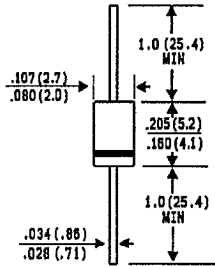


# UF4001 THRU UF4007

MINIATURE ULTRAFAST EFFICIENT PLASTIC RECTIFIER  
 VOLTAGE - 50 to 1000 Volts CURRENT - 1.0 Ampere

## FEATURES

### DO-41



Dimensions in inches and (millimeters)

- ◆ Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- ◆ 1.0 Ampere operation at  $T_A=55^\circ\text{C}$  with no thermal runaway
- ◆ Low cost
- ◆ Ultrafast recovery times for high efficiency
- ◆ Low Forward Voltage
- ◆ Low Leakage
- ◆ High Surge Capability
- ◆ High temperature soldering guaranteed:  $250^\circ\text{C}/10$  seconds/.375", (9.5mm) lead lengths at 5 lbs., (2.3kg) tension



## MECHANICAL DATA

**Case:** JEDEC DO-41 Molded plastic  
**Terminals:** Axial leads, solderable per MIL-STD-202, Method 208  
**Polarity:** Color band denotes Cathode end  
**Weight:** 0.012 ounce, 0.3 gram  
**Mounting Position:** Any

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

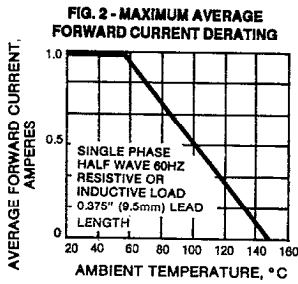
Ratings at  $25^\circ\text{C}$  ambient temperature unless otherwise specified.  
 Resistive or inductive load.  
 For capacitive load, derate current by 20%.

	SYMBOLS	UF	UF	UF	UF	UF	UF	UNITS	
		4001	4002	4003	4004	4005	4006		4007
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage	$V_{RMS}$	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Current .375" (9.5mm) Lead Length $T_A=55^\circ\text{C}$	$I_{(AV)}$	1.0							Amps
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	30.0							Amps
Maximum Instantaneous Forward Voltage at 1.0A	$V_F$	1.0			1.7				Volts
Maximum DC Reverse Current $T_A=25^\circ\text{C}$ at Rated DC Blocking Voltage $T_A=100^\circ\text{C}$	$I_R$	10.0			50.0				$\mu\text{A}$
Maximum Reverse Recovery Time (NOTE 1) $T_J=25^\circ\text{C}$	$T_{rr}$	50.0			75.0				nS
Typical Junction Capacitance (NOTE 2)	$C_J$	20.0			15.0				pF
Typical Thermal Resistance (NOTE 3)	$R_{\theta JA}$	50.0							$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-50 to +150							$^\circ\text{C}$

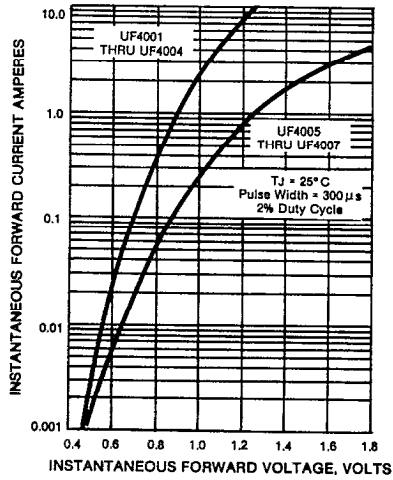
### NOTES:

1. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{rr}=25\text{A}$ .
2. Measured at 1 MHz and applied reverse voltage of 4.0 Volts.
3. Thermal Resistance from Junction to Ambient, .375", 9.5mm Lead Lengths, P.C. board mounted.

