FE8A60

List

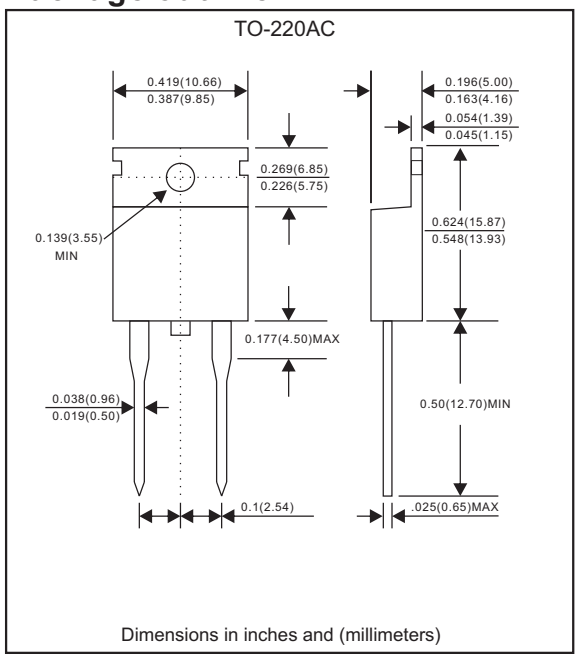
FE8A60

8.0A Effciency Fast Rectifiers-600V

Features

- Reverse recovery time less than 20ns
- High current capability.
- Low reverse leakage current.
- High surge capability.
- Low forward drop down voltage.
- High reliability.
- Lead-free parts meet RoHS requirments.
- Suffix "-H" indicates Halogen free parts, ex. FE8A60-H.

Package outline



Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : JEDEC TO-220AC molded plastic body over passivated chip
- Lead : Axial leads, solderable per MIL-STD-202, Method 208 guranteed
- Polarity: As marked
- Mounting Position : Any
- Weight : Approximated 2.05grams

Maximum ratings (AT T_A=25°C unless otherwise noted)

Parameter	symbol	FE8A60	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	600	V
Maximum RMS voltage	V_{RMS}	420	V
Maximum DC blocking voltage	V_{DC}	600	V
Forward rectified current	Io	8.0	A
Peak forward surge current 8.3ms single half sine-wave	I_{FSM}	100	A
Typical Diode junction capacitance f=1MHz and applied 4V DC reverse voltage	C_J	50	pF
Operating junction temperature range	T_J	–55 to +150	°C
Storage temperature range	T_{STG}	–55 to +150	°C

Electrical Characteristics (AT T_A=25°C unless otherwise noted)

Parameter	symbol	FE8A60	Unit
Maximum instantaneous forward voltage @ I_F=8.0A	V_F	2.0	V
Maximum DC reverse current T_J=25°C at Rated DC blocking voltage T_J=125°C	I_R	5 200	uA
Maximum Reverse recovery time test condition: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A	t_{rr}	20	ns

Rating and characteristic curves (FE8A60)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

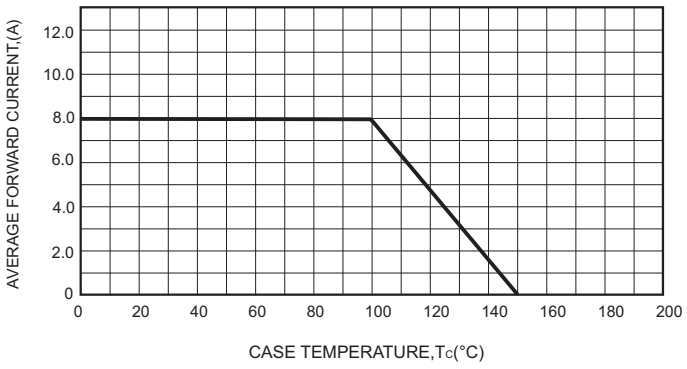


FIG.2-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

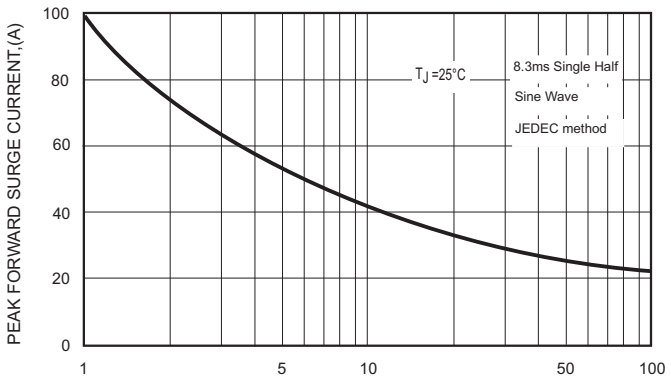


FIG.3-TYPICAL FORWARD CHARACTERISTICS

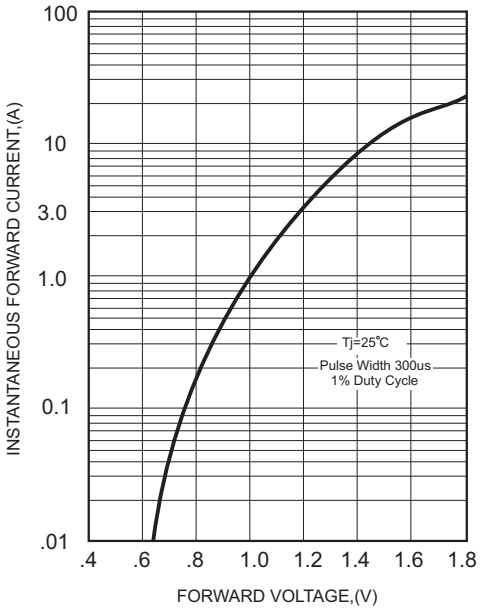


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

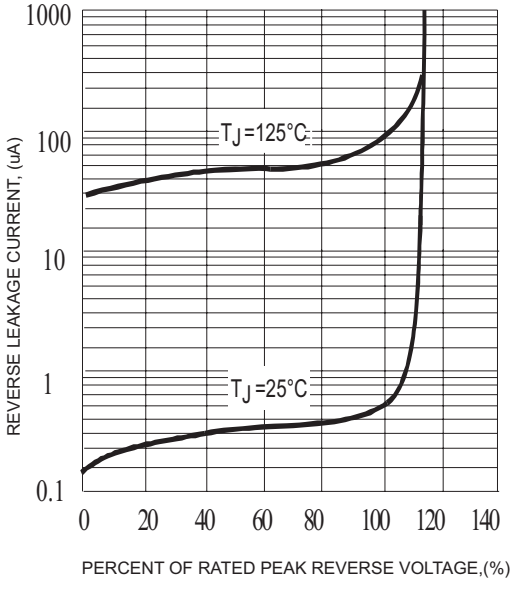
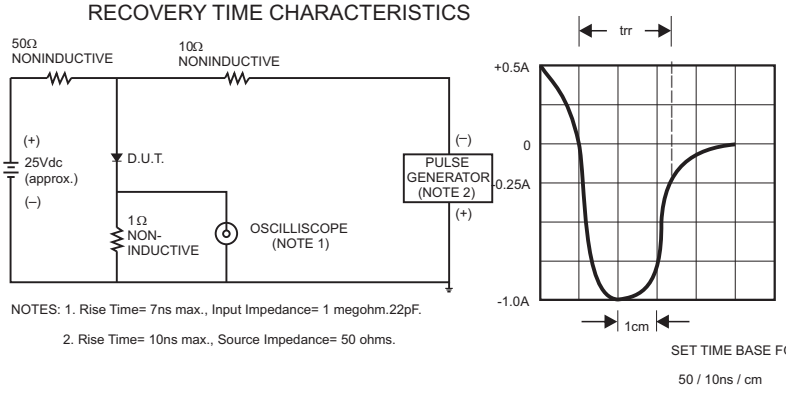


FIG.5- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS

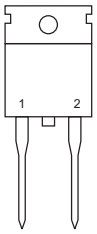
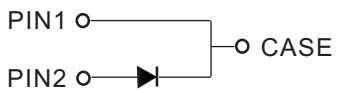


NOTES: 1. Rise Time= 7ns max., Input Impedance= 1 megohm.22pF.

