

Features

- ✧ Low profile package
- ✧ Built-in strain relief
- ✧ Glass passivated junction
- ✧ Low inductance
- ✧ Typical I_R less than 5uA above 11V
- ✧ High temperature soldering guaranteed:
260°C / 10 seconds at terminals
- ✧ Plastic package has Underwriters
Laboratory Flammability Classification 94V-0
- ✧ Green compound with suffix "G" on packing
code & prefix "G" on datecode



Mechanical Data

- ✧ Case: Molded plastic DO-41
- ✧ Epoxy: UL 94V-0 rate flame retardant
- ✧ Lead: Pure tin plated, lead free,
solderable per MIL-STD-202, method 2025
- ✧ Polarity: Color Band denotes cathode end
- ✧ Mounting position: Any
- ✧ Weight: 0.3 gram

Ordering Information (example)

| Part No. | Package | Packing | INNER TAPE | Packing code | Packing code (Green) |
|----------|---------|---------------|------------|--------------|----------------------|
| 1N4740A | DO-41 | 3K / AMMO box | 52mm | A0 | A0G |

Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

| Type Number | Symbol | Value | Unit |
|---|----------------|-------------|----------------|
| Peak Power Dissipation at TA=50°C, Derate above 50°C (Note 1) | P_D | 1.0 6.67 | Watts mW/°C |
| Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)(Note 2) | I_{FSM} | 10 | Amps |
| Operating and Storage Temperature Range | T_J, T_{STG} | -55 to +150 | °C |

Note 1: Mounted on Cu-Pad size 5mm x 5mm x 1.6mm on PCB

Note 2: Measure on 8.3ms Single half Sine-Wave of equivalent square wave, duty cycle= 4 pulse per minute maximum

ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

| Device (Note 1) | Zener Voltage | | | Test Current | Zener Impedance | | | Leakage Current | | Surge current T _A =25°C |
|--------------------|---------------------------------|------------------------------|--------|-----------------|----------------------------------|----------------------------------|------|--------------------------------|-------|---------------------------------------|
| | V _Z @I _{ZT} | | | I _{ZT} | Z _{ZT} @I _{ZT} | Z _{ZK} @I _{ZK} | | I _R @V _R | | I _R |
| | V | | | mA | Ω | Ω | mA | uA | V | mA |
| | Min. | Nom. (Note 2) (Note 3) | Max. | | | | | Max. | | |
| 1N4740A | 9.50 | 10 | 10.50 | 25.0 | 7 | 700 | 0.25 | 10 | 7.6 | 454 |
| 1N4741A | 10.45 | 11 | 11.55 | 23.0 | 8 | 700 | 0.25 | 5 | 8.4 | 414 |
| 1N4742A | 11.40 | 12 | 12.60 | 21.0 | 9 | 700 | 0.25 | 5 | 9.1 | 380 |
| 1N4743A | 12.35 | 13 | 13.65 | 19.0 | 10 | 700 | 0.25 | 5 | 9.9 | 344 |
| 1N4744A | 14.25 | 15 | 15.75 | 17.0 | 14 | 700 | 0.25 | 5 | 11.4 | 304 |
| 1N4745A | 15.20 | 16 | 16.80 | 15.5 | 16 | 700 | 0.25 | 5 | 12.2 | 285 |
| 1N4746A | 17.10 | 18 | 18.90 | 14.0 | 20 | 750 | 0.25 | 5 | 13.7 | 250 |
| 1N4747A | 19.00 | 20 | 21.00 | 12.5 | 22 | 750 | 0.25 | 5 | 15.2 | 225 |
| 1N4748A | 20.90 | 22 | 23.10 | 11.5 | 23 | 750 | 0.25 | 5 | 16.7 | 205 |
| 1N4749A | 22.80 | 24 | 25.20 | 10.5 | 25 | 750 | 0.25 | 5 | 18.2 | 190 |
| 1N4750A | 25.65 | 27 | 28.35 | 9.5 | 35 | 750 | 0.25 | 5 | 20.6 | 170 |
| 1N4751A | 28.50 | 30 | 31.50 | 8.5 | 40 | 1000 | 0.25 | 5 | 22.8 | 150 |
| 1N4752A | 31.35 | 33 | 34.65 | 7.5 | 45 | 1000 | 0.25 | 5 | 25.1 | 135 |
| 1N4753A | 34.20 | 36 | 37.80 | 7.0 | 50 | 1000 | 0.25 | 5 | 27.4 | 125 |
| 1N4754A | 37.05 | 39 | 40.95 | 6.5 | 60 | 1000 | 0.25 | 5 | 29.7 | 115 |
| 1N4755A | 40.85 | 43 | 45.15 | 6.0 | 70 | 1500 | 0.25 | 5 | 32.7 | 110 |
| 1N4756A | 44.65 | 47 | 49.35 | 5.5 | 80 | 1500 | 0.25 | 5 | 35.8 | 95 |
| 1N4757A | 48.45 | 51 | 53.55 | 5.0 | 95 | 1500 | 0.25 | 5 | 38.8 | 90 |
| 1N4758A | 53.20 | 56 | 58.80 | 4.5 | 110 | 2000 | 0.25 | 5 | 42.6 | 80 |
| 1N4759A | 58.90 | 62 | 65.10 | 4.0 | 125 | 2000 | 0.25 | 5 | 47.1 | 70 |
| 1N4760A | 64.60 | 68 | 71.40 | 3.7 | 150 | 2000 | 0.25 | 5 | 51.7 | 65 |
| 1N4761A | 71.25 | 75 | 78.75 | 3.3 | 175 | 2000 | 0.25 | 5 | 56.0 | 60 |
| 1N4762A | 77.90 | 82 | 86.10 | 3.0 | 200 | 3000 | 0.25 | 5 | 62.2 | 55 |
| 1N4763A | 86.45 | 91 | 95.55 | 2.8 | 250 | 3000 | 0.25 | 5 | 69.2 | 50 |
| 1N4764A | 95.00 | 100 | 105.00 | 2.5 | 350 | 3000 | 0.25 | 5 | 76.0 | 45 |
| 1M110Z | 104.50 | 110 | 115.50 | 2.3 | 450 | 4000 | 0.25 | 5 | 83.6 | - |
| 1M120Z | 114.00 | 120 | 126.00 | 2.0 | 550 | 4500 | 0.25 | 5 | 91.2 | - |
| 1M130Z | 123.50 | 130 | 136.50 | 1.9 | 700 | 5000 | 0.25 | 5 | 98.8 | - |
| 1M150Z | 142.50 | 150 | 157.50 | 1.7 | 1000 | 6000 | 0.25 | 5 | 114.0 | - |
| 1M160Z | 152.00 | 160 | 168.00 | 1.6 | 1100 | 6500 | 0.25 | 5 | 121.6 | - |
| 1M180Z | 171.00 | 180 | 189.00 | 1.4 | 1200 | 7000 | 0.25 | 5 | 136.8 | - |
| 1M200Z | 190.00 | 200 | 210.00 | 1.2 | 1500 | 8000 | 0.25 | 5 | 152.0 | - |

Notes:

- Tolerance and Type Number Designation. The type numbers listed have a standard tolerance on the nominal zener voltage of ±5%
- Specials Available Include:
 - Nominal zener voltages between the voltages shown and tighter voltage tolerances
 - Matched sets
- Zener Voltage (V_Z) Measurement. Guarantees the zener voltage when measured at 90 seconds while maintaining the lead temperature (T_L) at 30°C±1°C, from the diode body
- Zener Impedance (Z_Z) Derivation. The zener impedance is derived from the 60 cycle AC voltage, which results when an accurate having and rms value equal to 10% of the DC zener current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK}
- 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 square wave or equivalent sine wave pulse of 1/120 second duration superimposed on the test current, I_{ZT} per JEDEC registration; however, actual device capability is as described in Figure 11

RATINGS AND CHARACTERISTIC CURVES (1N4740A THRU 1M200Z)

