FAIRCHILD SEMICONDUCTOR™

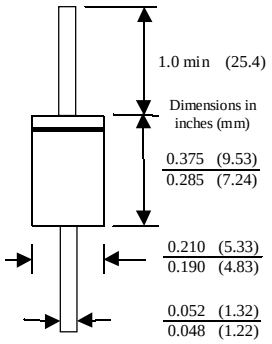
*Discrete POWER & Signal Technologies*

# 1N5400 - 1N5408

### Features

- 3.0 ampere operation at $T_A$ = 75°C with no thermal runaway.
- High current capability.
- Low leakage.

**DO-201AD**
COLOR BAND DENOTES CATHODE




## 3.0 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 | 3.0 | A |
| $i_{f(surge)}$ | Peak Forward Surge Current<br>8.3 ms single half-sine-wave<br>Superimposed on rated load (JEDEC method) | 200 | A |
| $P_D$ | Total Device Dissipation<br>Derate above 25°C | 6.25<br>50 | W<br>mW/°C |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 20 | °C/W |
| $T_{stg}$ | Storage Temperature Range | -55 to +150 | °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.

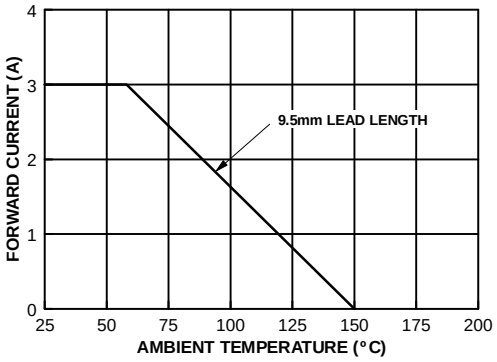
### Electrical Characteristics

$T_A$ = 25°C unless otherwise noted

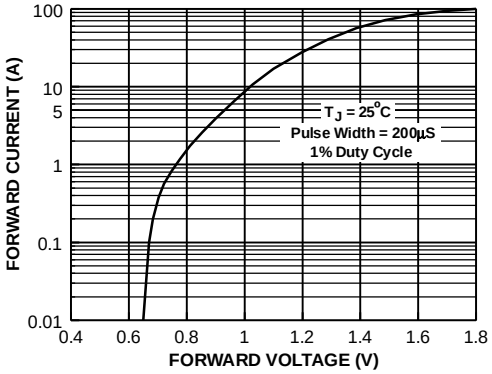
| Parameter | Device | | | | | | | | | Units |
|---|---|---|---|---|---|---|---|---|---|---|
| | 5400 | 5401 | 5402 | 5403 | 5404 | 5405 | 5406 | 5407 | 5408 | |
| Peak Repetitive Reverse Voltage | 50 | 100 | 200 | 300 | 400 | 500 | 600 | 800 | 1000 | V |
| Maximum RMS Voltage | 35 | 70 | 140 | 210 | 280 | 350 | 420 | 560 | 700 | V |
| DC Reverse Voltage (Rated $V_R$) | 50 | 100 | 200 | 300 | 400 | 500 | 600 | 800 | 1000 | V |
| Maximum Reverse Current<br>@ rated $V_R$ $T_A$ = 25°C<br>$T_A$ = 100°C | 5.0<br>500 | | | | | | | | | <br>µA<br>µA |
| Maximum Forward Voltage @ 3.0 A | 1.2 | | | | | | | | | V |
| Maximum Full Load Reverse Current, Full Cycle $T_A$ = 105°C | 0.5 | | | | | | | | | mA |
| Typical Junction Capacitance<br>$V_R$ = 4.0 V, f = 1.0 MHz | 30 | | | | | | | | | pF |

## Typical Characteristics

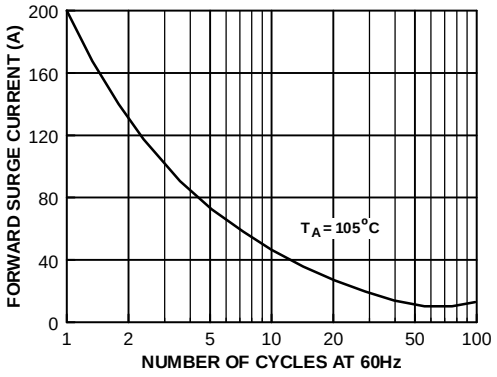
### Forward Current Derating Curve



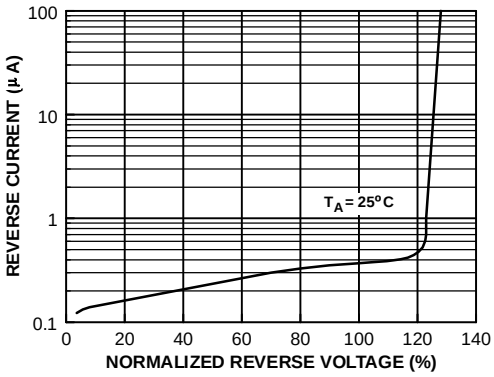

### Forward Characteristics




### Overload Surge Current




### Reverse Characteristics




### Junction Capacitance