

TYPES 1N4001 THRU 1N4007 SILICON RECTIFIERS

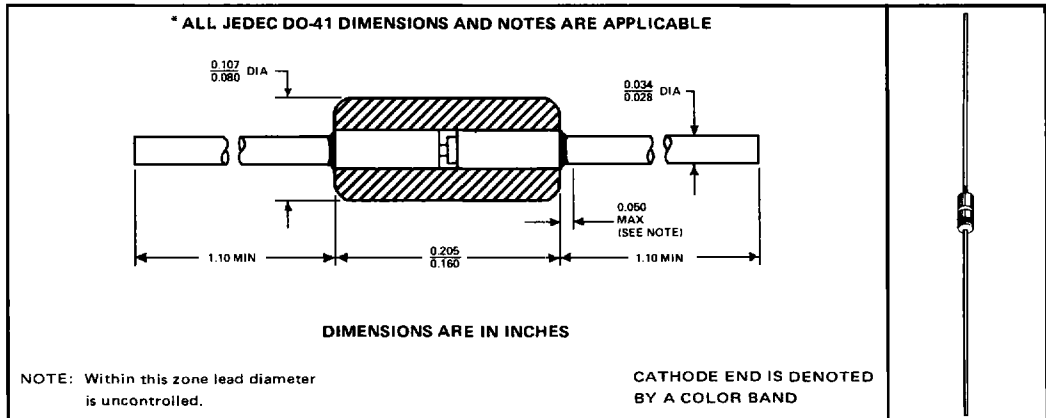
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50-1000 VOLTS • 1 AMP AVERAGE

- Rugged Double-plug Construction
- Hermetic Case
- 30-Amp Surge Rating

description and mechanical data

These one-amp rectifier diodes are the product of combining the best of both silicon material processing and packaging technologies. The silicon die is a mesa oxide-passivated structure which has additional nitride passivation and glass passivation over the junction. Years of volume production have shown the double-plug package to have the highest inherent mechanical integrity of all hermetic-case diodes.



*absolute maximum ratings at specified ambient[†] temperature (unless otherwise noted)

		1N4001	1N4002	1N4003	1N4004	1N4005	1N4006	1N4007	UNIT
V_{RM}	Peak Reverse Voltage from -65°C to 175°C (See Note 1)	50	100	200	400	600	800	1000	V
V_R	Steady State Reverse Voltage from 25°C to 75°C	50	100	200	400	600	800	1000	V
I_O	Average Rectified Forward Current from 25°C to 75°C (See Notes 1 and 2)	1							A
I_{FRM}	Repetitive Peak Forward Current, 10 Cycles, at (or below) 75°C (See Note 3)	10							A
I_{FSM}	Peak Surge Current, One Cycle, at (or below) 75°C (See Note 3)	30							A
$T_{A(opr)}$	Operating Ambient Temperature Range	-65 to 175							°C
T_{stg}	Storage Temperature Range	-65 to 200							°C
	Lead Temperature 3/8 Inch from Case for 10 Seconds	350							°C

- NOTES: 1. These values may be applied continuously under single-phase, 60-Hz, half-sine-wave operation with resistive load. Above 75°C derate I_O according to Figure 1.
2. This rectifier is a lead-conduction-cooled device. At (or above) ambient temperatures of 75°C, the lead temperature 3/8 inch from case must be no higher than 5°C above the ambient temperature for these ratings to apply.
3. These values apply for 60-Hz half sine waves when the device is operating at (or below) rated values of peak reverse voltage and average rectified forward current. Surge may be repeated after the device has returned to original thermal equilibrium.

*JEDEC registered data. This data sheet contains all applicable registered data in effect at the time of publication.

[†]The ambient temperature is measured at a point 2 inches below the device. Natural air cooling is used.

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*electrical characteristics at specified ambient[†] temperature

PARAMETER	TEST CONDITIONS	MAX	UNIT
I_R Static Reverse Current	$V_R = \text{Rated } V_R, T_A = 25^\circ\text{C}$	10	μA
	$V_R = \text{Rated } V_R, T_A = 100^\circ\text{C}$	50	
$I_{R(av)}$ Average Reverse Current	$V_{RM} = \text{Rated } V_{RM}, I_O = 1 \text{ A},$ $f = 60 \text{ Hz}, T_A = 75^\circ\text{C}$	30	μA
V_F Static Forward Voltage	$I_F = 1 \text{ A}, T_A = 25^\circ\text{C to } 75^\circ\text{C}$	1.1	V
$V_{F(av)}$ Average Forward Voltage	$V_{RM} = \text{Rated } V_{RM}, I_O = 1 \text{ A},$ $f = 60 \text{ Hz}, T_A = 25^\circ\text{C to } 75^\circ\text{C}$	0.8	V
V_{FM} Peak Forward Voltage	$V_{RM} = \text{Rated } V_{RM}, I_O = 1 \text{ A},$ $f = 60 \text{ Hz}, T_A = 25^\circ\text{C to } 75^\circ\text{C}$	1.6	V

*JEDEC registered data

THERMAL INFORMATION

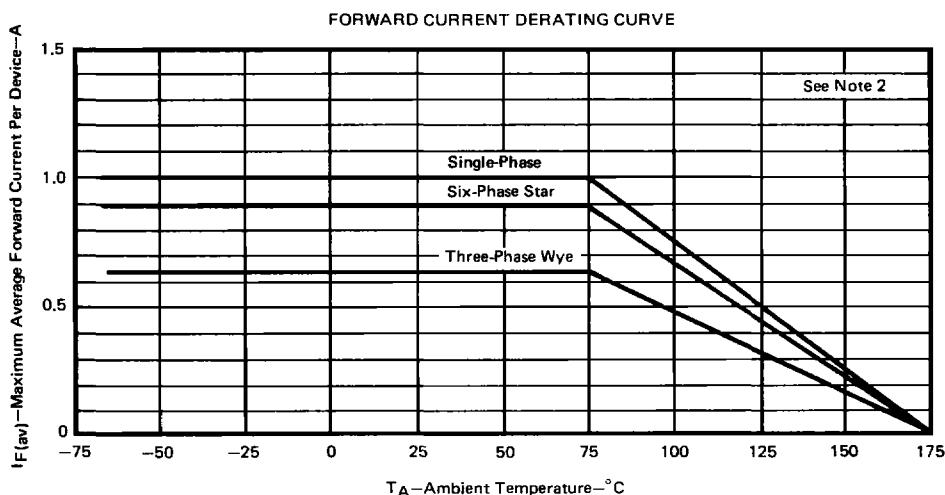


FIGURE 1

NOTE 2: This rectifier is a lead-conduction-cooled device. At (or above) ambient temperatures of 75°C , the lead temperature 3/8 inch from case must be no higher than 5°C above the ambient temperature for these ratings to apply.

[†]The ambient temperature is measured at a point 2 inches below the device. Natural air cooling is used.