SF8A05C Thru SF8A60C

List

SF8A05C Thru SF8A60C

8.0Amp Super Fast Recovery Rectifiers

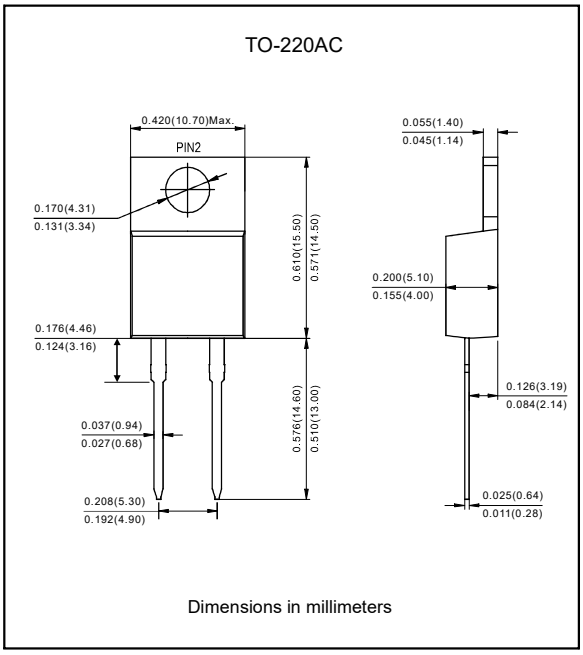
Features

- The plastic package carries underwriters laboratory flame ability classification 94V-0.
- Construction utilizes void-free molded plastic technique.
- Low reverse leakage.
- High forward surge current capability.
- High temperature soldering guaranteed 250℃/10 seconds at terminals.
- Lead free in compliance with EU RoHS 2011/65/EU directive.
- Suffix "-H" indicates Halogen-free parts, ex. SF8A05C-H.

Mechanical data

- Case : JEDEC TO-220AC molded plastic body over passivated chip.
- Leads : Solder able per MIL-STD-202, Method 208 .
- Terminals : Puretin plated.
- Polarity : Polarity symbol marking on body.
- Mounting torque : 5 in-lbs maximum.
- Weight : TO-220AC Approximated 1.85 gram

Package outline



Maximum ratings and electrical characteristics (At T_A=25°C unless otherwise noted)

Rating at 25℃ ambnet temperature unless otherwise specified.
single phase half-wave 60Hz, resistive of inductive load, for capacitive load current derate by 20%.

Parameter	Symbol	SF8A05C	SF8A10C	SF8A20C	SF8A40C	SF8A50C	SF8A60C	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	500	600	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	350	420	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	500	600	V
Maximum average forward rectified current (T_C=100℃)	$I_{(AV)}$	8.0						A
Peak forward surge current 8.3ms single half sine wave superimposed on rated load (JEDEC Method)	I_{FSM}	125.0						A
Maximum instantaneous forward voltage at 8.0A	V_F	1.0			1.3	1.7		V
Maximum DC reverse current (T_A=25℃)	I_R	10						μA
At rated DC blocking voltage (T_A=125℃)		500						
Maximum reverse recovery time	t_{rr}	35						ns
Typical thermal resistance	$R_{\theta JA}$	35.0						℃/W
Operating junction temperature range	T_J	+150						℃
Storage temperature range	T_{STG}	-55 to +150						℃

Note :

1. Reverse recovery condition I_F=0.5A, I_R=1.0A, I_{rr}=0.25A.

Rating and characteristic curves (SF8A05C Thru SF8A60C)

