

SF30A60PYW

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SF30A60PYW

30A FRED Super Fast Recovery Rectifier : 600V

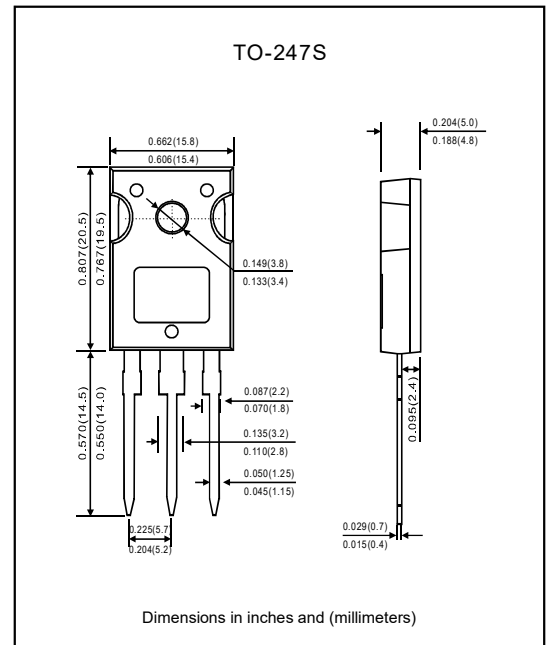
Features

- Construction utilizes void-free molded plastic technique.
- Low reverse leakage.
- High forward surge current capability.
- High temperature soldering guaranteed 260°C/10s at terminals.
- Lead free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen-free parts, ex. SF30A60PYW-H.

Mechanical data

- Epoxy : UL94-V0 rated flame retardant.
- Case : Molded plastic body : TO-247S.
- Terminals : Solder plated, solder able per MIL-STD-750, Method 2026.
- Polarity : Indicated by cathode band.
- Mounting Position : Any.

Package outline



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

Parameter	Symbol	Ratings	Unit
Repetitive peak reverse voltage	V_{RRM}	600	V
RMS voltage	V_{RMS}	420	V
DC blocking voltage	V_{DC}	600	V
Maximum average forward rectified current ($T_A = 100^\circ\text{C}$)	$I_{(AV)}$	30	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	300	A
Typical thermal resistance	$R_{\theta JC}$	1.5	$^\circ\text{C/W}$
Operating junction temperature	T_J	+150	$^\circ\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^\circ\text{C}$

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

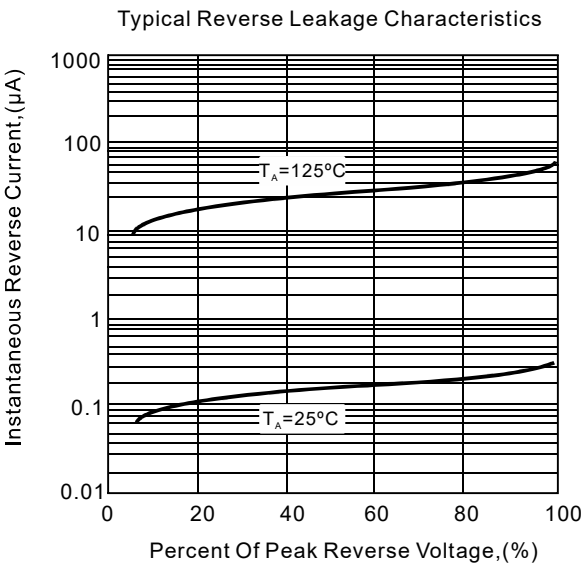
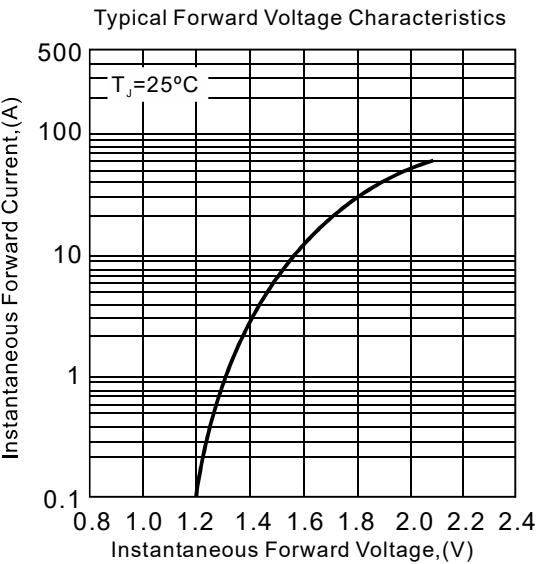
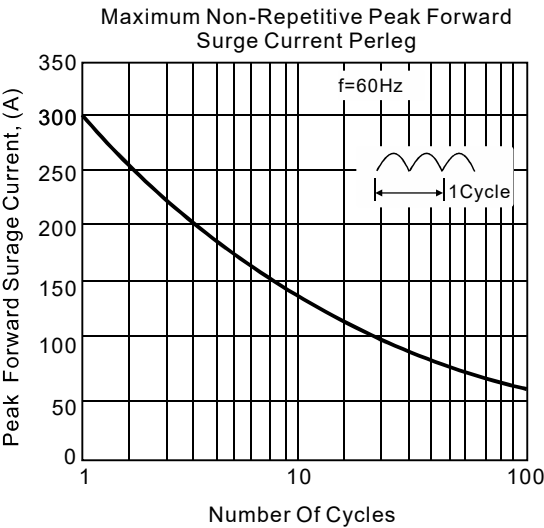
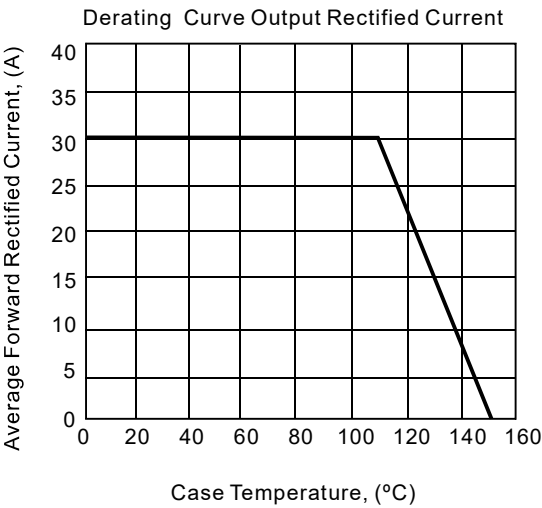
Parameter	Symbol	Min.	Typ.	Max.	Unit
Maximum instantaneous forward voltage per diode at 30A	V_F		1.8	2.5	V
Maximum DC reverse current ($T_A = 25^\circ\text{C}$)	I_R		0.5	5	μA
at rated DC blocking voltage ($T_A = 125^\circ\text{C}$)			50	200	
Maximum reverse recovery time	T_{rr}		26	35	ns

