

- 1N3821A-1 THRU 1N3828A-1 AVAILABLE IN JAN, JANTX AND JANTXV
PER MIL-PRF-19500/115
- 1 WATT ZENER DIODE
- DOUBLE PLUG CONSTRUCTION
- METALLURGICALLY BONDED

1N3821A thru 1N3828A
and
1N3821A-1 thru 1N3828A-1

MAXIMUM RATINGS

Operating Temperature: -65°C to +175°C
Storage Temperature: -65°C to +175°C
DC Power Dissipation: 1 watt @ $T_L = 95^\circ\text{C}$
Power Derating: 12.5 mW / °C above $T_L = 95^\circ\text{C}$
Forward Voltage @ 200mA = 1.2 volts maximum

ELECTRICAL CHARACTERISTICS @ 25°C

| CDI TYPE NUMBER (NOTE 1) | NOMINAL ZENER VOLTAGE $V_Z @ 1Z_T$ (NOTE 3) | ZENER TEST CURRENT $1Z_T$ | MAXIMUM ZENER IMPEDANCE | | MAX. DC ZENER CURRENT $1Z_M$ | MAX. REVERSE LEAKAGE CURRENT $I_R @ V_R$ | |
|-----------------------------------|---------------------------------------------------------|------------------------------------|-------------------------|----------------------------------------|---------------------------------------|------------------------------------------------|-------|
| | | | $Z_{ZT} @ 1Z_T$ | $Z_{ZK} @ 1Z_K=1\text{mA}$ (NOTE 2) | | μA | VOLTS |
| | VOLTS | mA | OHMS | OHMS | mA | μA | VOLTS |
| 1N3821 | 3.3 | 76 | 10 | 400 | 276 | 100 | 1 |
| 1N3821A | 3.3 | 76 | 10 | 400 | 276 | 100 | 1 |
| 1N3822 | 3.6 | 69 | 10 | 400 | 252 | 75 | 1 |
| 1N3822A | 3.6 | 69 | 10 | 400 | 252 | 75 | 1 |
| 1N3823 | 3.9 | 64 | 9 | 400 | 238 | 25 | 1 |
| 1N3823A | 3.9 | 64 | 9 | 400 | 238 | 25 | 1 |
| 1N3824 | 4.3 | 58 | 9 | 400 | 213 | 5 | 1 |
| 1N3824A | 4.3 | 58 | 9 | 400 | 213 | 5 | 1 |
| 1N3825 | 4.7 | 53 | 8 | 500 | 194 | 5 | 1 |
| 1N3825A | 4.7 | 53 | 8 | 500 | 194 | 5 | 1 |
| 1N3826 | 5.1 | 49 | 7 | 550 | 178 | 3 | 1 |
| 1N3826A | 5.1 | 49 | 7 | 550 | 178 | 3 | 1 |
| 1N3827 | 5.6 | 45 | 5 | 600 | 162 | 3 | 2 |
| 1N3827A | 5.6 | 45 | 5 | 600 | 162 | 3 | 2 |
| 1N3828 | 6.2 | 41 | 2 | 700 | 146 | 3 | 3 |
| 1N3828A | 6.2 | 41 | 2 | 700 | 146 | 3 | 3 |

NOTE 1 No suffix = $\pm 10\%$ tolerance on nominal Zener voltage, suffix "A" signifies $\pm 5\%$, suffix "C" signifies $\pm 2\%$, suffix "D" signifies $\pm 1\%$.

NOTE 2 Zener impedance is derived by superimposing on $1Z_T$ A 60Hz rms a.c. current equal to 10% of $1Z_T$.

NOTE 3 Zener voltage is measured with the device junction in thermal equilibrium at an ambient temperature of $25^\circ\text{C} \pm 3^\circ\text{C}$.

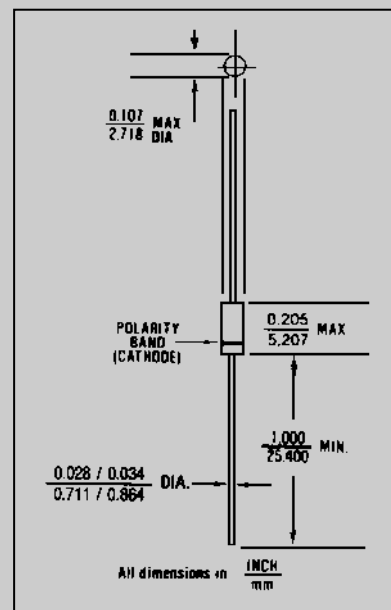


FIGURE 1

DESIGN DATA

CASE: Hermetically sealed glass case, DO41.

LEAD MATERIAL: Copper clad steel

LEAD FINISH: Tin / Lead

THERMAL RESISTANCE: ($R_{\theta JEC}$): 80 °C/W maximum at $L = .375$ inch

THERMAL IMPEDANCE: ($Z_{\theta JX}$): 15 °C/W maximum

POLARITY: Diode to be operated with the banded (cathode) end positive.

MOUNTING POSITION: Any.

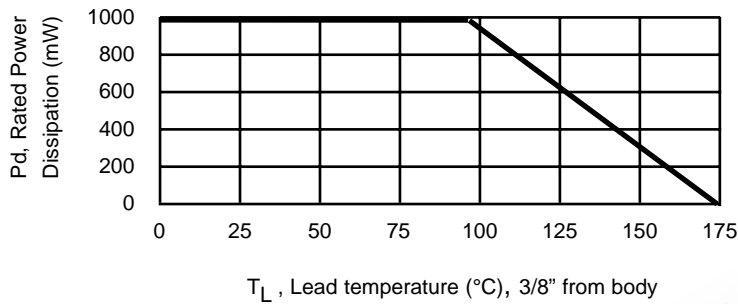


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1N3821A thru 1N3828A and 1N3821A-1 thru 1N3828A-1

FIGURE 2



T_L, Lead temperature (°C), 3/8" from body

POWER DERATING CURVE

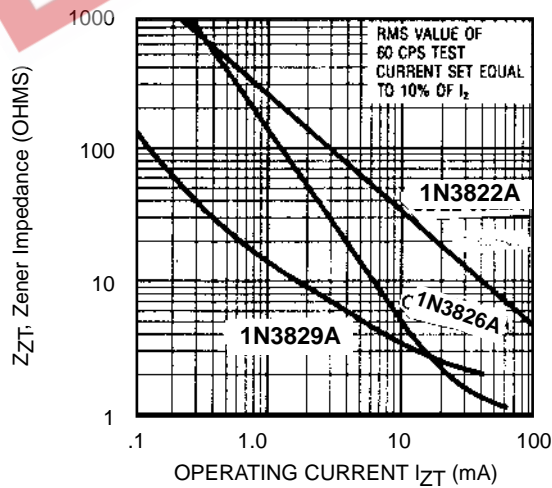


FIGURE 3
ZENER IMPEDANCE VS. OPERATING CURRENT