Features and Benefits

- Diffused Junction
- Ultra-Fast Switching for High Efficiency
- Surge Overload Rating to 50A Peak
- Low Reverse Leakage Current
- **Lead Free Finish, RoHS Compliant (Note 1)**

Mechanical Data

- Case: DO-41
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish — Tin. Plated Leads Solderable per MIL-STD-202, Method 208 e3
- Polarity: Cathode Band
- Marking: Type Number
- DO-41 Weight: 0.35 grams (approximate)

Ordering Information (Note 2)

Device	Packaging	Shipping
UF1501S-B	DO-41	1K/Bulk
UF1502S-B	DO-41	1K/Bulk
UF1503S-B	DO-41	1K/Bulk
UF1504S-B	DO-41	1K/Bulk
UF1505S-B	DO-41	1K/Bulk
UF1506S-B	DO-41	1K/Bulk
UF1507S-B	DO-41	1K/Bulk

Notes: 1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see *EU Directive 2002/95/EC Annex Notes*
2. For packaging details, visit our website at http://www.diodes.com/datasheets/ap02007.pdf.

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

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

Characteristic	Symbol	UF 1501S	UF 1502S	UF 1503S	UF 1504S	UF 1505S	UF 1506S	UF 1507S	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage (Note 3)	V_{RRM} V_{RWM} V_R	50	100	200	400	600	800	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
Average Rectified Output Current (Note 4) @ T_A = 50°C	I_O	1.5							A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	50							A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	70	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	UF 1501S	UF 1502S	UF 1503S	UF 1504S	UF 1505S	UF 1506S	UF 1507S	Unit
Forward Voltage @ I_F = 1.5A	V_{FM}	1.0			1.3	1.7			V
Peak Reverse Current @ T_A = 25°C at Rated DC Blocking Voltage (Note 3) @ T_A = 100°C	I_{RM}	5.0 100							μA
Reverse Recovery Time (Note 5)	t_{rr}	50				75			ns
Typical Total Capacitance (Note 6)	C_T	35				20			pF

Notes: 3. Short duration pulse test used to minimize self-heating effect.
4. Valid provided that leads are maintained at ambient temperature at a distance of 9.5mm from the case.
5. Measured with I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A. See figure 5.
6. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