Note :

1.Reverse recovery time test condition: $I_F = 0.5\text{A}$, $I_R = 1.0\text{A}$, $I_{rr} = 0.25\text{A}$.

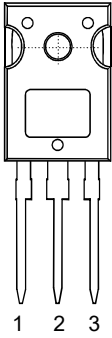
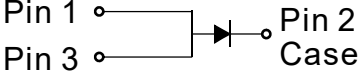
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Rating and characteristic curves



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Pinning information

Pin	Simplified outline	Symbol
Pin 1 Anode Pin 2 Cathode Pin 3 Anode		

Marking

Type number	Marking code
SF30A60PYW	ER3060YT

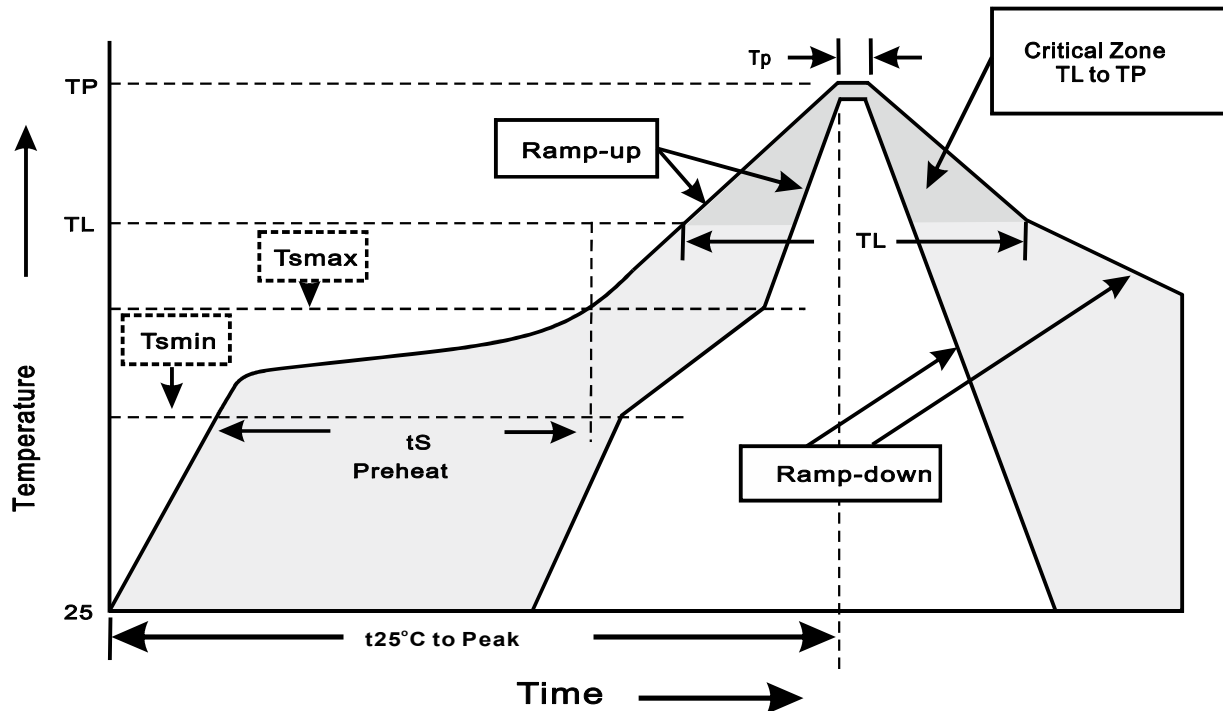
Tube packing

Package	Tube (mm)	Q'Ty/Tube (Kpcs)	Box Size (mm)	QTY/Box (Kpcs)	Carton Size (mm)	Q'TY/Carton (Kpcs)
TO-247S	510 x 45.5 x 7.8	0.03	545 x 150 x 45	0.45	570 x 260 x 150	2.25

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Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T_L to T_P)	$<3^\circ\text{C/sec}$
Preheat -Temperature Min(T_{smin}) -Temperature Max(T_{smax}) -Time(min to max)(t_s)	150°C 200°C 60~120sec
T_{smax} to T_L -Ramp-upRate	$<3^\circ\text{C/sec}$
Time maintained above: -Temperature(T_L) -Time(t_L)	217°C 60~260sec
Peak Temperature(T_P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t_P)	10~30sec
Ramp-down Rate	$<6^\circ\text{C/sec}$
Time 25°C to Peak Temperature	$<6\text{minutes}$