

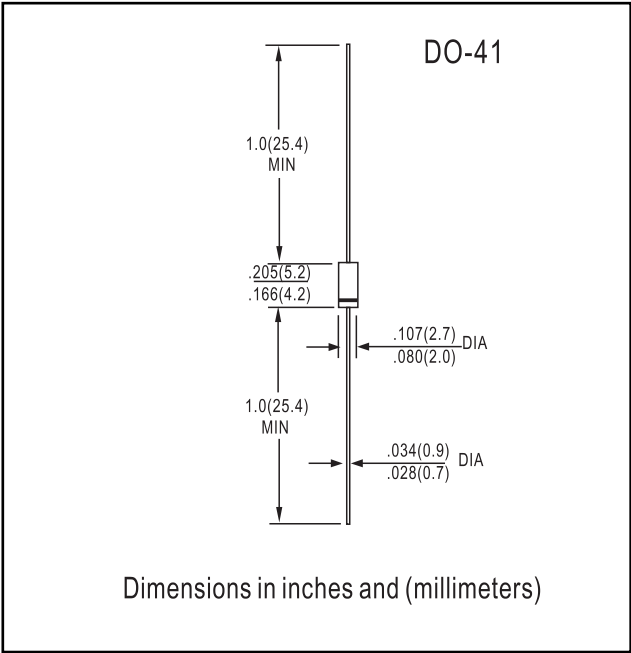


TAYCHIPST

ULTRA-FAST RECTIFIER

UF1001 THRU UF1007  
50V-1000V 1.0 A

- FEATURES**
- Diffused Junction
  - Ultra-Fast Switching for High Efficiency
  - High Current Capability and Low Forward Voltage Drop
  - Low Reverse Leakage Current
  - Surge Overload Rating to 30A Peak
  - Low Reverse Leakage Current
  - Plastic Material: UL Flammability Classification Rating 94V-0



**Mechanical Data**

- Case: Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Marking: Type Number
- Weight: 0.35 grams (approx.)
- Mounting Position: Any

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

Characteristic	Symbol	UF 1001	UF 1002	UF 1003	UF 1004	UF 1005	UF 1006	UF 1007	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Working Peak Reverse Voltage	$V_{RWM}$								
DC Blocking Voltage	$V_R$								
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
Average Rectified Output Current @ $T_A = 55^\circ C$ (Note 1)	$I_O$	1.0							A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load (JEDEC Method)	$I_{FSM}$	30							A
Forward Voltage @ $I_F = 1.0A$	$V_{FM}$	1.0		1.3		1.7			V
Peak Reverse Current @ $T_A = 25^\circ C$ at Rated DC Blocking Voltage @ $T_A = 100^\circ C$	$I_{RM}$	5.0 100							$\mu A$
Reverse Recovery Time (Note 3)	$t_{rr}$	50				75			ns
Typical Junction Capacitance (Note 2)	$C_j$	20				10			pF
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	95							K/W
Operating and Storage Temperature Range	$T_j, T_{STG}$	-65 to +150							$^\circ C$

- Notes:
1. Valid provided that leads are maintained at ambient temperature at a distance of 9.5mm from the case.
  2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
  3. Measured with  $I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A$ . See figure 5.



