



1N5817 THRU 1N5819

VOLTAGE RANGE

20 to 40 Volts

CURRENT

1.0 Ampere

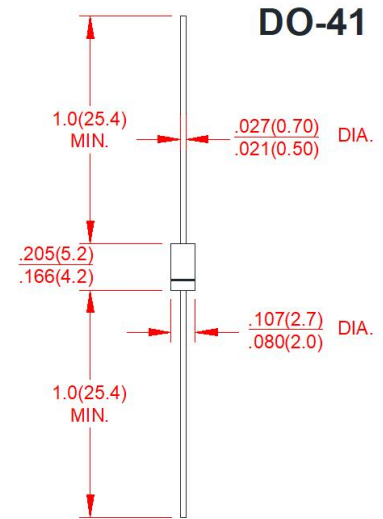
Features



- Fast switching
- Low forward voltage
- Low power loss for high efficiency
- High surge capability
- High temperature soldering guaranteed
250°C/10 seconds, 0.375" (9.5mm) lead length

Mechanical Data

- Case: Transfer molded plastic
- Epoxy: UL94V-0 rate flame retardant
- Lead: Plated axial lead, solderable per MIL-STD-202E method 208C
- Polarity :Color band denoted cathode end
- Mounting position: Any
- Weight: 0.012ounce, 0.33 grams



Dimensions in inches and (millimeters)

Maximum Ratings and Electrical Characteristics

- Ratings at 25°C ambient temperature unless otherwise specified
- Single Phase, half wave, 60Hz, resistive or inductive load
- For capacitive load derate current by 20%

| TYPE NUMBER | SYMBOLS | 1N5817 | 1N5818 | 1N5819 | UNITS |
|--|---------------------------|-------------|--------|--------|---------------------------|
| Maximum Repetitive Peak Reverse Voltage | V_{RRM} | 20 | 30 | 40 | Volts |
| Maximum RMS Voltage | V_{RMS} | 14 | 21 | 28 | Volts |
| Maximum DC Blocking Voltage | V_{DC} | 20 | 30 | 40 | Volts |
| Maximum Average Forward Rectified Current (FIG.1) 0.375" (9.5mm) lead length at $T_A=100^\circ\text{C}$ | $I_{(AV)}$ | 1.0 | | | Amp |
| Peak Forward Surge Current 8.3ms single half sine wave superimposed on rated load (JEDEC method) | I_{FSM} | 30 | | | Amps |
| Maximum Instantaneous Forward Voltage at 1.0A | V_F | 0.50 | 0.55 | | Volts |
| Maximum DC Reverse Current at Rated DC Blocking Voltage at | $T_A = 25^\circ\text{C}$ | 0.1 | | | mA |
| | $T_A = 125^\circ\text{C}$ | 20 | | | |
| Maximum Full Load Reverse Current, full cycle Average 0.375" (9.5mm) lead length at $T_l=75^\circ\text{C}$ | $I_{R(AV)}$ | 30 | | | μA |
| Typical Junction Capacitance ^(NOTE 1) | C_j | 60 | | | pF |
| Typical Thermal Resistance ^(NOTE 2) | $R_{\theta JA}$ | 50 | | | $^\circ\text{C}/\text{W}$ |
| Operating and Storage Temperature Range | T_j, T_{STG} | -55 to +150 | | | $^\circ\text{C}$ |

Notes:

1. Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.
2. Thermal Resistance HERom Junction to Ambient at .375" (9.5mm) lead length, P.C. board mounted.

