

EF8A05F THRU EF8A60F

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8.0A Glass Passivated Leaded Efficiency Fast Rectifiers-50-600V

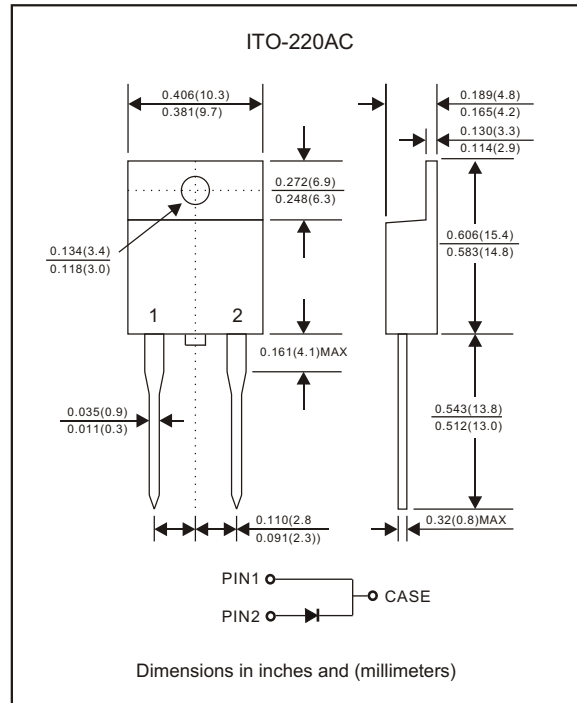
Package outline

Features

- Reverse recovery time less than 25ns
- High current capability.
- Low reverse leakage current.
- High surge capability.
- Glass passivated chip junction.
- Low forward drop down voltage.
- High reliability.
- Lead-free parts meet RoHS requirements.

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 guranteed
- Polarity: Color band denotes cathode end
- Mounting Position : Any
- Weight : Approximated 2.25 gram



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

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	Ambient temperature = $55^{\circ}C$	I_o			8.0	A
Forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC methode)	I_{FSM}			125	A
Reverse current	$V_R = V_{RRM} T_A = 25^{\circ}C$	I_R			10	uA
	$V_R = V_{RRM} T_A = 125^{\circ}C$				100	
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage	C_j		60		pF
Storage temperature		T_{STG}	-65		+175	$^{\circ}C$

SYMBOLS	V_{RRM}^{*1} (V)	V_{RMS}^{*2} (V)	V_R^{*3} (V)	V_F^{*4} (V)	T_{RR}^{*5} (nS)	Operating temperature T_J ($^{\circ}C$)
EF8A05F	50	35	50	0.98	25	-55 to +150
EF8A10F	100	70	100			
EF8A20F	200	140	200			
EF8A40F	400	280	400	1.25		
EF8A60F	600	420	600	1.75		

