



# 1N4001S~1N4007S

## PLASTIC SILICON RECTIFIERS

**VOLTAGE** 50 to 1000 Volts **CURRENT** 1.0 Amperes

**A-405**

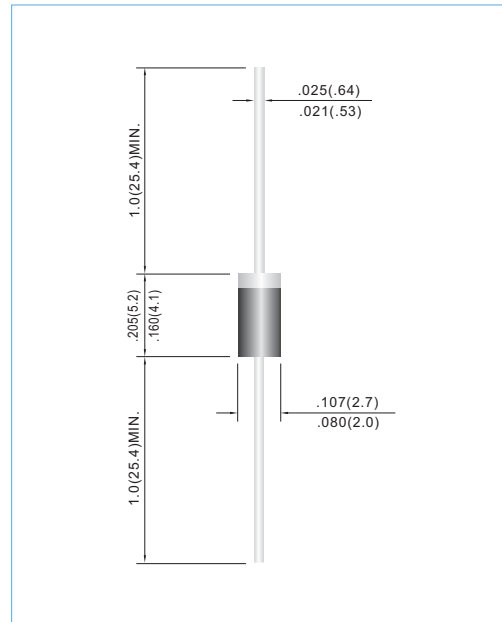
Unit: inch(mm)

### FEATURES

- Low forward voltage drop
- High current capability
- High reliability
- High surge current capability
- Exceeds environmental standards of MIL-S-19500/228
- In compliance with EU RoHS 2002/95/EC directives

### MECHANICAL DATA

- Case: A-405 Molded plastic
- Epoxy: UL 94V-O rate flame retardant.
- Lead: Axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.008 ounces, 0.22 gram



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

| PARAMETER   | SYMBOL  | 1N4001S        | 1N4002S | 1N4003S | 1N4004S | 1N4005S | 1N4006S | 1N4007S | UNITS                       |
|---|---|----------------|---------|---------|---------|---------|---------|---------|-----------------------------|
| Maximum Recurrent Peak Reverse Voltage  | $V_{RRM}$   | 50             | 100     | 200     | 400     | 600     | 800     | 1000    | V                           |
| Maximum RMS Voltage   | $V_{RMS}$   | 35             | 70      | 140     | 280     | 420     | 560     | 700     | V                           |
| Maximum DC Blocking Voltage   | $V_{DC}$  | 50             | 100     | 200     | 400     | 600     | 800     | 1000    | V                           |
| Maximum Average Forward Current .375"(9.5mm) lead length at $T_A=75^\circ\text{C}$                        | $I_{F(AV)}$   | 1.0            |         |         |         |         |         |         | A                           |
| Peak Forward Surge Current : 8.3ms single half sine-wave superimposed on rated load (JEDEC method)        | $I_{FSM}$   | 30             |         |         |         |         |         |         | A                           |
| Maximum Forward Voltage at 1.0A   | $V_F$   | 1.1            |         |         |         |         |         |         | V                           |
| Maximum DC Reverse Current at Rated DC Blocking Voltage $T_J=25^\circ\text{C}$<br>$T_J=100^\circ\text{C}$ | $I_R$   | 5.0<br>500     |         |         |         |         |         |         | $\mu\text{A}$               |
| Typical Junction capacitance (Note 1)   | $C_J$   | 15             |         |         |         |         |         |         | pF                          |
| Typical Thermal Resistance (Note 2)   | $R_{\theta JA}$<br>$R_{\theta JC}$<br>$R_{\theta JL}$ | 50<br>25<br>17 |         |         |         |         |         |         | $^\circ\text{C} / \text{W}$ |
| Operating Junction and Storage Temperature Range  | $T_J, T_{STG}$  | -55 to +150    |         |         |         |         |         |         | $^\circ\text{C}$            |

### NOTES:

1. Measured at 1 MHz and applied reverse voltage of 4.0 VDC.
2. Thermal Resistance from Junction to Ambient and from junction to lead at 0.375"(9.5mm)lead length P.C.B.mounted.