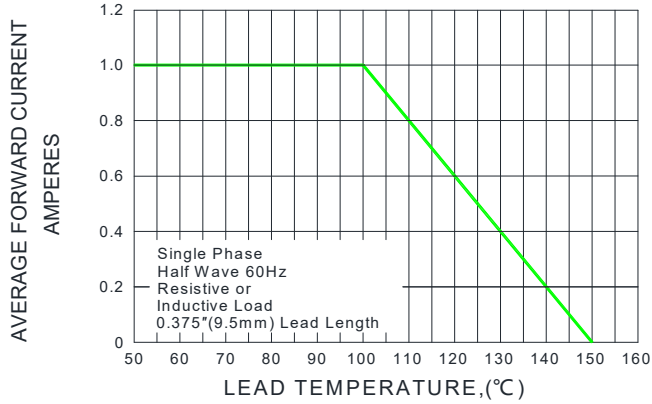


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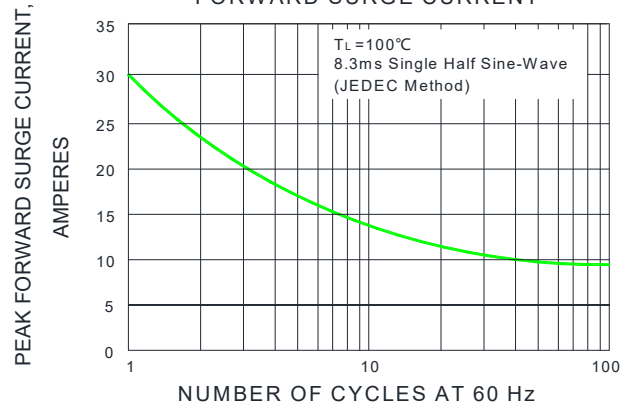
| | |
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| CURRENT | 1.0 Ampere |

Ratings and Characteristic Curves ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

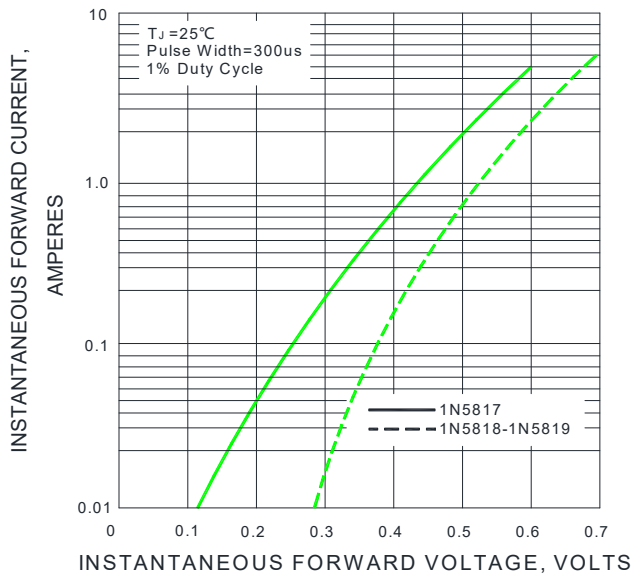
F1G.1-FORWARD CURRENT DERATING CURVE



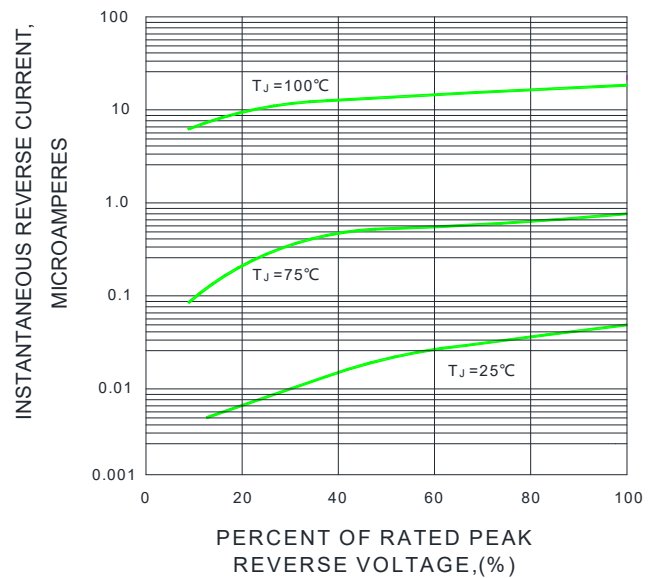
F1G.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



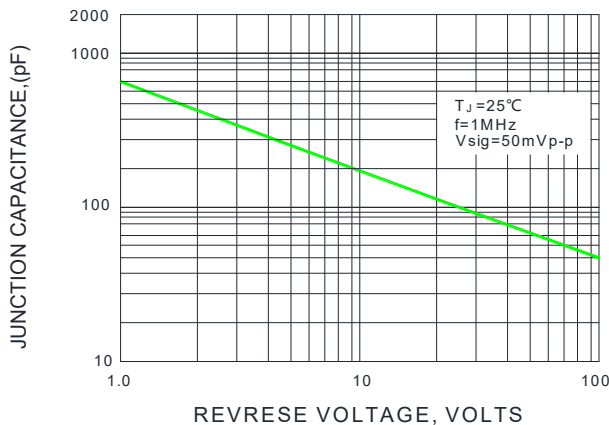
F1G.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