*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

*4 Maximum forward voltage

*5 Reverse recovery time

RATING AND CHARACTERISTIC CURVES (SF8A05F THRU SF8A60F)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

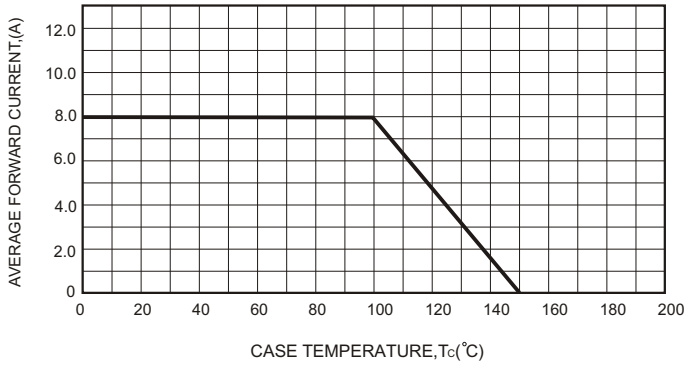


FIG.2-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

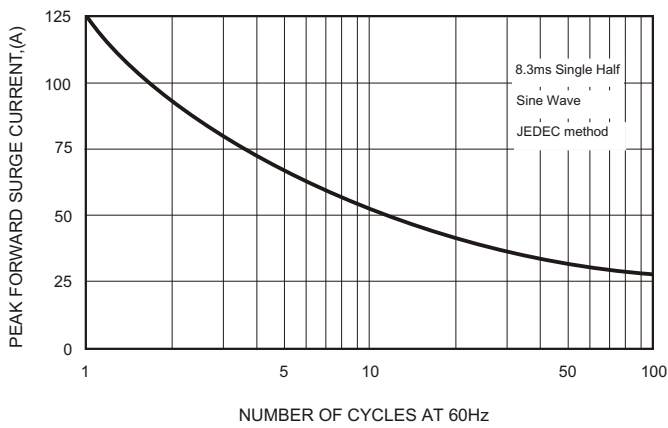


FIG.5-TYPICAL JUNCTION CAPACITANCE

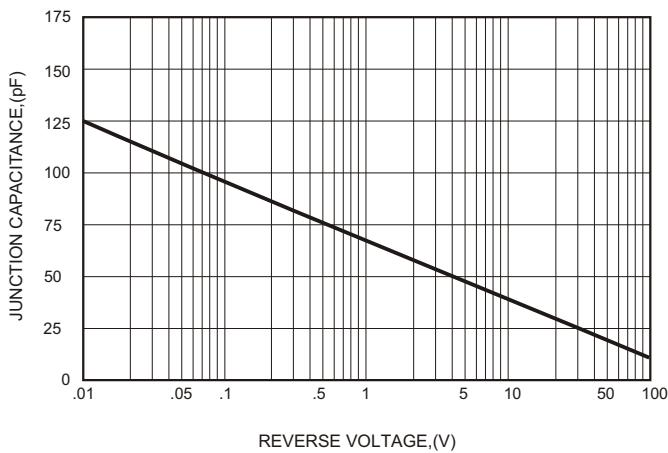


FIG.3-TYPICAL FORWARD CHARACTERISTICS

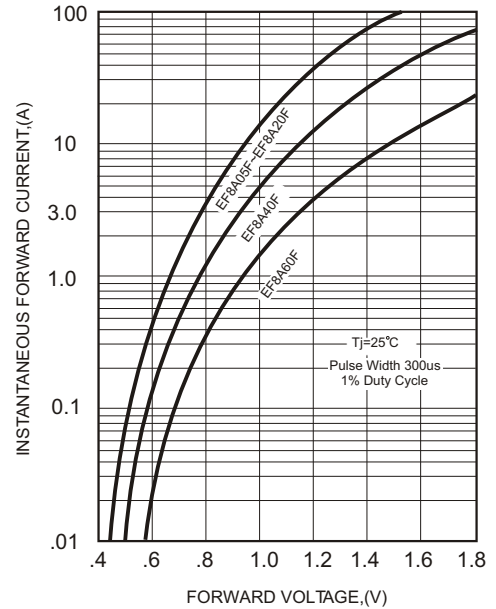
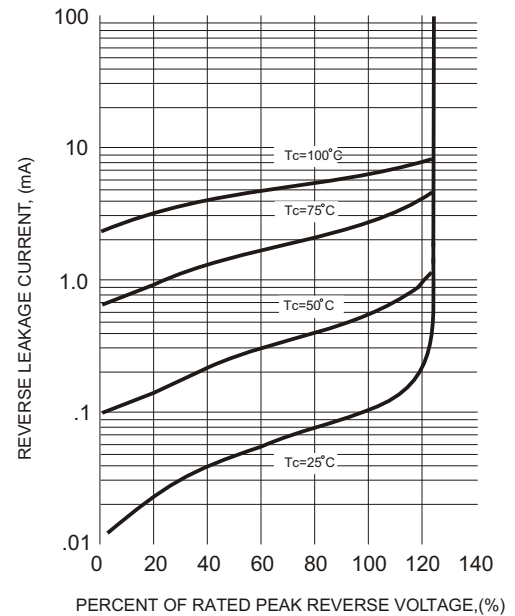
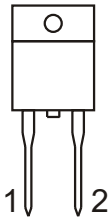



FIG.4 - TYPICAL REVERSE CHARACTERISTICS



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Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
EF8A05F	EF8A05F
EF8A10F	EF8A10F
EF8A20F	EF8A20F
EF8A40F	EF8A40F
EF8A60F	EF8A60F

