FAIRCHILD SEMICONDUCTOR TM

*Discrete POWER & Signal Technologies*

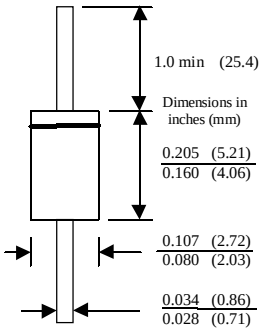
# 1N4001 - 1N4007

### Features

- Low forward voltage drop.
- High surge current capability.

**DO-41**

COLOR BAND DENOTES CATHODE




## 1.0 Ampere General Purpose Rectifiers

### Absolute Maximum Ratings*

$T_A$ = 25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $I_O$ | Average Rectified Current<br>.375 " lead length @ $T_A$ = 75°C | 1.0 | A |
| $i_{f(surge)}$ | Peak Forward Surge Current<br>8.3 ms single half-sine-wave<br>Superimposed on rated load (JEDEC method) | 30 | A |
| $P_D$ | Total Device Dissipation<br>Derate above 25°C | 2.5<br>20 | W<br>mW/°C |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 50 | °C/W |
| $T_{stg}$ | Storage Temperature Range | -55 to +175 | °C |
| $T_J$ | Operating Junction Temperature | -55 to +150 | °C |

*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

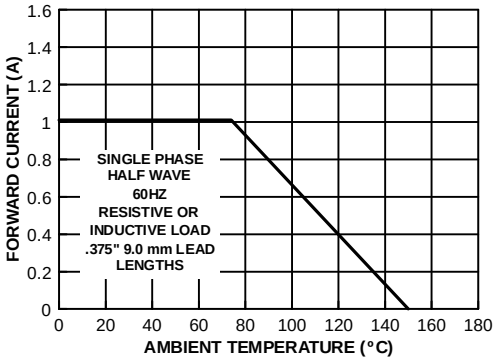
### Electrical Characteristics

$T_A$ = 25°C unless otherwise noted

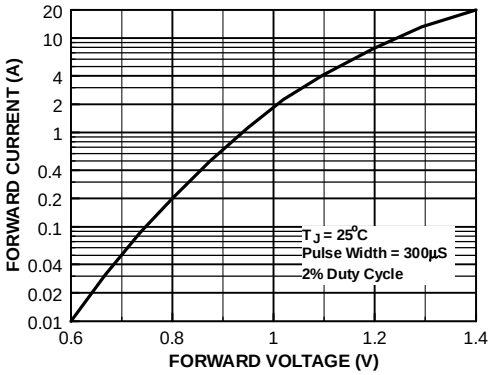
| Parameter | Device | | | | | | | Units |
|---|---|---|---|---|---|---|---|---|
| | 4001 | 4002 | 4003 | 4004 | 4005 | 4006 | 4007 | |
| Peak Repetitive Reverse Voltage | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS Voltage | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| DC Reverse Voltage (Rated $V_R$) | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum Reverse Current<br>@ rated $V_R$ $T_A$ = 25°C<br>$T_A$ = 100°C | 5.0<br>500 | | | | | | | µA<br>µA |
| Maximum Forward Voltage @ 1.0 A | 1.1 | | | | | | | V |
| Maximum Full Load Reverse Current, Full Cycle $T_A$ = 75°C | 30 | | | | | | | µA |
| Typical Junction Capacitance<br>$V_R$ = 4.0 V, f = 1.0 MHz | 15 | | | | | | | pF |

## Typical Characteristics

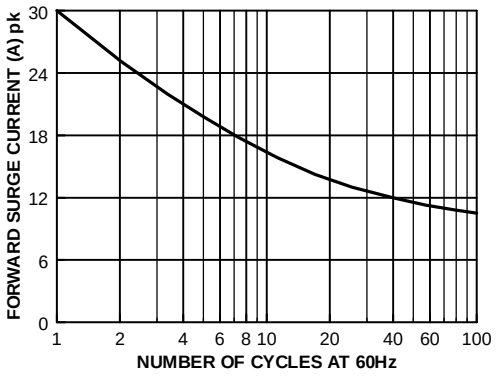
### Forward Current Derating Curve




### Forward Characteristics




### Non-Repetitive Surge Current




### Reverse Characteristics