

UF8A05F THRU UF8A100F

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UF8A05F THRU UF8A100F

8.0A Isolated Ultra Fast Recovery Rectifiers - 50V-1000V

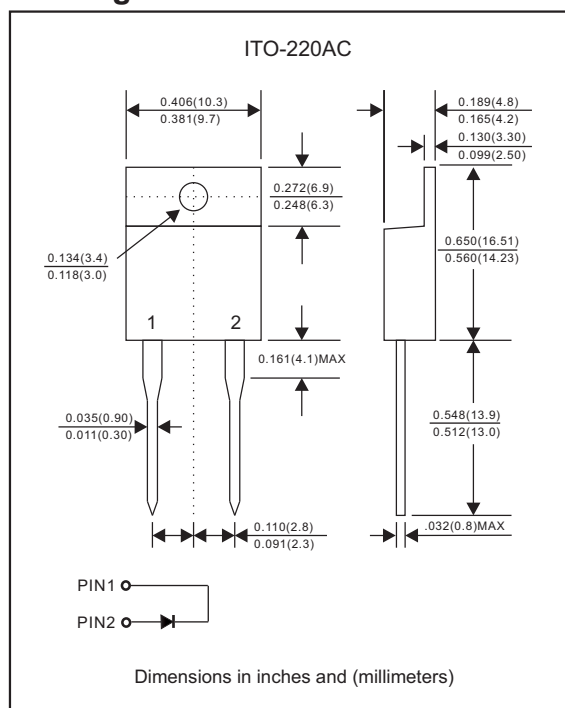
Features

- Low forward voltage, high current capability
- Ultra fast recovery times, high voltage
- Low power loss, high efficiency
- Glass passivated chip junctions
- Lead-free parts meet RoHS requirements
- Suffix "-H" indicates Halogen free parts, ex. UF8A05F-H

Mechanical data

- Epoxy: UL94-V0 rated flame retardant
- Case: JEDEC ITO-220AC molded plastic body over passivated chip
- Lead: Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- Polarity: As marked
- Mounting Position: Any
- Weight: Approximated 1.7 gram

Package outline



Maximum ratings (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	UF8A05F	UF8A10F	UF8A20F	UF8A40F	UF8A60F	UF8A80F	UF8A100F	UNIT
Maximum repetitive 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	I_o	8.0							A
Peak forward surge current 8.3ms single half sine-wave(JEDEC method)	I_{FSM}	125							A
Operating junction temperature range	T_J	-55 to +150							$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-65 to +175							$^{\circ}\text{C}$

Electrical characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	UF8A05F	UF8A10F	UF8A20F	UF8A40F	UF8A60F	UF8A80F	UF8A100F	UNIT
Maximum forward voltage at $I_F=8.0A$	V_F	1.00			1.30	1.70			V
Maximum DC reverse current at rated DC blocking voltage $T_J=25^{\circ}\text{C}$ $T_J=125^{\circ}\text{C}$	I_R				5.0 500				μA μA
Maximum reverse recovery time (Note 1)	t_{rr}	50			75				ns

Thermal characteristics

PARAMETER	SYMBOLS	UF8A05F	UF8A10F	UF8A20F	UF8A40F	UF8A60F	UF8A80F	UF8A100F	UNIT
Typical thermal resistance junction to case	$R_{\theta JC}$	2.5							$^{\circ}\text{C}/\text{W}$

Note 1: Reverse recovery time test condition, $I_F=0.5A$, $I_R=1.0A$, $I_{RR}=0.25A$

Rating and characteristic curves (UF8A05F THRU UF8A100F)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