FIG. 1 POWER TEMPERATURE DERATING CURVE

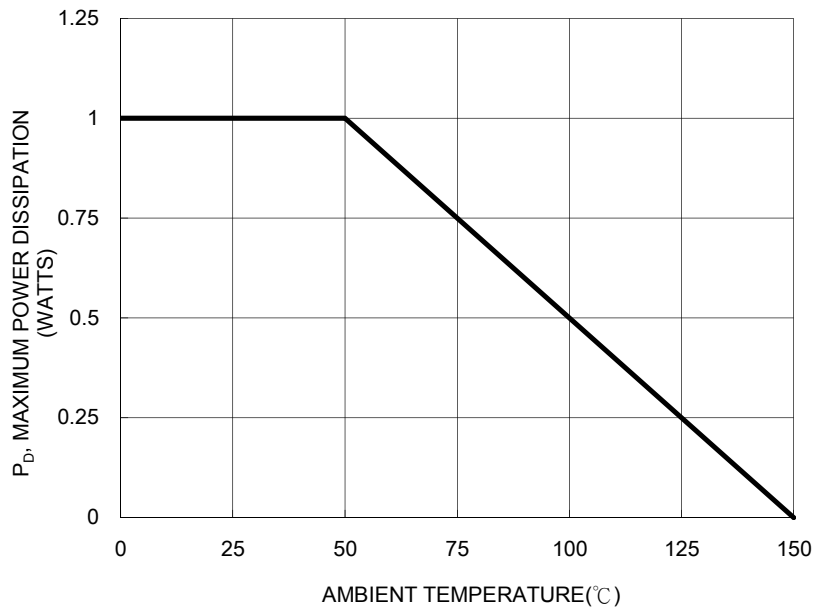


FIG. 2 TYPICAL FORWARD CHARACTERISTICS

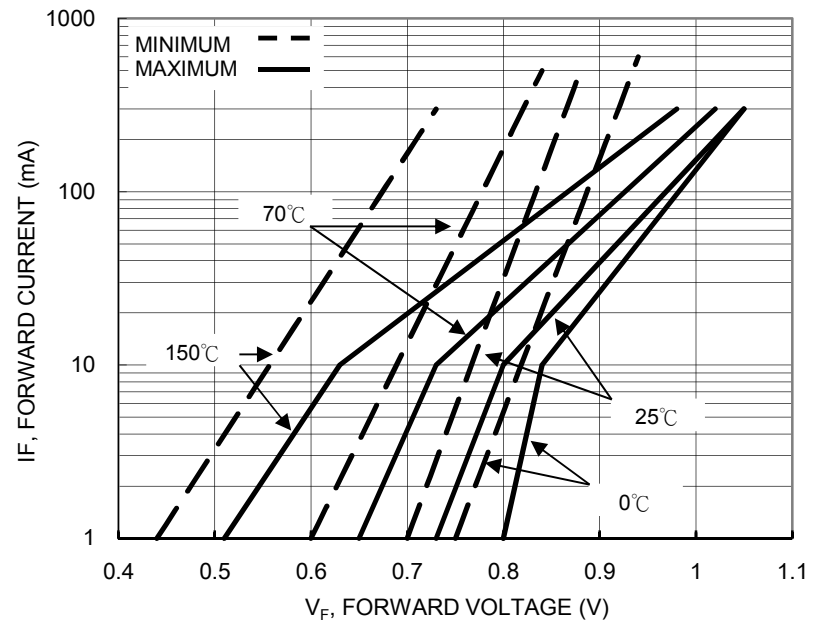