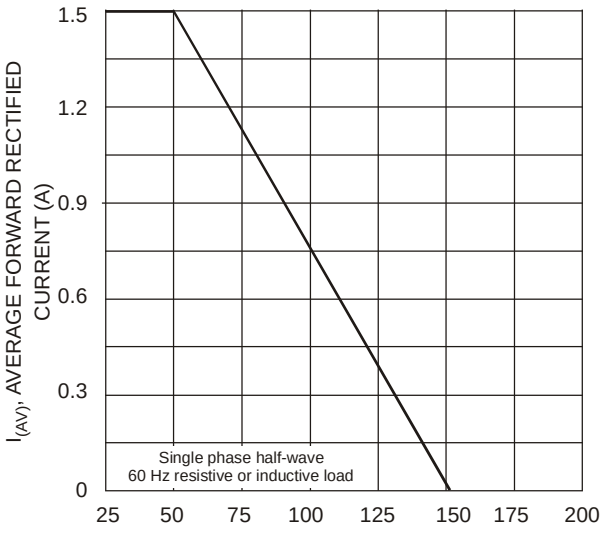


Fig. 1 Forward Current Derating Curve

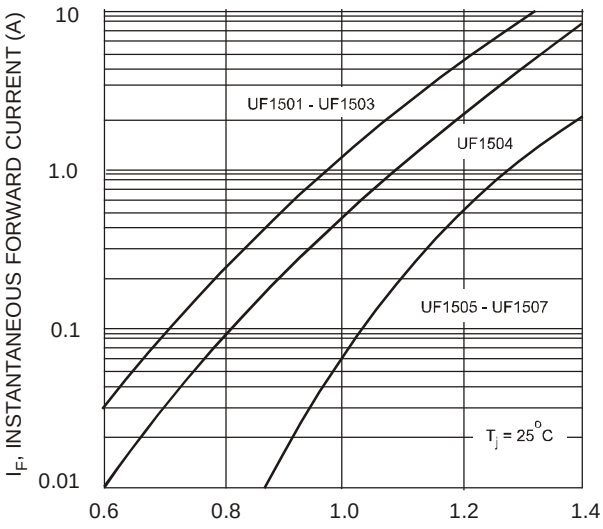


Fig. 2 Typical Forward Characteristics

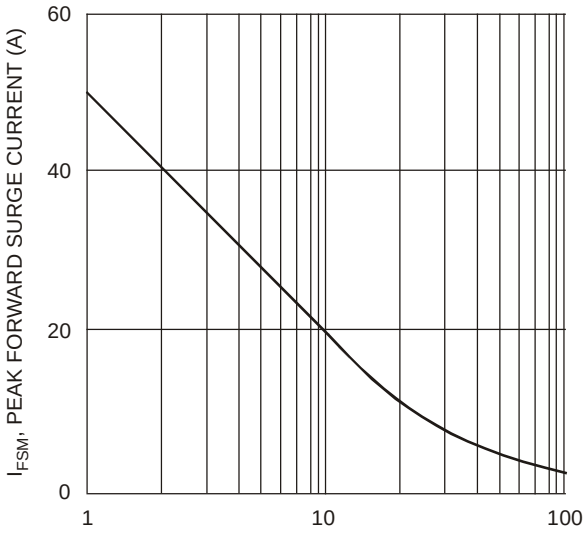


Fig. 3 Peak Forward Surge Current

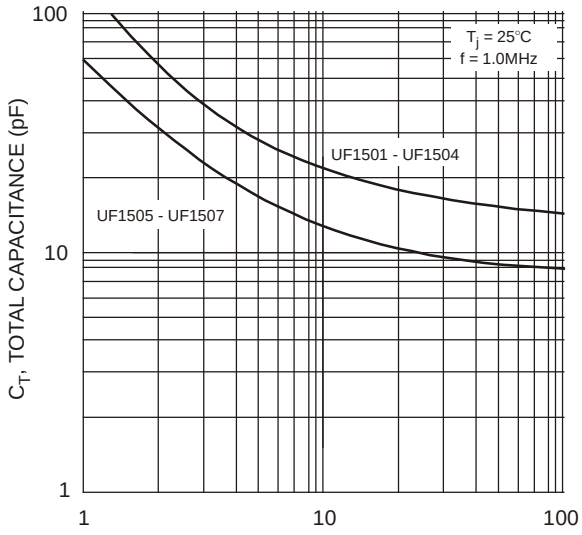
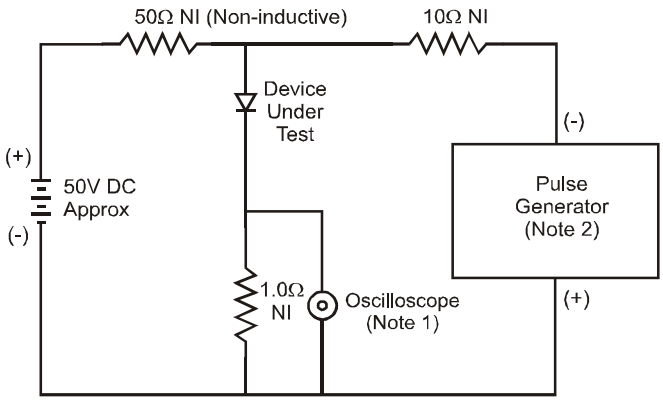


Fig. 4 Typical Total Capacitance



Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
2. Rise Time = 10ns max. Input Impedance = 50Ω.

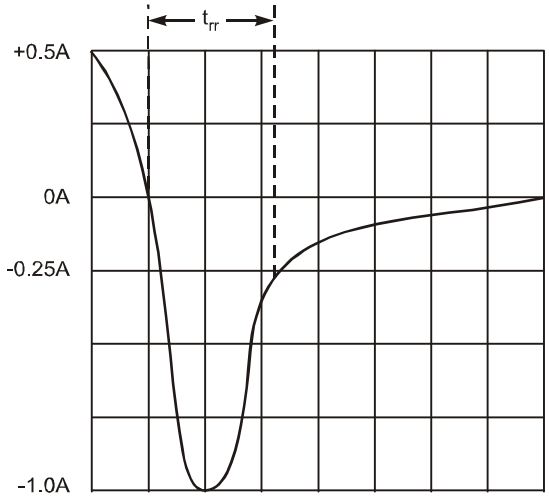
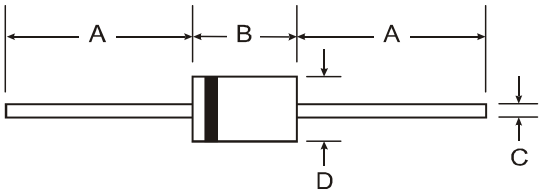


Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

Package Outline Dimensions



Dim	DO-41	
	Min	Max
A	25.40	—
B	4.06	5.21
C	0.71	0.864
D	2.00	2.72
All Dimensions in mm		

"S" Suffix Designates DO-41 Package