0	5.0	700	100	0.50	10	7.0	500
1N4740A	10.0	25.0	7.0	700	91	0.25	10	7.6	454
1N4741A	11.0	23.0	8.0	700	83	0.25	5	8.4	414
1N4742A	12.0	21.0	9.0	700	76	0.25	5	9.1	380
1N4743A	13.0	19.0	10.0	700	69	0.25	5	9.9	344
1N4744A	15.0	17.0	14.0	700	61	0.25	5	11.4	304
1N4745A	16.0	15.5	16.0	700	57	0.25	5	12.2	285
1N4746A	18.0	14.0	20.0	750	50	0.25	5	13.7	250
1N4747A	20.0	12.5	22.0	750	45	0.25	5	15.2	225
1N4748A	22.0	11.5	23.0	750	41	0.25	5	16.7	205
1N4749A	24.0	10.5	25.0	750	38	0.25	5	18.2	190
1N4750A	27.0	9.5	35.0	750	34	0.25	5	20.6	170
1N4751A	30.0	8.5	40.0	1000	30	0.25	5	22.8	150

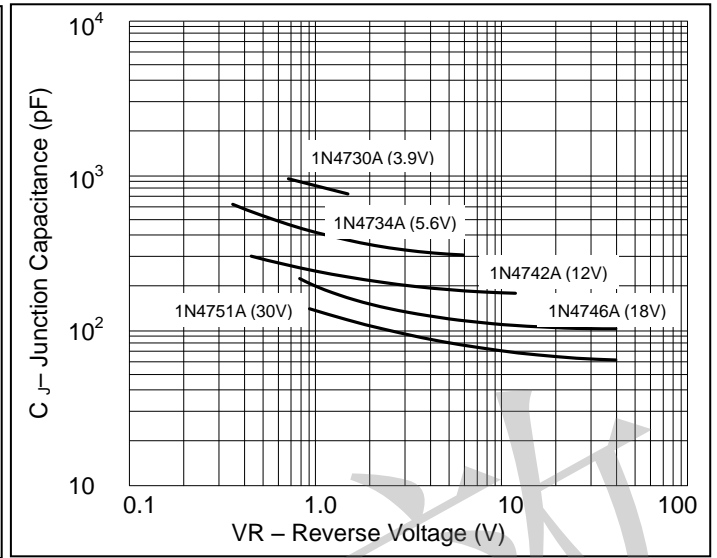
Note:

1. The JEDEC type numbers shown with an A suffix have a 5% tolerance on nominal zener voltage. No suffix signifies a 10% tolerance, C signifies 2%, and D signifies 1% tolerance.
2. The Zener impedance is derived from the 60 HZ ac voltage that 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  $I_{Zk}$ . Zener impedance is measured at two points to ensure a sharp knee on the breakdown curve and eliminate unstable units.
3. The reverse surge current is measured at 25°C ambient using a 1/2 square wave or equivalent sine wave pulse 1/120 second duration superimposed on  $I_{ZT}$ .
4. Zener voltage ( $V_Z$ ) is measured at  $T_L=25^\circ\text{C}$  (+8,-2°C) and 90 seconds after application of dc current.

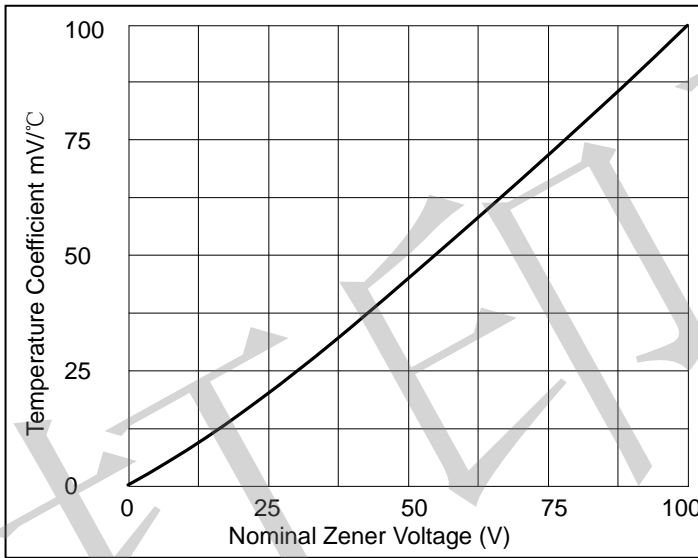
## Characteristic Curve



**Fig.1 Power Derating Curve**



**Fig.2 Capacitance vs. Voltage for Representative Types**



**Fig.3 Temp Coefficient vs. Zener Voltage**