FIG.3 EFFECT OF ZENER CURRENT ON ZENER IMPEDANCE

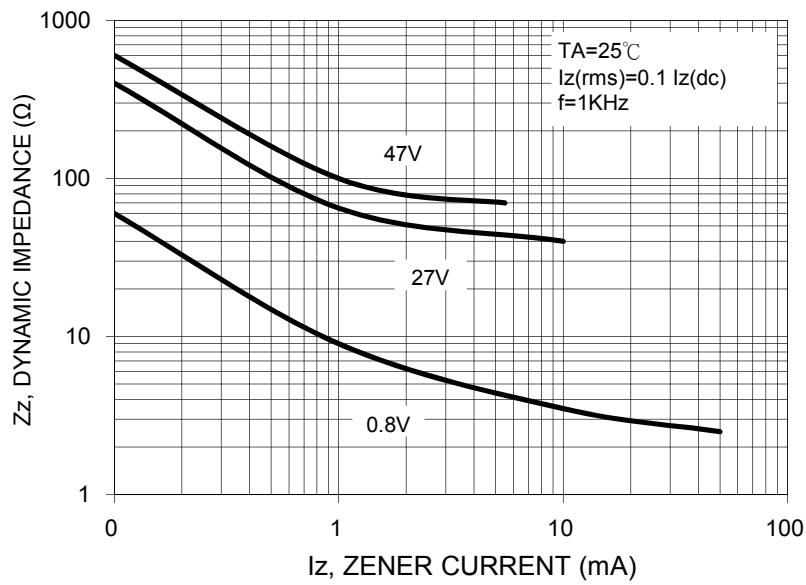


FIG.5 TYPICAL LEAKAGE CURRENT

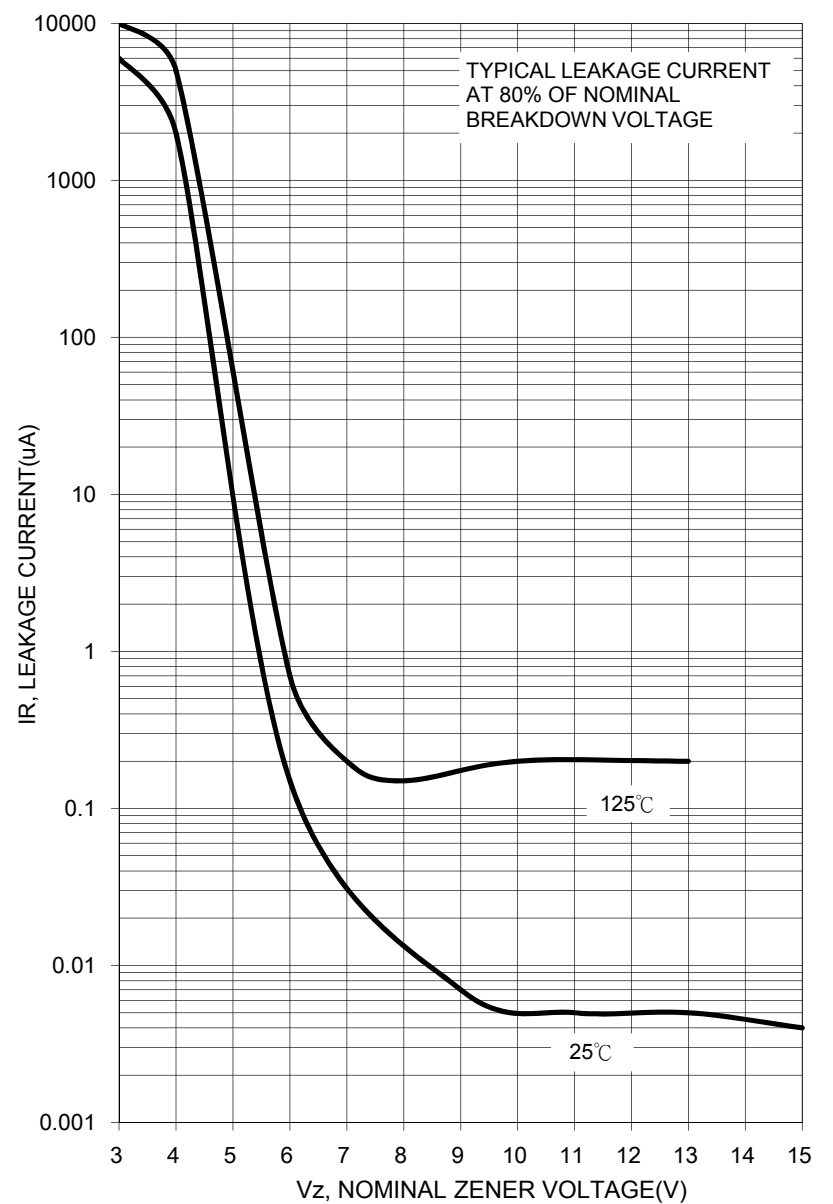
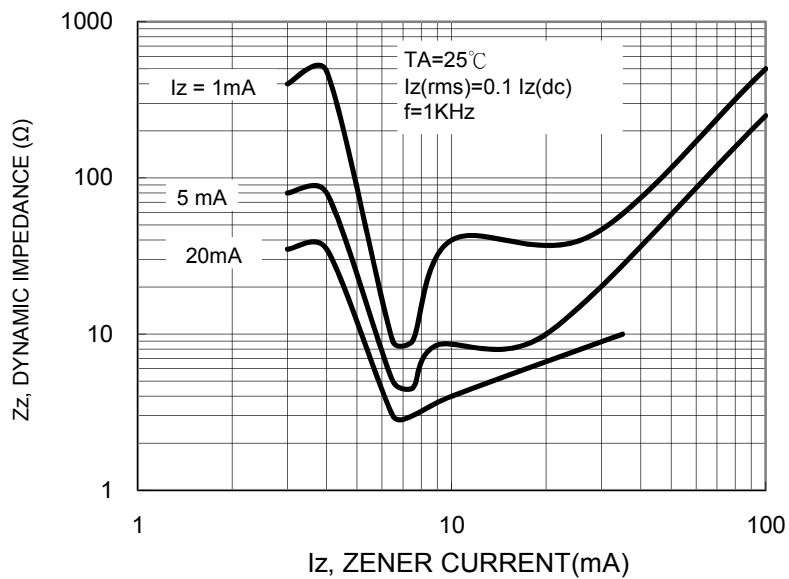