FIG. 1- DERATING CURVE OUTPUT RECTIFIED CURRENT

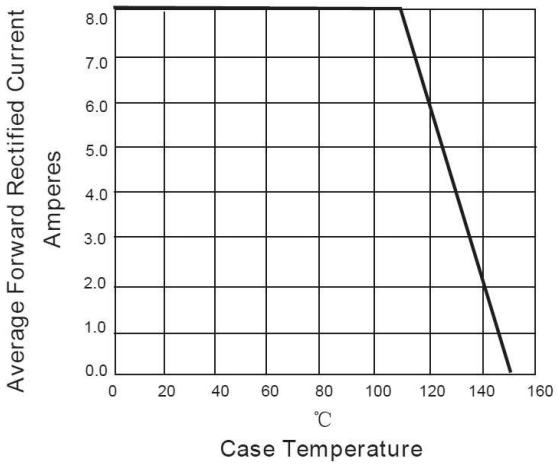


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PERLEG

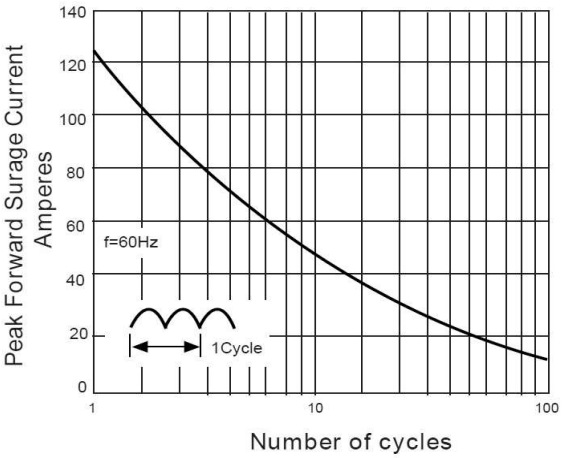


FIG. 3-TYPICAL FORWARD VOLTAGE CHARACTERISTICS

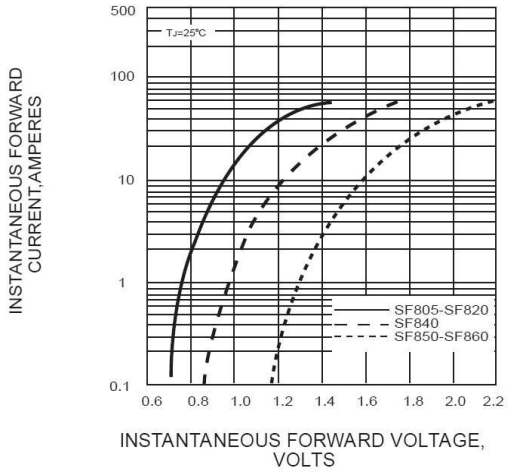
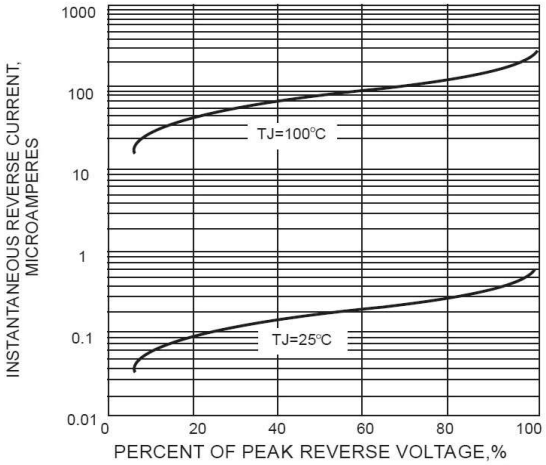


FIG. 4-TYPICAL REVERSE LEAKAGE CHARACTERISTICS



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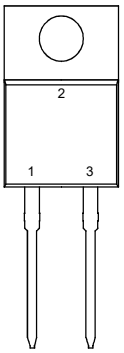
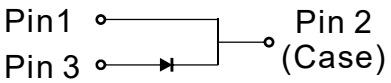
Pinning information

Pin	Simplified outline	Symbol
Pin1 Cathode Pin2 Cathode (Case) Pin3 Anode		

Marking

Type Number	Marking Code
SF8A05C	SF805
SF8A10C	SF810
SF8A20C	SF820
SF8A40C	SF840
SF8A50C	SF850
SF8A60C	SF860

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*31.9*6.4	1000	545*150*45	575*245*170	5,000	15.0