2. Rise Time= 10ns max., Source Impedance= 50 ohms.

FE8A60

Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

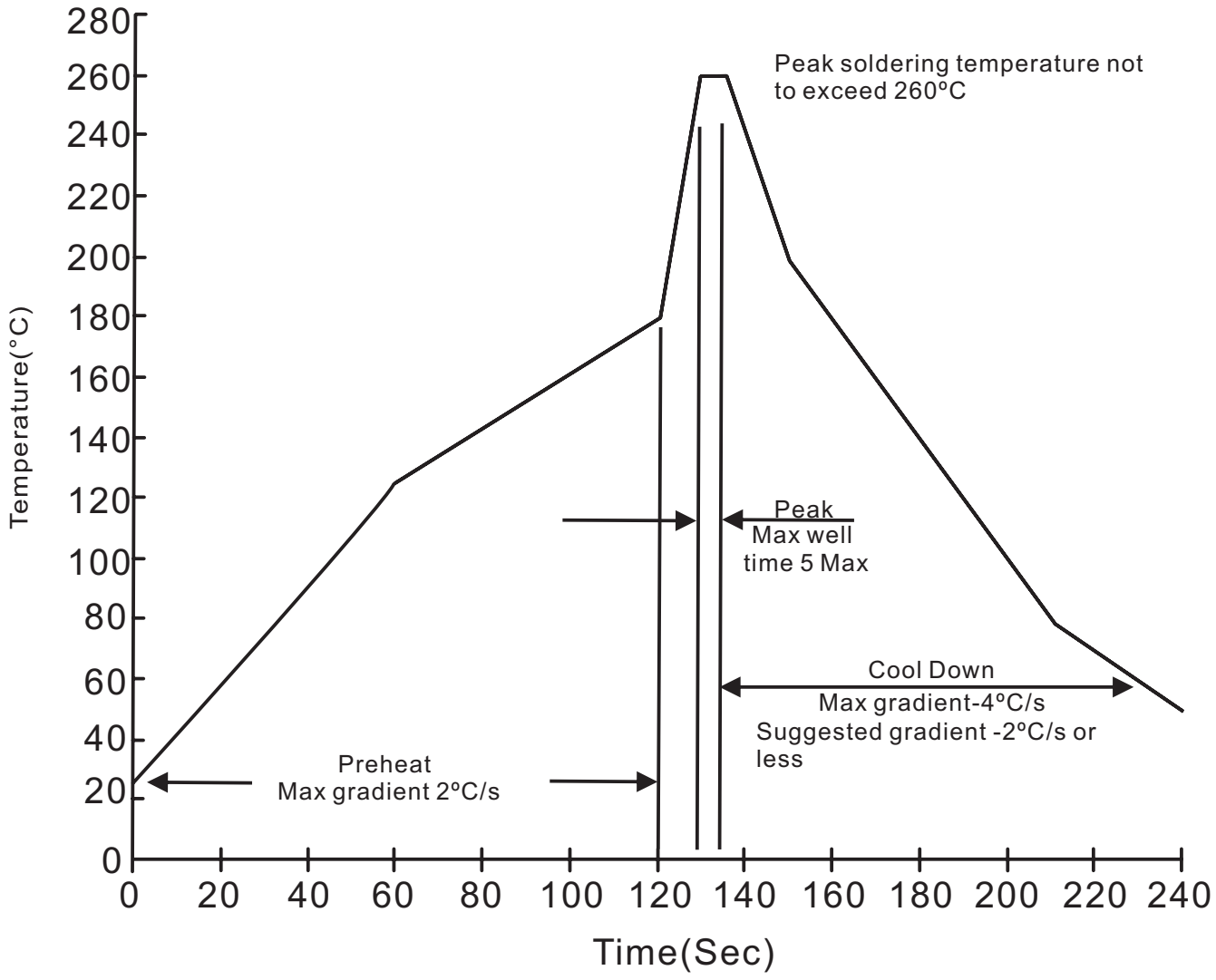
Type number	Marking code
FE8A60	FE8A60

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)
TO-220AC	50	525*32*7.5	1000	555*150*40	580*230*175	5,000	15.0

Suggested thermal profiles for soldering processes

1.Lead free temperature profile wave-soldering



FE8A60

High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at 260±5°C for 10±2sec. immerse body into solder 1/16"±1/32"	MIL-STD-750D METHOD-2031
2. Solderability	at 245±5°C for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	V_R=80% rate at T_J=150°C for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at T_A=25°C for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	T_A = 25°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°C for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to +125°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°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