

# 1N4001 - 1N4007

## SILICON RECTIFIER DIODES

**PRV : 50 - 1300 Volts**

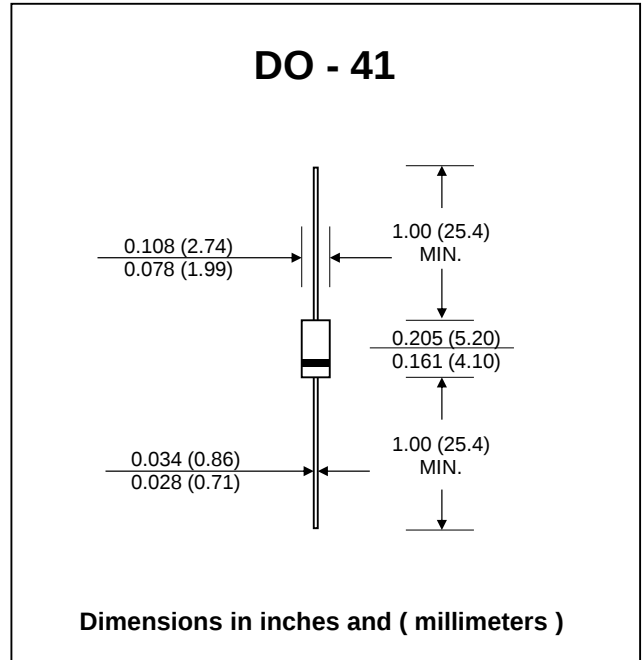
**Io : 1.0 Ampere**

### FEATURES :

- \* High current capability
- \* High surge current capability
- \* High reliability
- \* Low reverse current
- \* Low forward voltage drop
- \* **Pb / RoHS Free**

### MECHANICAL DATA :

- \* Case : DO-41 Molded plastic
- \* Epoxy : UL94V-O rate flame retardant
- \* Lead : Axial lead solderable per MIL-STD-202, Method 208 guaranteed
- \* Polarity : Color band denotes cathode end
- \* Mounting position : Any
- \* Weight : 0.335 gram



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

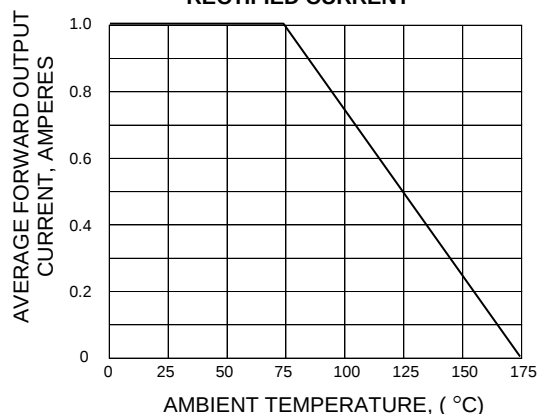
Rating at 25 °C ambient temperature unless otherwise specified.  
Single phase, half wave, 60 Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

| RATING                                                                                                                            | SYMBOL          | 1N4001        | 1N4002 | 1N4003 | 1N4004 | 1N4005 | 1N4006 | 1N4007 | UNIT                 |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------|--------|--------|--------|--------|--------|--------|----------------------|
| Maximum Repetitive 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<br>0.375"(9.5mm) Lead Length $T_a = 75\text{ }^{\circ}\text{C}$                                   | $I_{F(AV)}$     | 1.0           |        |        |        |        |        |        | A                    |
| Maximum Peak Forward Surge Current<br>8.3ms Single half sine wave Superimposed<br>on rated load (JEDEC Method)                    | $I_{FSM}$       | 30            |        |        |        |        |        |        | A                    |
| Maximum Forward Voltage at $I_F = 1.0\text{ Amp.}$                                                                                | $V_F$           | 1.1           |        |        |        |        |        |        | V                    |
| Maximum DC Reverse Current $T_a = 25\text{ }^{\circ}\text{C}$<br>at rated DC Blocking Voltage $T_a = 100\text{ }^{\circ}\text{C}$ | $I_R$           | 5.0           |        |        |        |        |        |        | $\mu\text{A}$        |
|                                                                                                                                   | $I_{R(H)}$      | 50            |        |        |        |        |        |        | $\mu\text{A}$        |
| Typical Reverse Recovery Time<br>( $I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$ .)                      | $T_{rr}$        | 2.0           |        |        |        |        |        |        | $\mu\text{s}$        |
| Typical Junction Capacitance (Note1)                                                                                              | $C_J$           | 15            |        |        |        |        |        |        | pF                   |
| Typical Thermal Resistance (Note2)                                                                                                | $R_{\theta JA}$ | 26            |        |        |        |        |        |        | $^{\circ}\text{C/W}$ |
| Junction Temperature Range                                                                                                        | $T_J$           | - 65 to + 175 |        |        |        |        |        |        | $^{\circ}\text{C}$   |
| Storage Temperature Range                                                                                                         | $T_{STG}$       | - 65 to + 175 |        |        |        |        |        |        | $^{\circ}\text{C}$   |

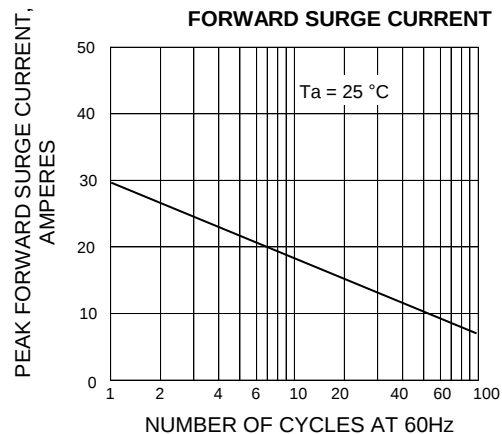
**Notes :** (1) Measured at 1.0 MHz and applied reverse voltage of 4.0VDC  
(2) Thermal resistance from Junction to Ambient at 0.375" (9.5mm) Lead Lengths, P.C. Board Mounted.

## RATING AND CHARACTERISTIC CURVES ( 1N4001 - 1N4007 )

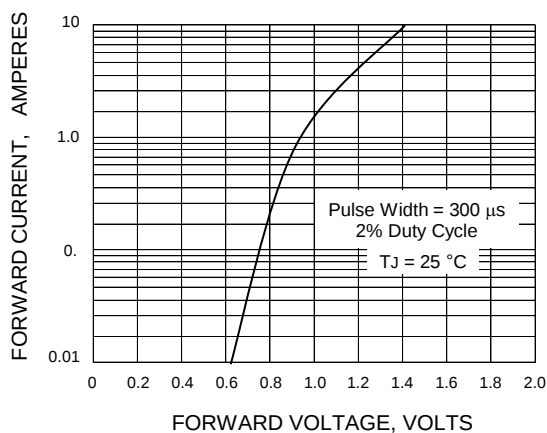
**FIG.1 - DERATING CURVE FOR OUTPUT RECTIFIED CURRENT**



**FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



**FIG.3 - TYPICAL FORWARD CHARACTERISTICS**



**FIG.4 - TYPICAL REVERSE CHARACTERISTICS**