F1G.4-TYPICAL REVERSE CHARACTERISTICS

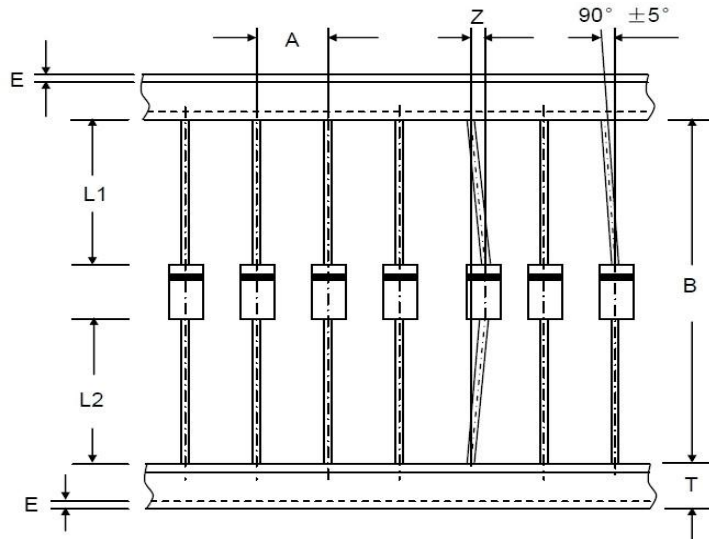


F1G.5-TYPICAL JUNCTION CAPACITANCE





Axial Lead Taping Specifications for Rectifiers

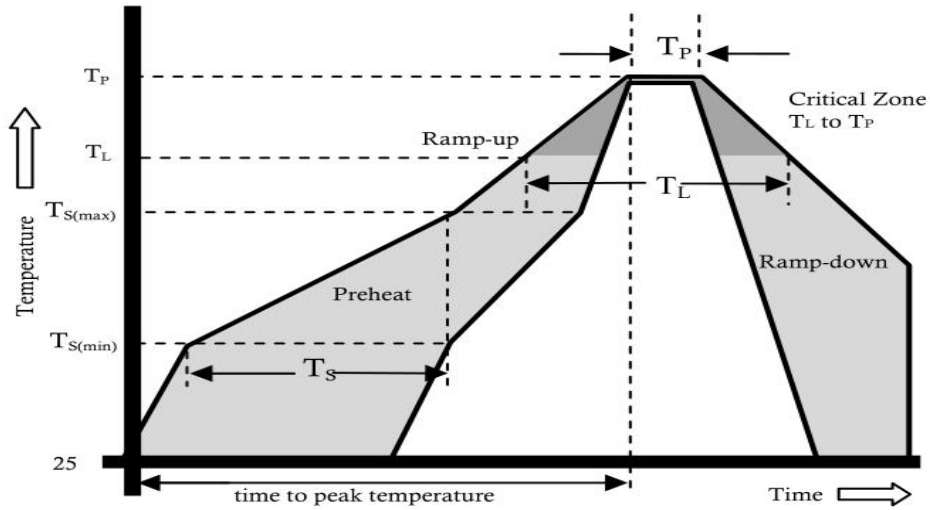


| Component Outline | Component Pitch A | Inner Tape Pitch B | | Cumulative Tolerance |
|-------------------|-------------------|--------------------|--------|----------------------|
| | ±0.5mm | +0.5mm | -0.4mm | |
| DO-204AL(DO-41) | 5.0mm | 52.4mm | 26.0mm | 2.0mm/20pitch |

| Item | Symbol | Specifications(mm) | Specifications(inch) |
|---------------------|---------|--------------------|----------------------|
| Component alignment | Z | 1.2 max | 0.048 max |
| Tape width | T | 6.0±0.4 | 0.236±0.016 |
| Exposed adhesive | E | 0.8 max | 0.032 max |
| Body eccentricity | IL1-L2I | 1.0 max | 0.040 max |



Reflow Profile



| Reflow Condition | | Pb-Free Assembly |
|--|---------------------------------|------------------|
| Pre Heat | Temperature Min. | +150°C |
| | Temperature Max. | +200°C |
| | Time(Min to Max) | 60-180 secs. |
| Average ramp up rate(Liquidus Temp(T_L) to peak) | | 3°C/sec. Max. |
| $T_S(max)$ to T_L - Ramp-up Rate | | 3°C/sec. Max. |
| Reflow | Temperature (T_L)(Liquidus) | +217°C |
| | Temperature (T_L) | 60-150 secs. |
| Peak Temp (T_P) | | +(260+0/-5)°C |
| Time within 5°C of actual Peak Temp (T_P) | | 25 secs. |
| Ramp-down Rate | | 6°C/sec. Max. |
| Time 25°C to peak Temp (T_P) | | 8 min. Max. |
| Do not exceed | | +260°C |



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