FIG.4 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE



RATINGS AND CHARACTERISTIC CURVES (1N4740A THRU 1M200Z)

FIG.6 TYPICAL CAPACITANCE versus Vz

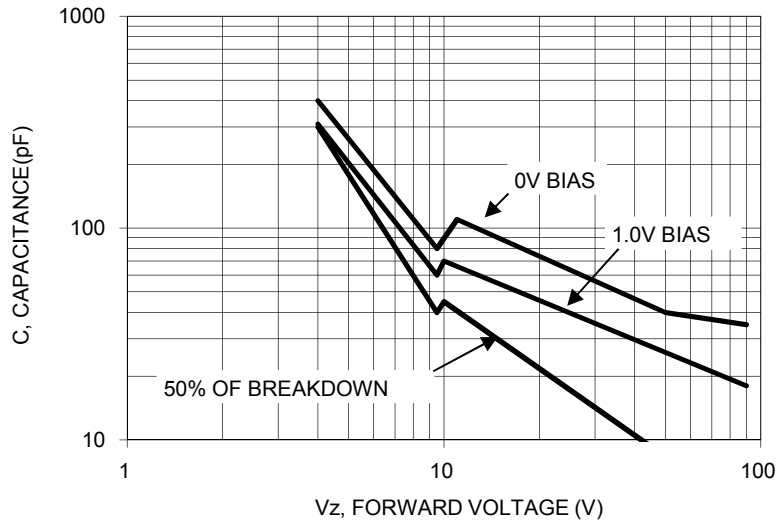


FIG. 7 TEMPERATURE COEFFICIENTS