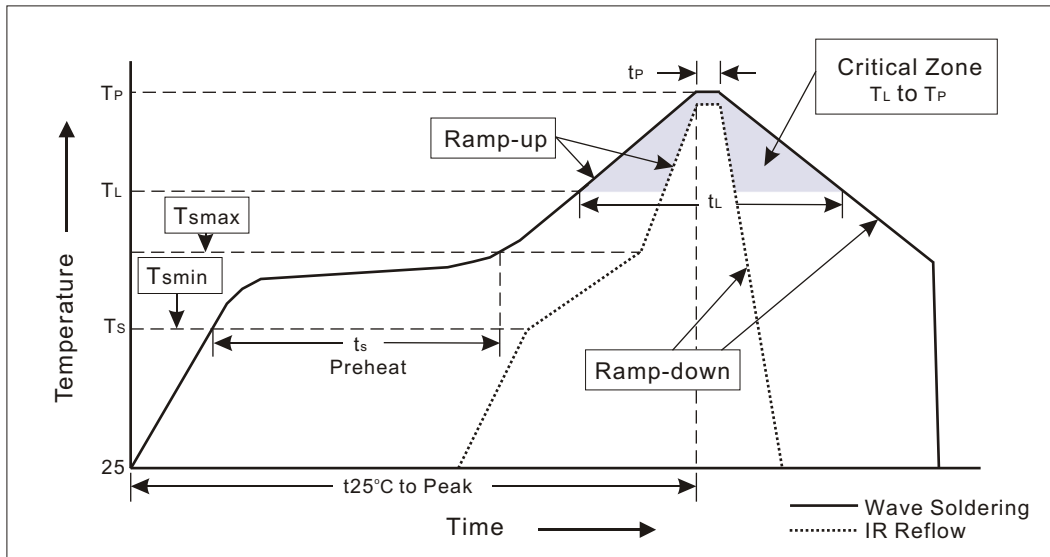
Tube packing

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	535*32*7.0	2000	550*167*75	570*345*170	8,000	23.0

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Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=10°C~35°C Humidity=65%±15%
- 2.Reflow soldering of surface-mount devices



3.Flow (wave)soldering (solder dipping)

Profile Feature	Soldering Condition
Average ramp-up rate(T_L to T_P)	<3°C/sec
Preheat -Temperature Min(T_{smin}) -Temperature Max(T_{smax}) -Time(min to max)(t_s)	100°C 150°C 60~120sec
T_{smax} to T_L -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(T_L) -Time(t_l)	183°C 60~150sec
Peak Temperature(T_P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t_p)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes

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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. Pull Test	1kg in axial lead direction for 10 sec.	MIL-STD-750D METHOD-2036
4. Bend Lead	0.5kg weight applied to each lead bending arc $90^{\circ}\pm 5^{\circ}$ for 3 times.	MIL-STD-750D METHOD-2036
5. High Temperature Reverse Bias	$V_R=80\%$ rate at $T_J=150^{\circ}\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1026
6. Forward Operation Life	Rated average rectifier current at $T=25^{\circ}\text{C}$ for 500 hrs.	MIL-STD-750D METHOD-1027
7. 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
8. Pressure Cooker	$15P_{SIE}$ at $T_A=121^{\circ}\text{C}$ for 4 hrs.	
9. Temperature Cycling	-55°C to $+125^{\circ}\text{C}$ dwelled for 30 min. and transferred for 5 min. total 10 cycles.	MIL-STD-750D METHOD-1051
10. Thermal Shock	0°C for 5 min. rise to 100°C for 5 min. total 10 cycles.	MIL-STD-750D METHOD-1056
11. Forward Surge	8.3ms single half sine-wave superimposed on rated load, one surge.	MIL-STD-750D METHOD-4066-2
12. Humidity	at $T_A=65^{\circ}\text{C}$, RH=98% for 1000 hrs.	MIL-STD-750D METHOD-1038
13. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031
14. Solvent Resistance	Dip into Freon at 25°C for 1 min.	MIL-STD-202F METHOD-215