

# 1N4001 - 1N4007, BY133

1.0 AMP. Silicon Rectifiers

**DO-41**

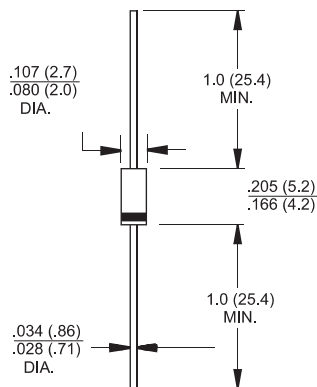


## Features

- ✧ High efficiency, Low VF
- ✧ High current capability
- ✧ High reliability
- ✧ High surge current capability
- ✧ Low power loss

## Mechanical Data

- ✧ Cases: Molded plastic
- ✧ Epoxy: UL 94V-0 rate flame retardant
- ✧ Lead: Pure tin plated, lead free., solderable per MIL-STD-202, Method 208 guaranteed
- ✧ Polarity: Color band denotes cathode end
- ✧ High temperature soldering guaranteed: 260 °C /10 seconds/.375", (9.5mm) lead lengths at 5 lbs., (2.3kg) tension
- ✧ Weight: 0.35 gram



Dimensions in inches and (millimeters)

## Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

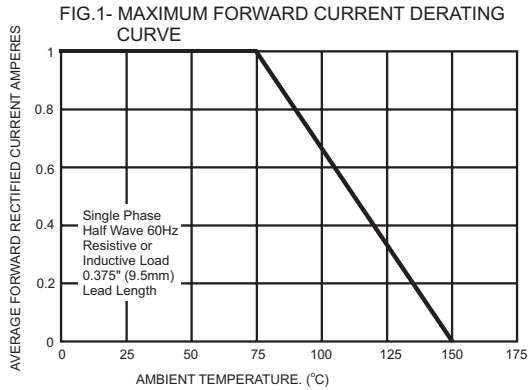
Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

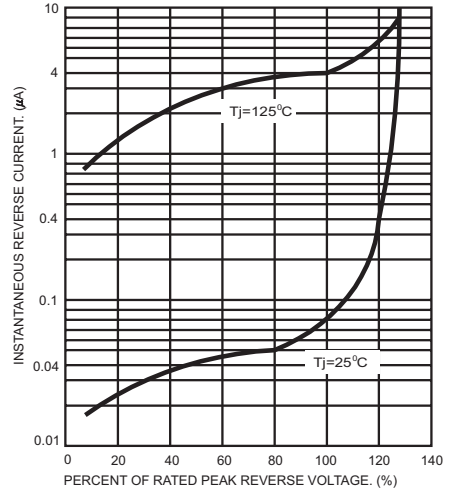
| Type Number   | Symbol          | 1N4001      | 1N4002 | 1N4003 | 1N4004 | 1N4005 | 1N4006 | 1N4007 | BY133 | Units |
|---|-----------------|-------------|--------|--------|--------|--------|--------|--------|-------|-------|
| Maximum Recurrent Peak Reverse Voltage  | $V_{RRM}$       | 50          | 100    | 200    | 400    | 600    | 800    | 1000   | 1300  | V     |
| Maximum RMS Voltage   | $V_{RMS}$       | 35          | 70     | 140    | 280    | 420    | 560    | 700    | 910   | V     |
| Maximum DC Blocking Voltage   | $V_{DC}$        | 50          | 100    | 200    | 400    | 600    | 800    | 1000   | 1300  | V     |
| Maximum Average Forward Rectified Current .375"(9.5mm) Lead Length @ $T_A = 75^\circ C$             | $I_{(AV)}$      | 1.0         |        |        |        |        |        |        |       | A     |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method ) | $I_{FSM}$       | 30          |        |        |        |        |        |        |       | A     |
| Maximum Instantaneous Forward Voltage @1.0A   | $V_F$           | 1.0         |        |        |        |        |        |        |       | V     |
| Maximum DC Reverse Current @ $T_A=25^\circ C$ at Rated DC Blocking Voltage @ $T_A=125^\circ C$      | $I_R$           |             |        |        |        | 5.0    |        |        |       | uA    |
|   |                 |             |        |        |        | 50     |        |        |       | uA    |
| Maximum Full Load Reverse Current ,Full Cycle Average .375"(9.5mm) Lead Length @ $T_A=75^\circ C$   | $HT_{IR}$       | 30          |        |        |        |        |        |        |       | uA    |
| Typical Junction Capacitance ( Note 1 )   | $C_j$           | 10          |        |        |        |        |        |        |       | pF    |
| Typical Thermal Resistance ( Note 2 )   | $R_{\theta JA}$ | 65          |        |        |        |        |        |        |       | °C/W  |
| Operating and Storage Temperature Range   | $T_J, T_{STG}$  | -65 to +150 |        |        |        |        |        |        |       | °C    |

- Notes:
1. Measured at 1 MHz and Applied Reverse Voltage of 4.0 Volts D.C.
  2. Mount on Cu-Pad Size 5mm x 5mm on P.C.B.

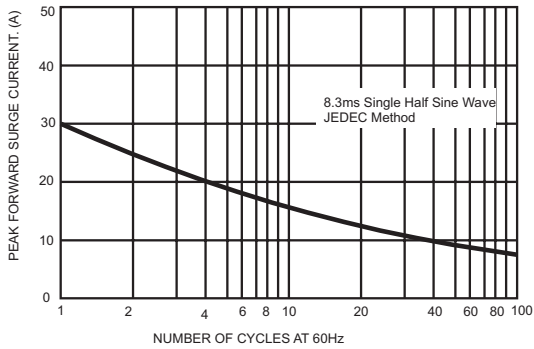
## RATINGS AND CHARACTERISTIC CURVES (1N4001 THRU 1N4007/BY133)



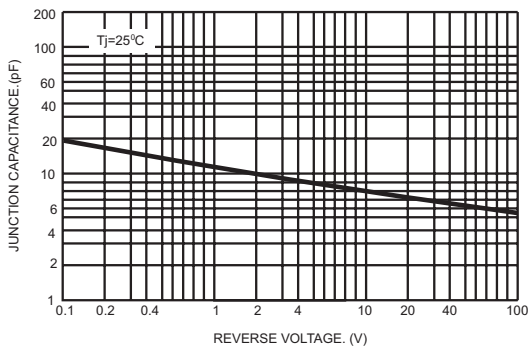
**FIG.2- TYPICAL REVERSE CHARACTERISTICS**



**FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**



**FIG.4- TYPICAL JUNCTION CAPACITANCE**



**FIG.5- TYPICAL FORWARD CHARACTERISTICS**