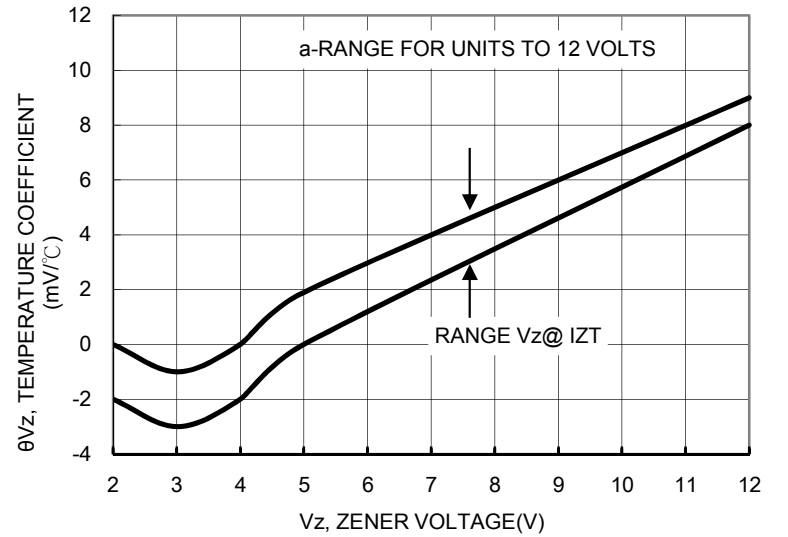


FIG.8 TEMPERATURE COEFFICIENTS

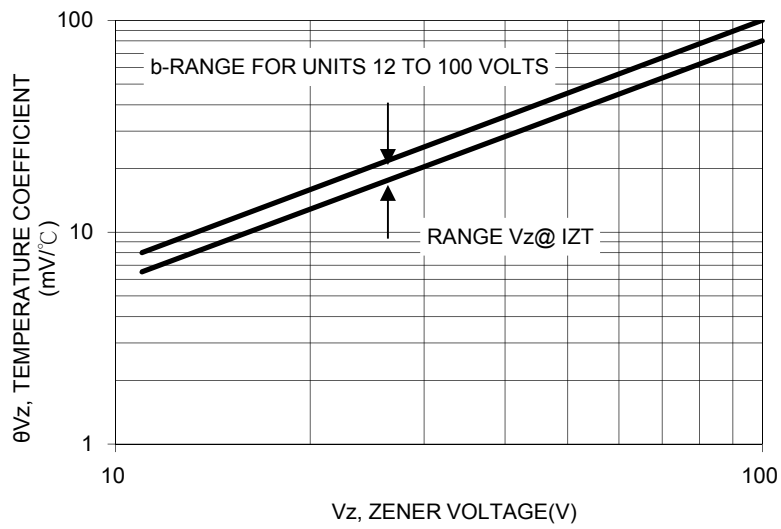


FIG. 9 EFFECT OF ZENER CURRENT

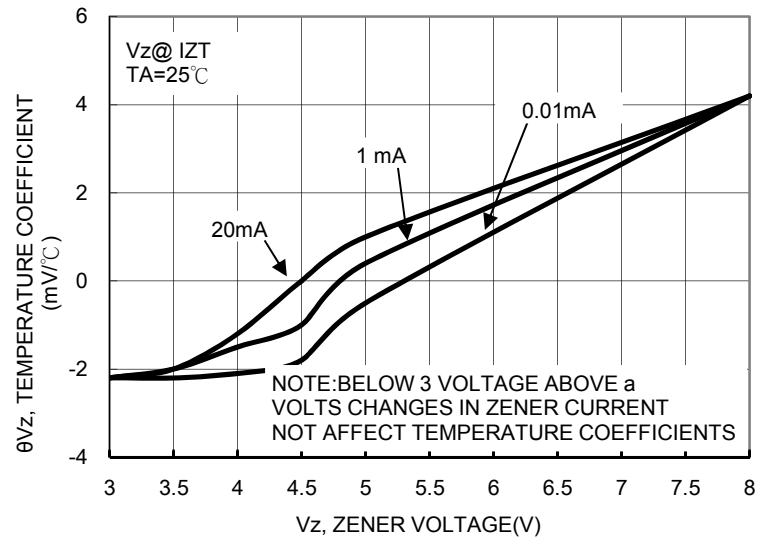
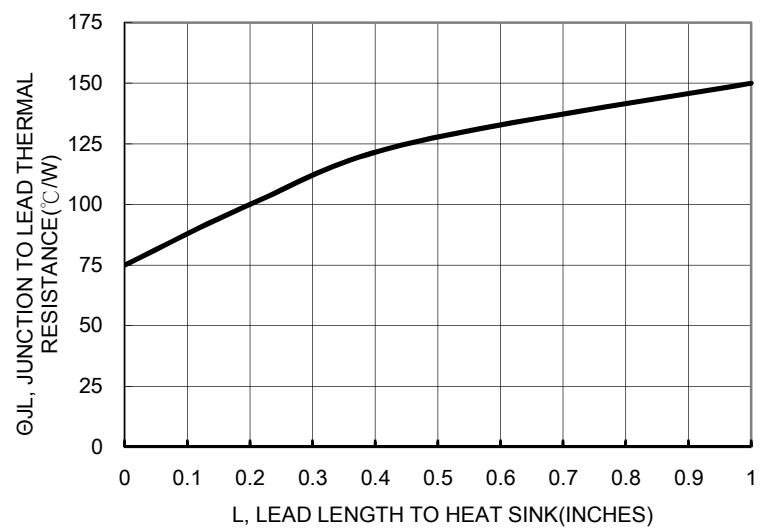
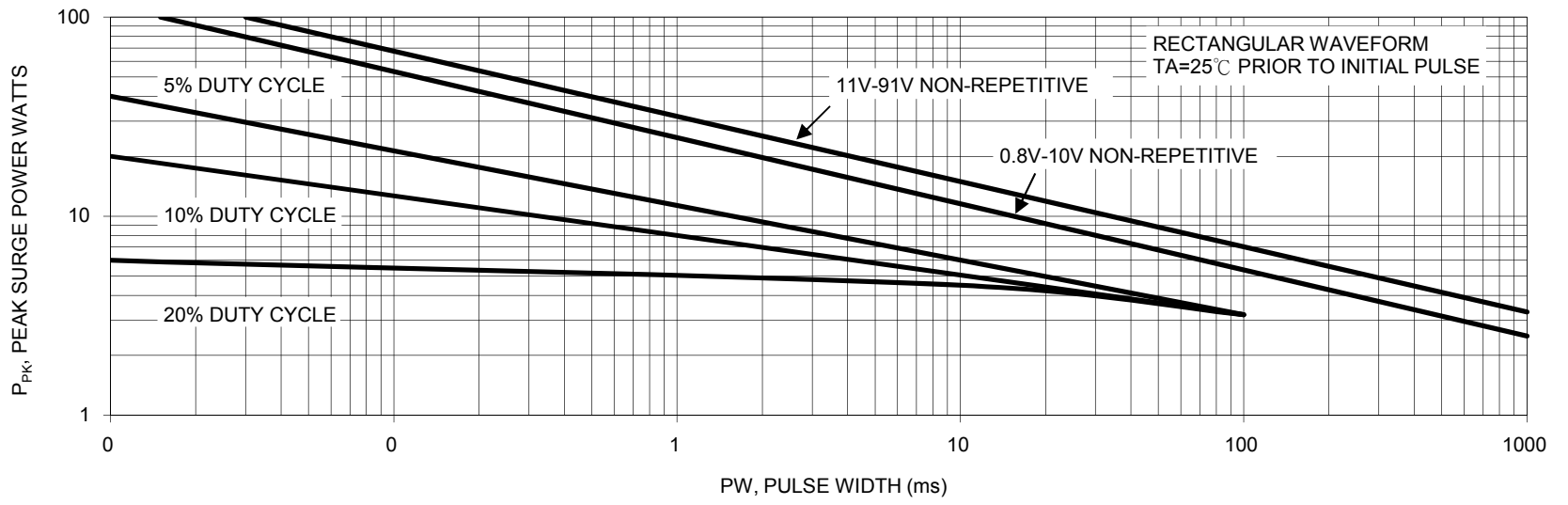


