



November 2014

# 1N4001 - 1N4007 General-Purpose Rectifiers

## Features

- Low Forward Voltage Drop
- High Surge Current Capability



**DO-41**  
COLOR BAND DENOTES CATHODE

## Ordering Information

Part Number	Top Mark	Package	Packing Method
1N4001	1N4001	DO-204AL (DO-41)	Tape and Reel
1N4002	1N4002	DO-204AL (DO-41)	Tape and Reel
1N4003	1N4003	DO-204AL (DO-41)	Tape and Reel
1N4004	1N4004	DO-204AL (DO-41)	Tape and Reel
1N4005	1N4005	DO-204AL (DO-41)	Tape and Reel
1N4006	1N4006	DO-204AL (DO-41)	Tape and Reel
1N4007	1N4007	DO-204AL (DO-41)	Tape and Reel

## Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Value							Unit
		1N 4001	1N 4002	1N 4003	1N 4004	1N 4005	1N 4006	1N 4007	
$V_{RRM}$	Peak Repetitive Reverse Voltage	50	100	200	400	600	800	1000	V
$I_{F(AV)}$	Average Rectified Forward Current .375 " Lead Length at $T_A = 75^\circ\text{C}$	1.0							A
$I_{FSM}$	Non-Repetitive Peak Forward Surge Current 8.3 ms Single Half-Sine-Wave	30							A
$I^2t$	Rating for Fusing ( $t < 8.3$ ms)	3.7							$\text{A}^2\text{sec}$
$T_{STG}$	Storage Temperature Range	-55 to +175							$^\circ\text{C}$
$T_J$	Operating Junction Temperature	-55 to +175							$^\circ\text{C}$

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## Thermal Characteristics

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Value	Unit
$P_D$	Power Dissipation	3.0	W
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	50	$^\circ\text{C/W}$

## Electrical Characteristics

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Conditions	Value	Unit
$V_F$	Forward Voltage	$I_F = 1.0\text{ A}$	1.1	V
$I_{rr}$	Maximum Full Load Reverse Current, Full Cycle	$T_A = 75^\circ\text{C}$	30	$\mu\text{A}$
$I_R$	Reverse Current at Rated $V_R$	$T_A = 25^\circ\text{C}$	5.0	$\mu\text{A}$
		$T_A = 100^\circ\text{C}$	50	
$C_T$	Total Capacitance	$V_R = 4.0\text{ V}$ , $f = 1.0\text{ MHz}$	15	pF

### Typical Performance Characteristics



Figure 1. Forward Current Derating Curve

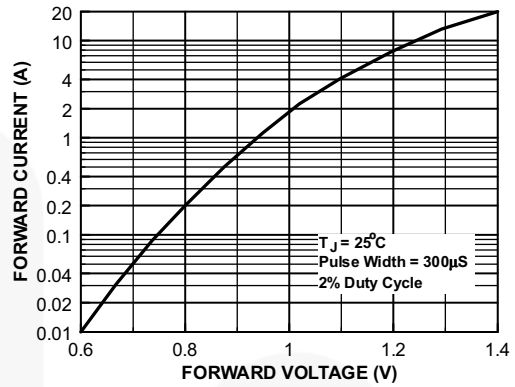


Figure 2. Forward Characteristics

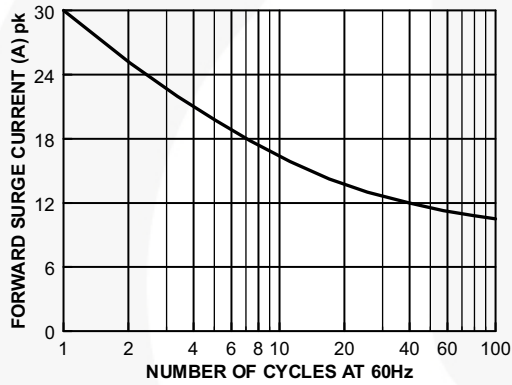


Figure 3. Non-Repetitive Surge Current

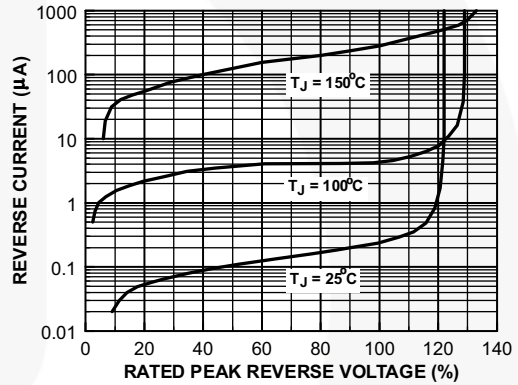







Figure 4. Reverse Characteristics





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| BitSiC™   | GreenBridge™                                   | PowerXS™  | TinyCalc™   |
| Build it Now™   | Green FPS™                                     | Programmable Active Droop™  | TinyLogic®  |
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| FAST®   | MTx®   | SuperSOT™-8   | XS™   |
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