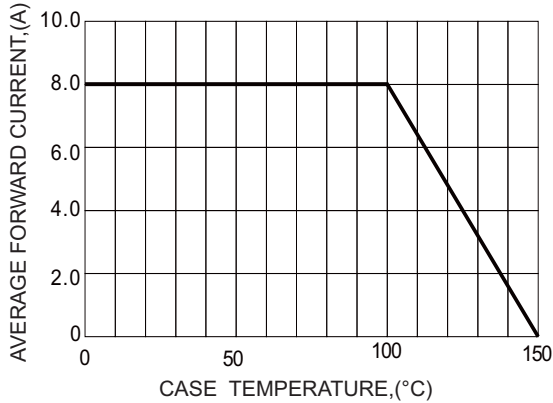


FIG.2-TYPICAL FORWARD CHARACTERISTICS

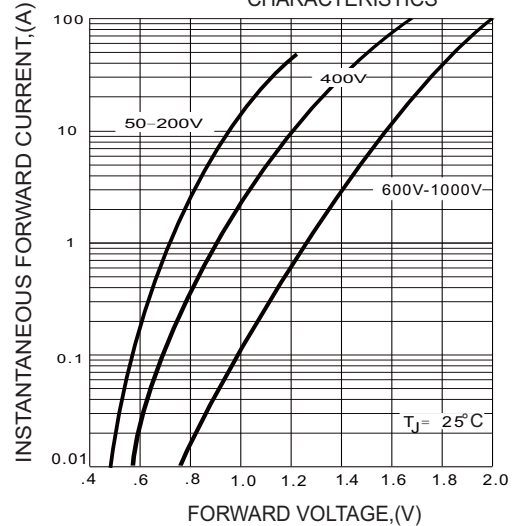


FIG.3-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

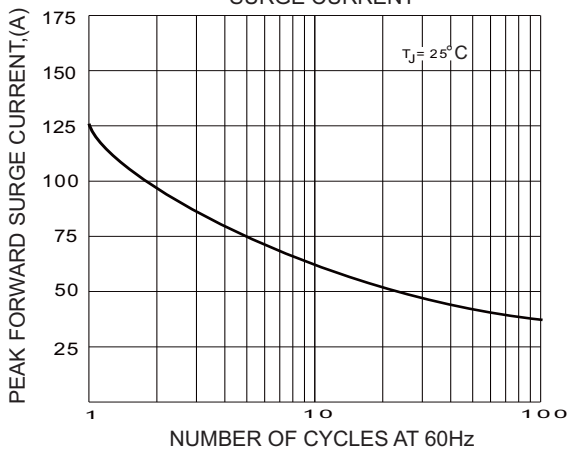


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

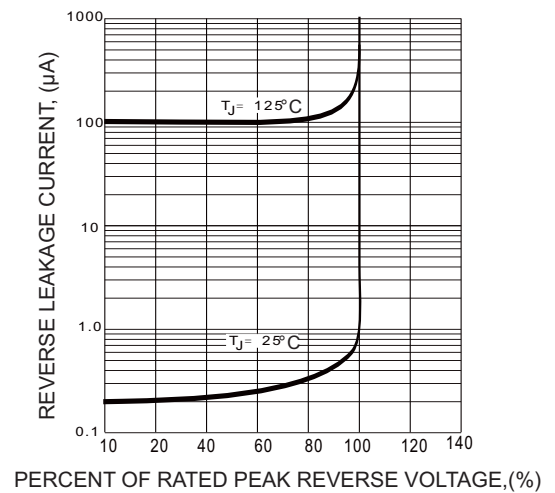


FIG.5- TEST CIRCUIT DIAGRAM AND REVERSE

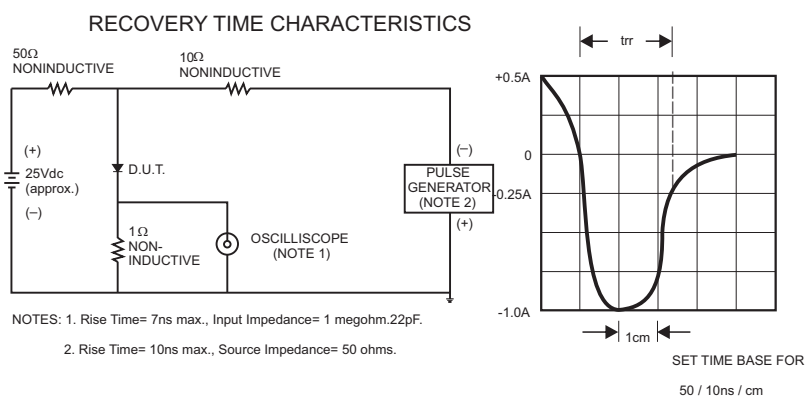
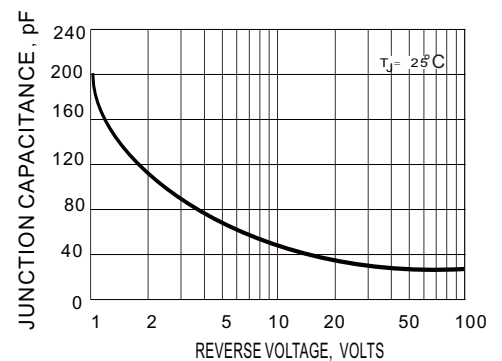
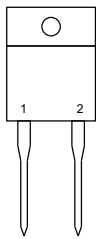
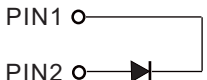