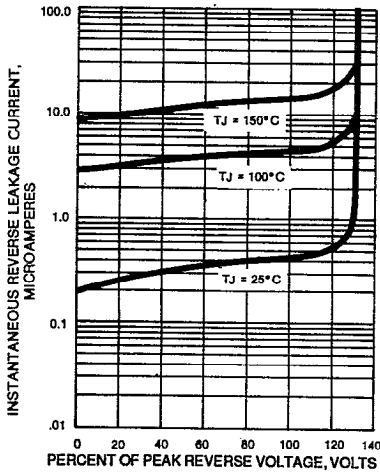
**RATINGS AND CHARACTERISTIC CURVES UF4001 THRU UF4007**



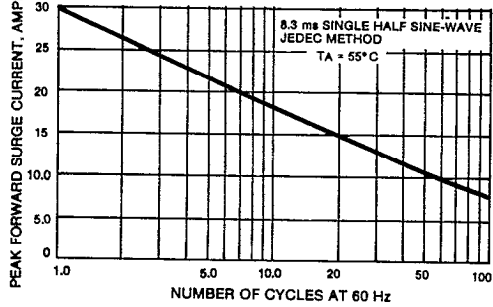
**FIG. 2 — TYPICAL FORWARD CHARACTERISTICS**



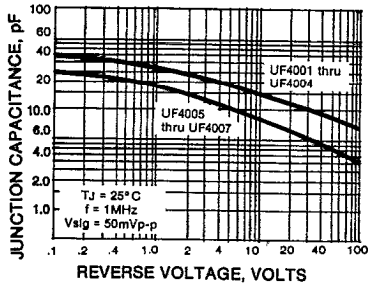
**FIG. 3 — TYPICAL REVERSE CHARACTERISTICS**



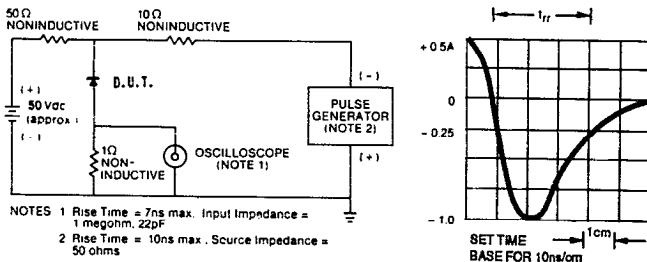
**FIG. 4 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



**FIG. 6 — TYPICAL JUNCTION CAPACITANCE**



**FIG. 5 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM**

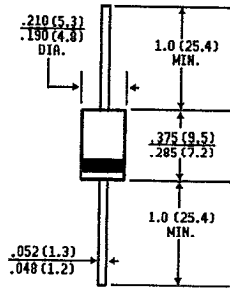


# UF5400 THRU UF5408

**ULTRAFAST EFFICIENT PLASTIC RECTIFIER**  
**Voltage - 50 to 1000 Volts Current - 3.0 Amperes**

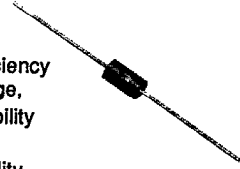
## FEATURES

### DO-201AD



Dimensions in inches  
and  
(millimeters)

- ◆ Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- ◆ Low cost
- ◆ Ultrafast recovery times for high efficiency
- ◆ Low forward voltage, high current capability
- ◆ Low leakage
- ◆ High surge capability
- ◆ High temperature soldering guaranteed: 250°C .375" (9.5mm) lead lengths for 10 seconds at 5 lbs. (2.3 kg) tension



## MECHANICAL DATA

**Case:** JEDEC DO-201AD, molded plastic

**Terminals:** Axial Leads solderable per MIL-STD-202, Method 208

**Polarity:** Color band denotes Cathode end

**Mounting Position:** Any

**Weight:** 0.04 ounce, 1.1 gram

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.  
 Resistive or inductive load.  
 For capacitive load, derate current by 20%.