RATINGS AND CHARACTERISTIC CURVES UF1001 THRU UF1007

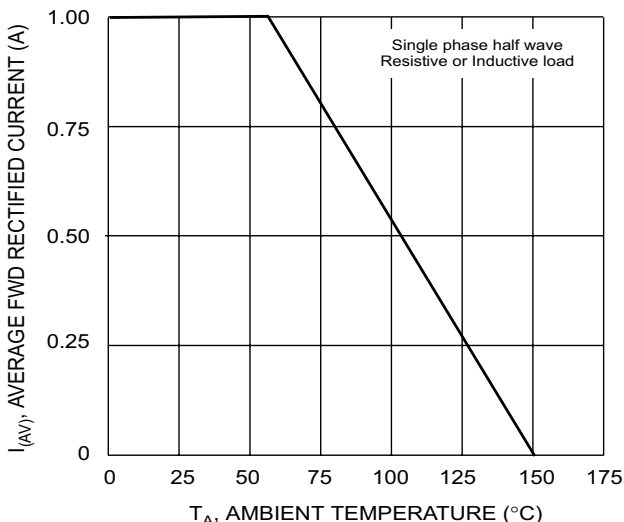


Fig. 1 Forward Current Derating Curve

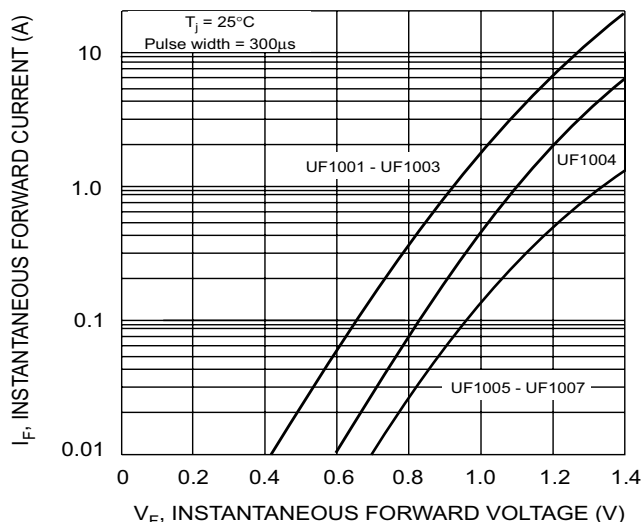


Fig. 2 Typical Forward Characteristics

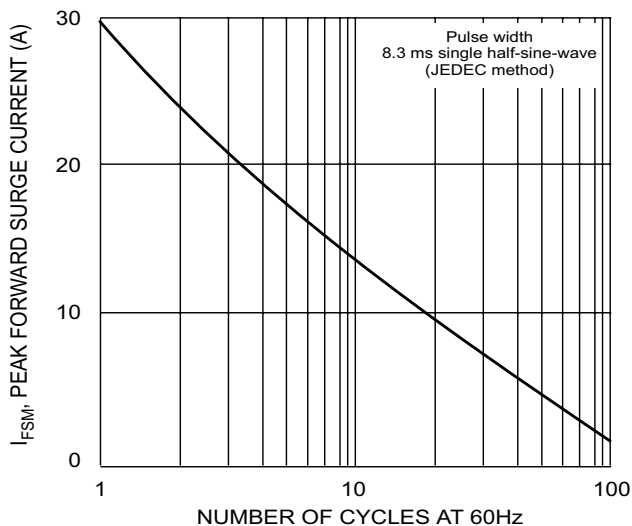


Fig. 3 Peak Forward Surge Current

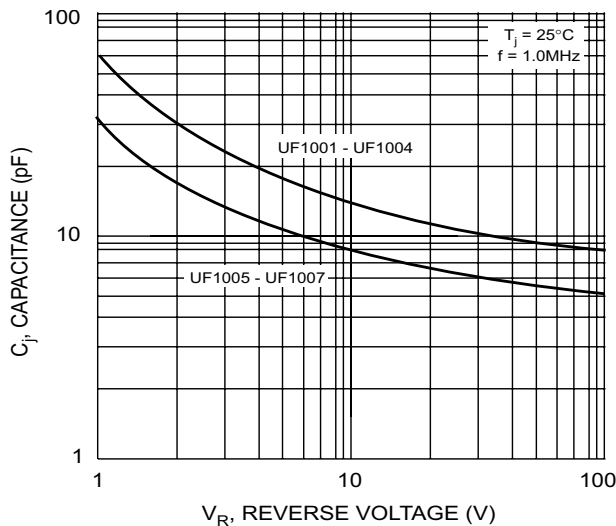
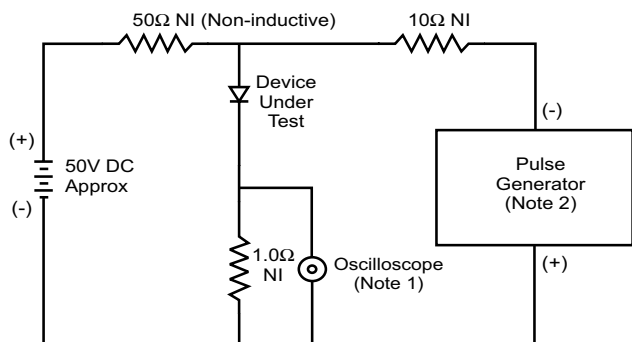
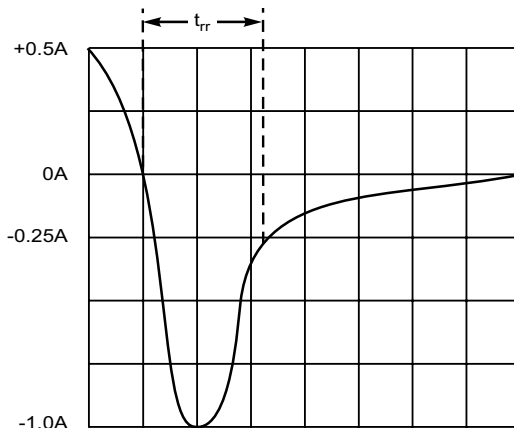


Fig. 4 Typical Junction Capacitance



- Notes:  
 1. Rise Time = 7.0ns max. Input Impedance = 1.0M $\Omega$ , 22pF.  
 2. Rise Time = 10ns max. Input Impedance = 50 $\Omega$ .



Set time base for 50/100 ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit