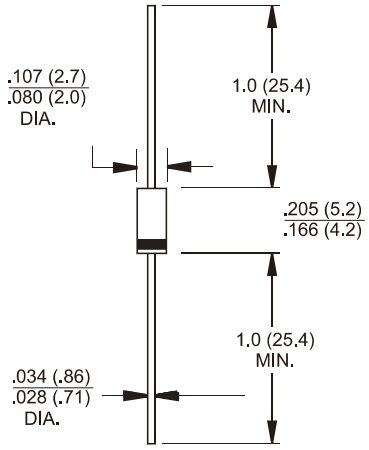
TAIWAN SEMICONDUCTOR

UF4001 - UF4007

1.0 AMP. Glass Passivated High Efficient Rectifiers

RoHS COMPLIANCE

DO-41/DO-204AL



Dimensions in inches and (millimeters)

Features

- ✧ Plastic package has Underwriters Laboratory Flammability Classification 94V0
- ✧ Glass passivated chip junction
- ✧ Low cost
- ✧ Ultrafast recovery time for high efficiency
- ✧ High efficiency, low VF
- ✧ Low leakage current
- ✧ High surge current capability
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode.

Mechanical Data

- ✧ Case: JEDEC DO-204AL molded plastic body over passivated chip
- ✧ Terminals: Pure tin plated, lead free, solderable per MIL-STD-750, Method 2026
- ✧ Polarity: Color band denotes cathode
- ✧ Mounting Position: Any
- ✧ High temperature soldering guaranteed: 260°C/10 seconds/.375",(9.5mm) lead lengths at 5 lbs., (2.3kg) tension
- ✧ Weight: 0.34 grams

Marking Diagram

UF400X = Specific Device Code
G = Green Compound
Y = Year
WW = Work Week

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%

Type Number	Symbol	UF 4001	UF 4002	UF 4003	UF 4004	UF 4005	UF 4006	UF 4007	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375 (9.5mm) Lead Length @T_A = 75°C	$I_{F(AV)}$	1.0							A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	30							A
Maximum Instantaneous Forward Voltage @1.0A	V_F	1.0				1.7			V
Maximum DC Reverse Current at @ T_A=25°C Rated DC Blocking Voltage (Note 1) @T_A=125°C	I_R	5.0 150							uA uA
Maximum Reverse Recovery Time (Note 4)	Trr	50				75			nS
Typical Junction Capacitance (Note 2)	Cj	17							pF
Typical Thermal Resistance (Note 3)	$R_{\Theta JA}$ $R_{\Theta JL}$	60 15							°C/W
Operating/Storage Temperature Range	T_J, T_{STG}	-65 to + 150							°C

Notes: 1. Pulse Test with PW=300 usec,1% Duty Cycle
2. Measured at 1 MHz and Applied Reverse Voltage of 4.0 V D.C.
3. Thermal Resistance from junction to ambient and from Junction to Lead Length .375"(9.5mm), P.C.B. Mounted.
4. Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

RATINGS AND CHARACTERISTIC CURVES (UF4001 THRU UF4007)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

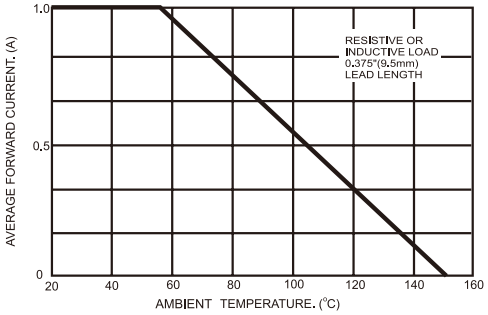


FIG.2- TYPICAL FORWARD CHARACTERISTICS

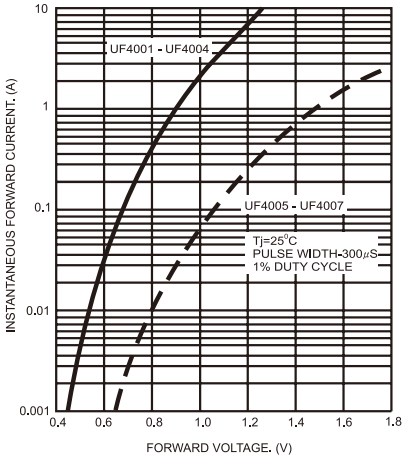


FIG.3- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

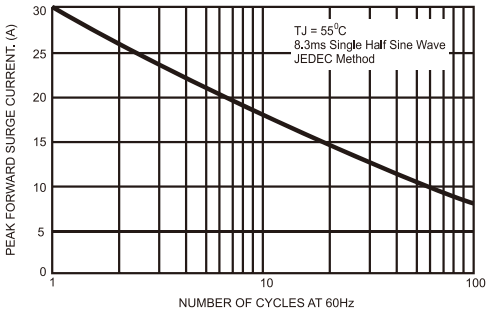


FIG.4- TYPICAL JUNCTION CAPACITANCE

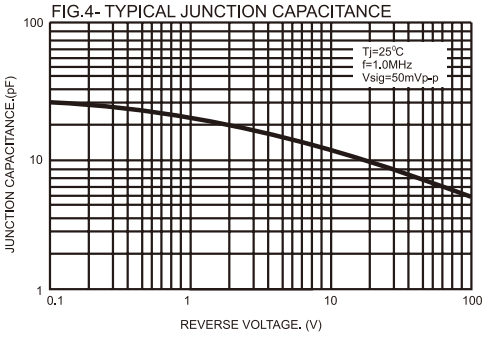


FIG.5- TYPICAL REVERSE CHARACTERISTICS

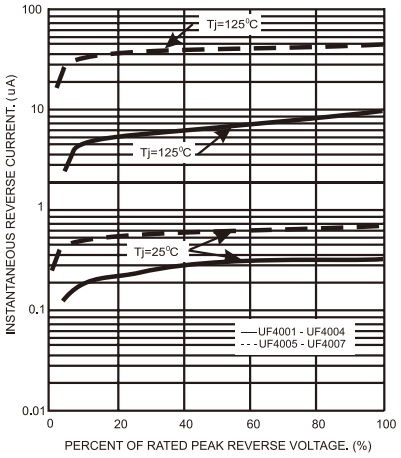
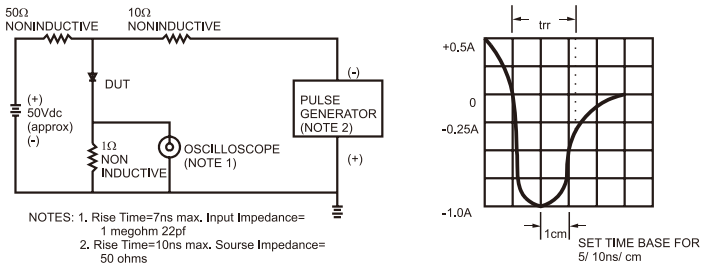


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time=7ns max. Input Impedance= 1 megohm 22pf
2. Rise Time=10ns max. Sourse Impedance= 50 ohms