FIG. 10 TYPICAL THERMAL RESISTANCE versus LEAD LENGTH



RATINGS AND CHARACTERISTIC CURVES (1N4740A THRU 1M200Z)

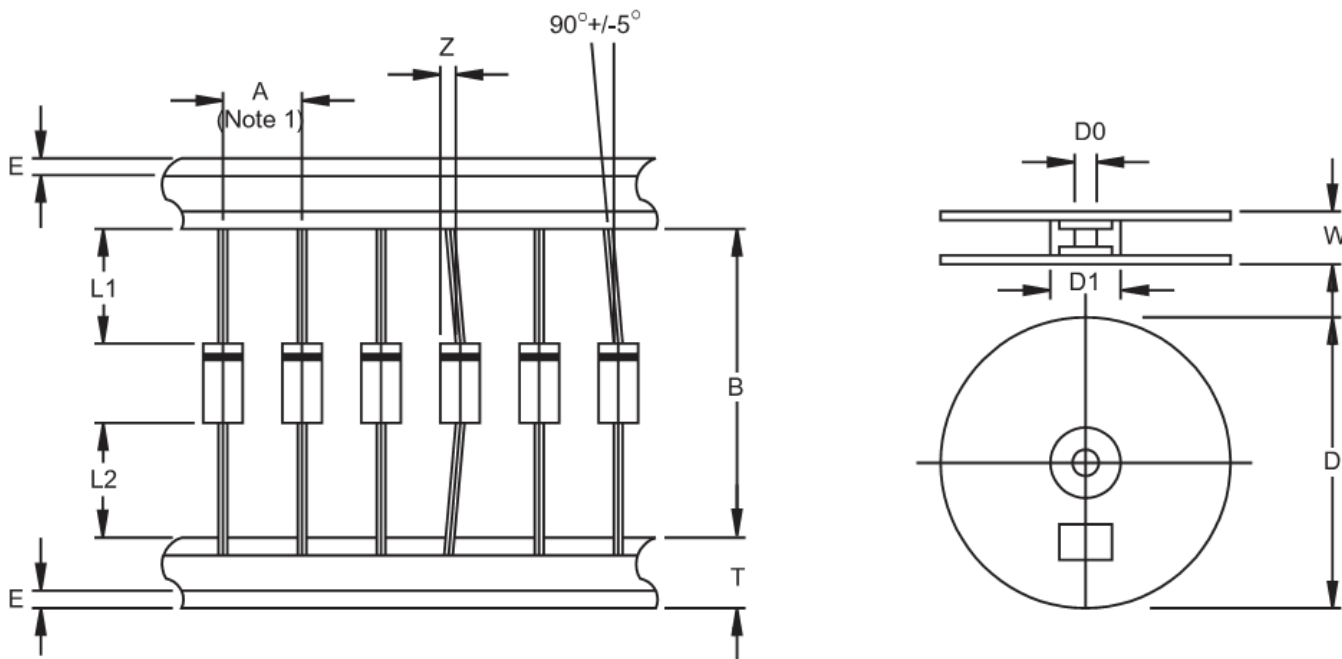
FIG.11 MAXIMUM SURGE POWER



Ordering information

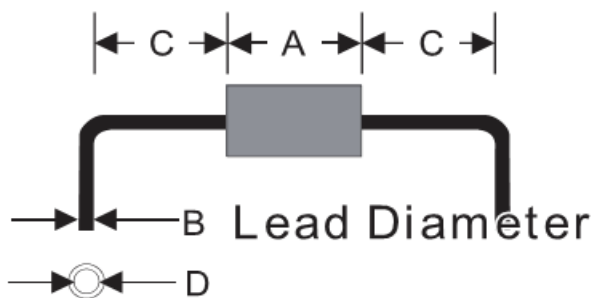
| Part No. | Package | Packing | INNER TAPE | Packing code | Packing code (Green) |
|-----------------------------|---------|-------------------|------------|--------------|----------------------|
| 1N46xxA 1MxxxZ (Note) | DO-41 | 3K / AMMO box | 52mm | A0 | A0G |
| | DO-41 | 3K / AMMO box | 26mm | A1 | A1G |
| | DO-41 | 5K / 13" Reel | 52mm | R0 | R0G |
| | DO-41 | 5K / 13" Reel | 52mm | R1 | R1G |
| | DO-41 | 1K / Bulk packing | | B0 | B0G |

Note: "xx" is Device Code from 1N47"40"A thru "94"A, 1M"110"Z thru "200"Z

AXIAL LEAD TAPING SPECIFICATIONS


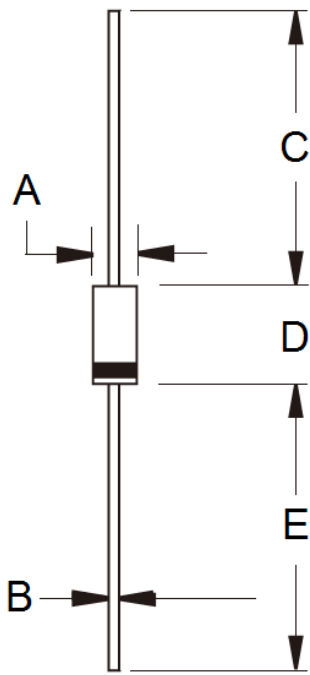