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## RATING AND CHARACTERISTIC CURVES

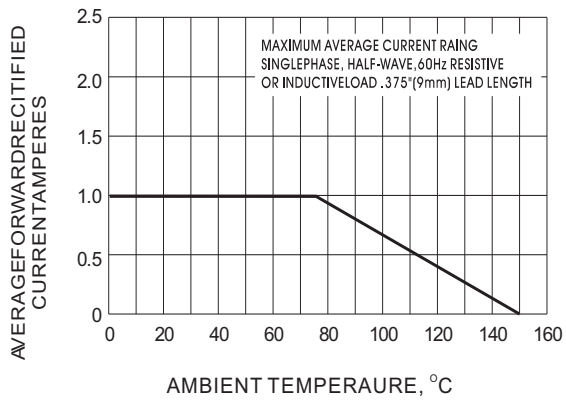


Fig.1-FORWARD CURRENT DERATING CURVE

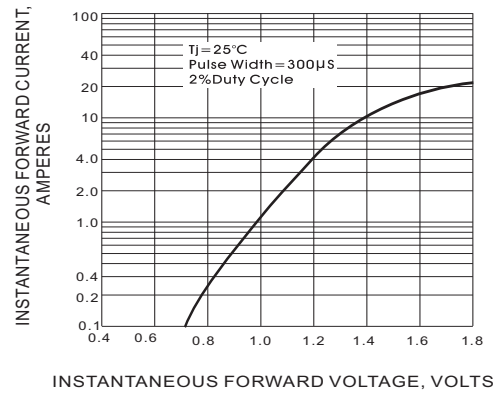


Fig.2-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

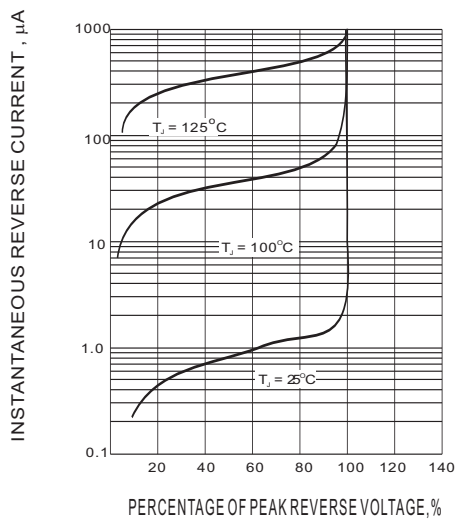


Fig.3-TYPICAL REVERSE CHARACTERISTIC

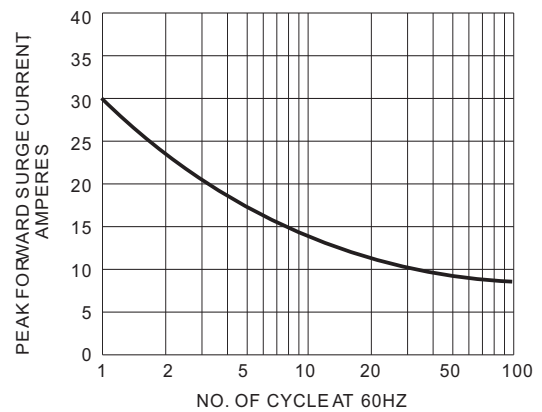


Fig.4-MAXIMUM NON-REPETITIVE SURGE CURRENT

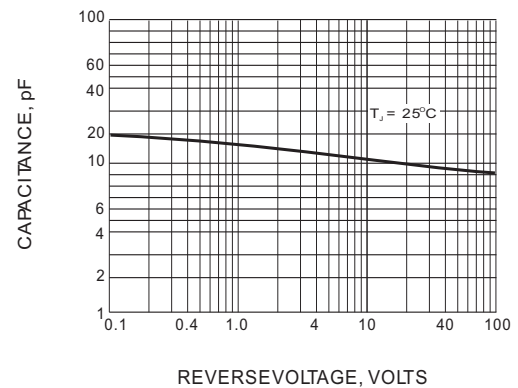


Fig.5-TYPICAL JUNCTION CAPACITANCE