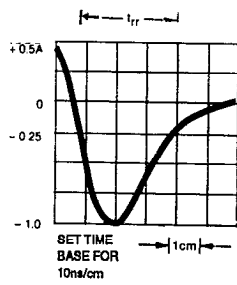
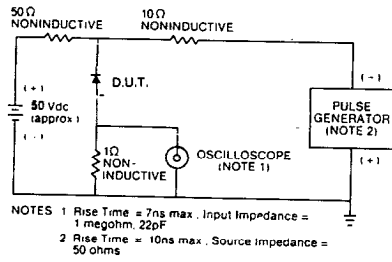
	SYMBOLS	UF 5400	UF 5401	UF 5402	UF 5403	UF 5404	UF 5405	UF 5406	UF 5407	UF 5408	UNITS
Maximum Recurrent Peak Reverse Voltage	V <sub>RRM</sub>	50	100	200	300	400	500	600	800	1000	Volts
Maximum RMS Voltage	V <sub>RMS</sub>	35	70	140	210	280	350	420	580	700	Volts
Maximum DC Blocking Voltage	V <sub>DC</sub>	50	100	200	300	400	500	600	800	1000	Volts
Maximum Average Forward Rectified Current, .375" (9.5 mm) Lead Length at T <sub>A</sub> =55°C	I <sub>(AV)</sub>	3.0									Amps
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) T <sub>A</sub> =55°C	I <sub>FSM</sub>	150.0									Amps
Maximum Instantaneous Forward Voltage at 3.0A	V <sub>F</sub>	1.0			1.7						Volts
Maximum DC Reverse Current T <sub>A</sub> =25°C at Rated DC Blocking Voltage T <sub>A</sub> =100°C	I <sub>R</sub>	10.0			50.0						µA
Maximum Reverse Recovery Time (NOTE 1) T <sub>J</sub> =25°C	T <sub>RR</sub>	50.0			75.0						nS
Typical Junction Capacitance (NOTE 2)	C <sub>J</sub>	75.0			50.0						pf
Maximum Thermal Resistance (NOTE 3)	R <sub>θJL</sub>	20.0									°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-50 to +150									°C

### NOTES:

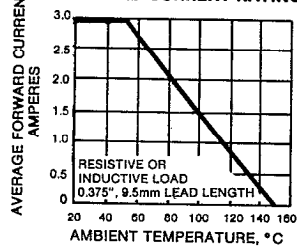
1. Reverse Recovery Test Conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, recover to 0.25A.
2. Measure at 1MHz and applied reverse voltage of 4.0 volts.
3. Thermal Resistance from Junction to Lead, .375" (9.5mm) lead lengths, both leads attached to heatsink.

# RATINGS AND CHARACTERISTIC CURVES UF5400 THRU UF5408

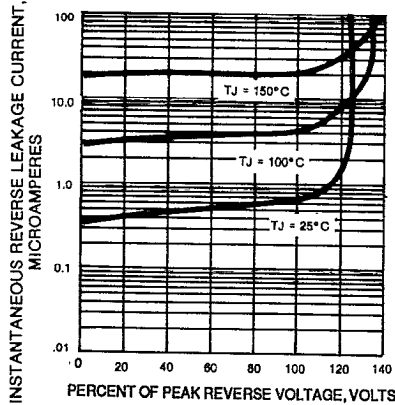
**FIG. 1 — REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM**



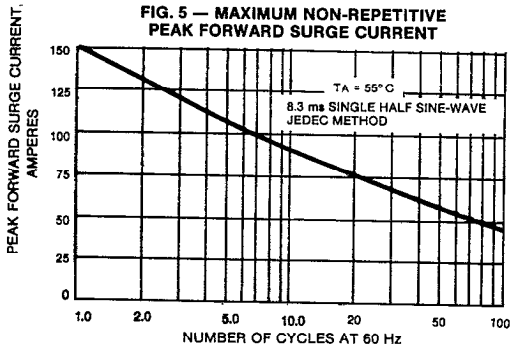
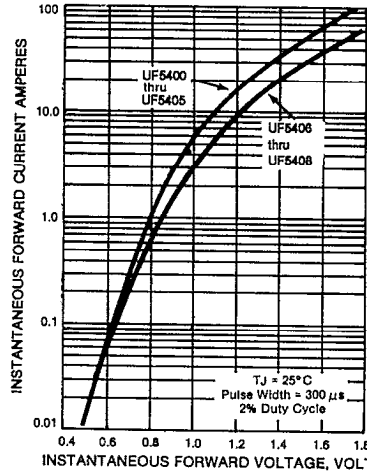
**FIG. 2 — MAXIMUM AVERAGE FORWARD CURRENT RATING**



**FIG. 3 — TYPICAL REVERSE CHARACTERISTICS**



**FIG. 4 — TYPICAL FORWARD CHARACTERISTICS**



**FIG. 6 — TYPICAL JUNCTION CAPACITANCE**