| Outline | A | B | Z | T | E | L1-L2 | D | D1 | D0 | W |
|---------|---|------|------|-----|------|-------|-----|------|------|------|
| | | ±0.5 | ±1.5 | MAX | ±0.4 | MAX | MAX | | ±0.3 | ±0.4 |
| DO-41 | 5 | 26 | 1.2 | 6 | 0.8 | 1 | 330 | 85.7 | 16.6 | 76 |
| DO-41 | 5 | 52.4 | 1.2 | 6 | 0.8 | 1 | 330 | 85.7 | 16.6 | 76 |

Unit (mm)

Suggested Mounting Hole Rule


| Symbol | Unit(mm) |
|--------|----------|
| A | 5.1 |
| B | 0.8 |
| C | 3.0 |
| D | 1.2 |

Dimensions



| DIM. | Unit(mm) | | Unit(inch) | |
|------|----------|------|------------|-------|
| | Min | Max | Min | Max |
| A | 2.00 | 2.70 | 0.079 | 0.106 |
| B | 0.71 | 0.86 | 0.028 | 0.034 |
| C | 25.40 | - | 1.000 | - |
| D | 4.20 | 5.20 | 0.165 | 0.205 |
| E | 25.40 | - | 1.000 | - |

Marking Diagram



P/N = Specific Device Code
G = Green Compound
YWW = Date Code