FIG.6 TYPICAL JUNCTION CHARACTERISTICS



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Pinning information

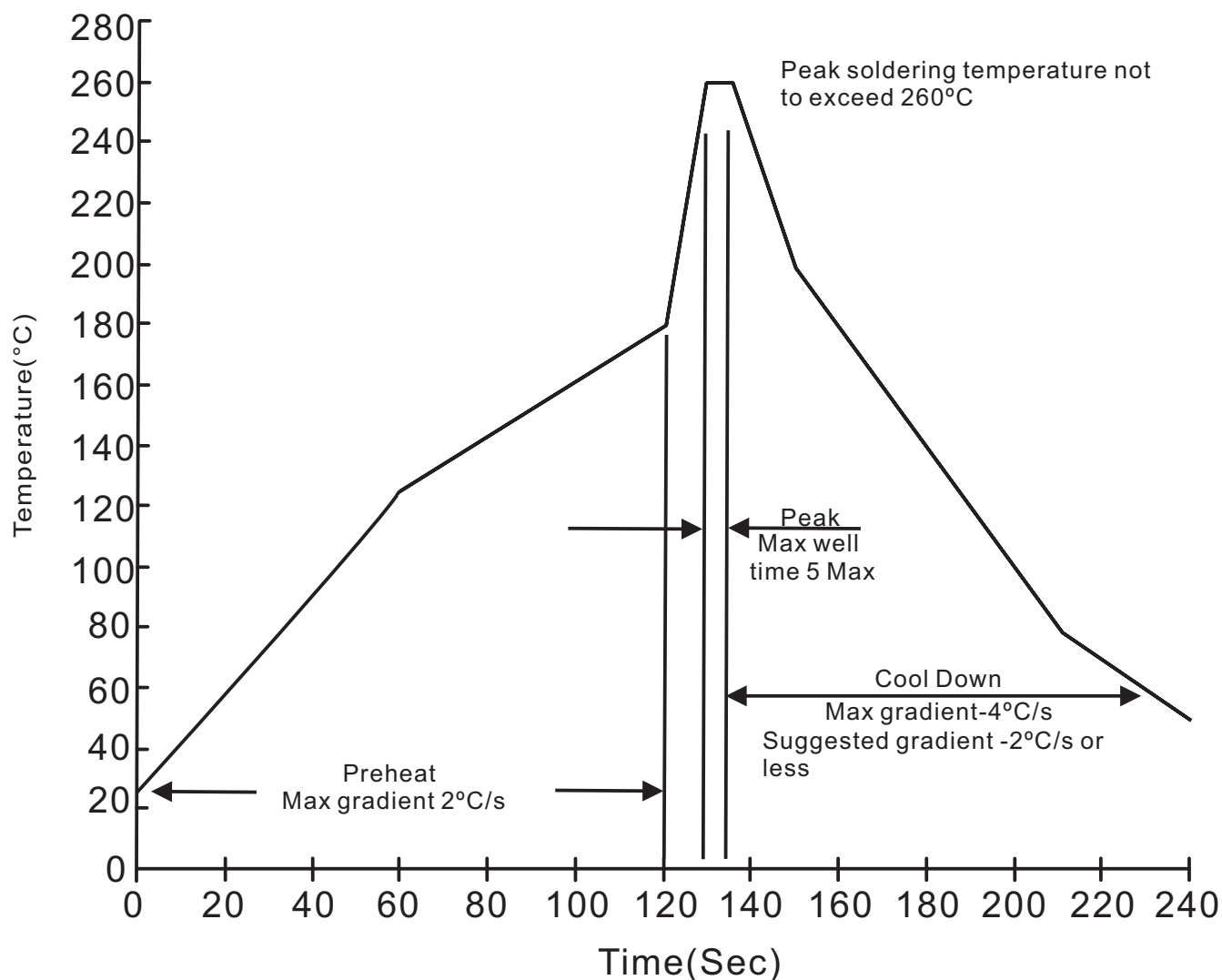
Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
UF8A05F	UF8A05F
UF8A10F	UF8A10F
UF8A20F	UF8A20F
UF8A40F	UF8A40F
UF8A60F	UF8A60F
UF8A80F	UF8A80F
UF8A100F	UF8A100F

Tube packing

PACKAGE	TUBE (pcs)	TUBE SIZE (m/m)	BOX (pcs)	INNER BOX (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
ITO-220AC	50	525*32*7.0	1,000	555*150*40	580*230*175	5,000	15.0

UF8A05F THRU UF8A100F**Suggested thermal profiles for soldering processes****1. Lead free temperature profile wave-soldering**

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High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at $260 \pm 5^\circ\text{C}$ for $10 \pm 2\text{sec.}$ immerse body into solder $1/16" \pm 1/32"$	MIL-STD-750D METHOD-2031
2. Solderability	at $245 \pm 5^\circ\text{C}$ for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	$V_R = 80\%$ rate at $T_J = 150^\circ\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at $T_A = 25^\circ\text{C}$ for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	$T_A = 25^\circ\text{C}$, $I_F = I_O$ On state: power on for 5 min. off state: power off for 5 min. on and off for 500 cycles.	MIL-STD-750D METHOD-1036
6. Pressure Cooker	$15P_{SIG}$ at $T_A = 121^\circ\text{C}$ for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to $+125^\circ\text{C}$ dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Forward Surge	8.3ms single half sine-wave , one surge.	MIL-STD-750D METHOD-4066-2
9. Humidity	at $T_A = 85^\circ\text{C}$, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
10. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031