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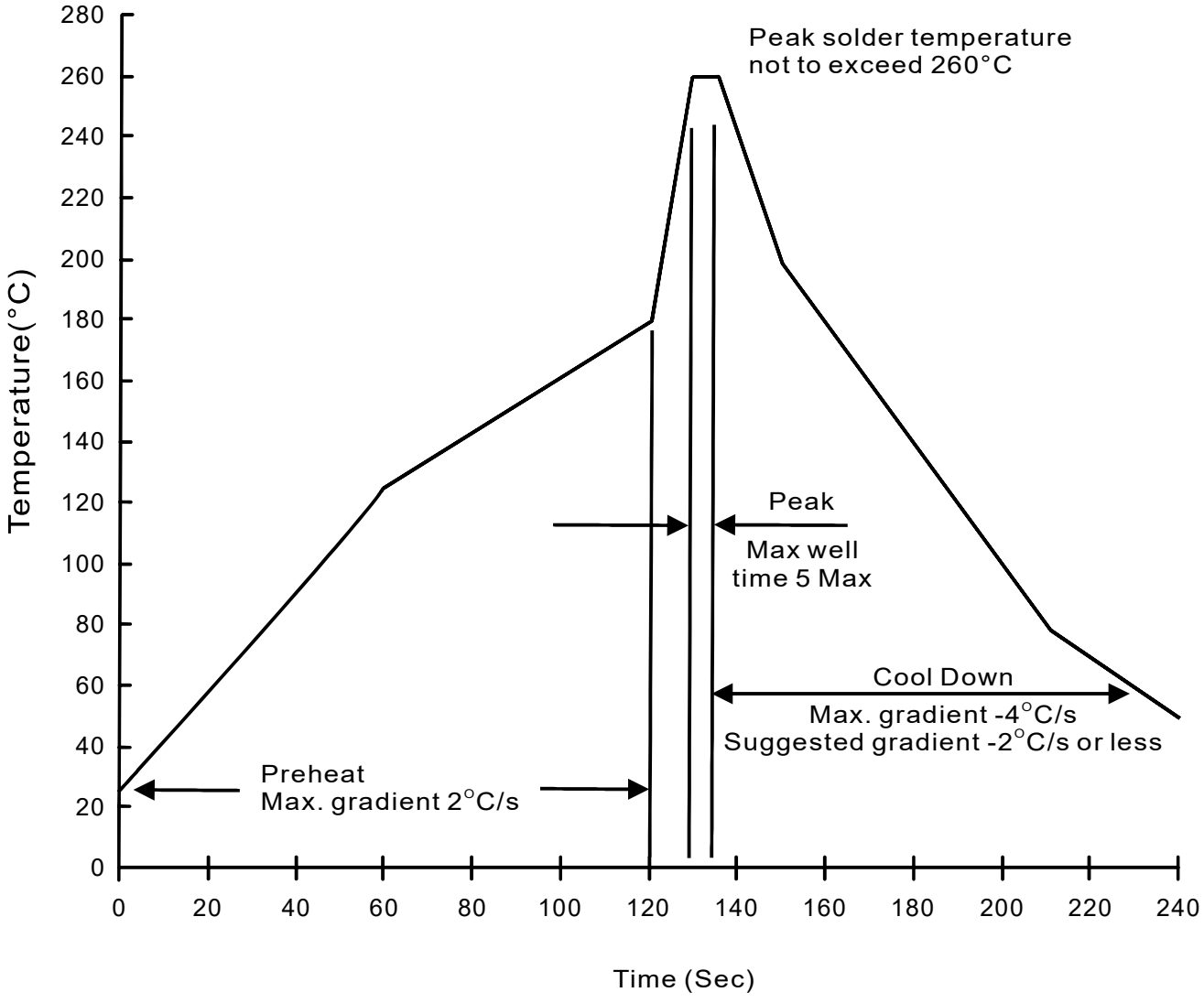
Suggested thermal profiles for soldering processes

1.Lead free temperature profile wave-soldering



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High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at 260±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