FUXINSEMI
INNOVATOR IN SEMICONDUCTOR

STTH1L06A

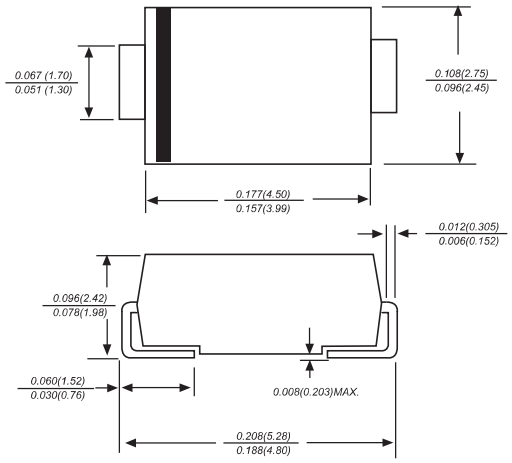
1.0A Surface Mount Ultra Fast Rectifiers -600V

Features

- Ideal for surface mounted application
- Low profile surface mounted application in order to optimize board space
- Bulit-in strain relief design
- Ultra fast recovery time for high efficient
- Glass passivated chip junction
- Lead-free parts meet RoHS requirements
- Compliant to Halogen-free

Package outline

SMA/DO-214AC



Dimensions in inches and (millimeters)

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SMA(DO-214AC)
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any

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

PARAMETER	SYMBOLS	STTH1L06A	UNITS
Maximum repetitive peak reverse voltage	V_{RRM}	600	V
Maximum RMS voltage	V_{RMS}	420	V
Maximum continuous reverse voltage	V_R	600	V
Maximum average forward rectified current	I_O	1.0	A
Non-repetitive peak forward surge current 8.3ms single half sine-wave	I_{FSM}	35	A
Typical junction capacitance (Note 1)	C_J	15	pF
Operating junction temperature range	T_J	-55 to +175	°C
Storage temperature range	T_{STG}	-65 to +175	°C

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

PARAMETER	SYMBOLS	STTH1L06A	UNITS
Maximum instantaneous forward voltage at I_F=1.0A T_J=25 °C	V_F	1.25	V
Maximum instantaneous forward voltage at I_F=1.0A T_J=150 °C	V_F	1.05	V
Maximum reverse leakage current at rated V_R T_J=25 °C T_J=125 °C	I_R	1.0 150	μA
Maximum reverse recovery time, (Note 2)	t_{rr}	50	ns

Thermal characteristics

PARAMETER	SYMBOLS	STTH1L06A	UNITS
Typical thermal resistance junction to ambient , (Note 3) Typical thermal resistance junction to case , (Note 3)	$R_{\theta JA}$ $R_{\theta JC}$	25 15	°C / W °C / W

Notes 1: Measured at 1 MHz and applied reverse voltage of 4.0 VDC
2: Measured with IF = 0.5 A, IR = 1 A, Irr = 0.25 A
3: Mounted on FR-4 PCB Copper, minimum recommended pad layout

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Rating and characteristic curves

FIG.1-TYPICAL FORWARD CHARACTERISTICS

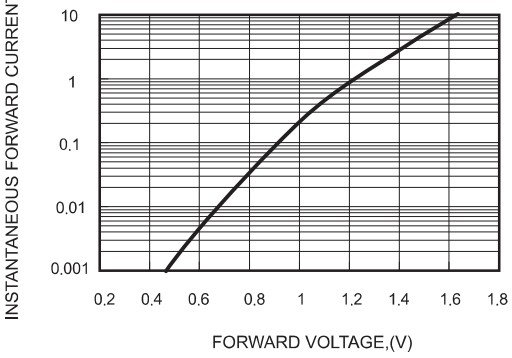


FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE

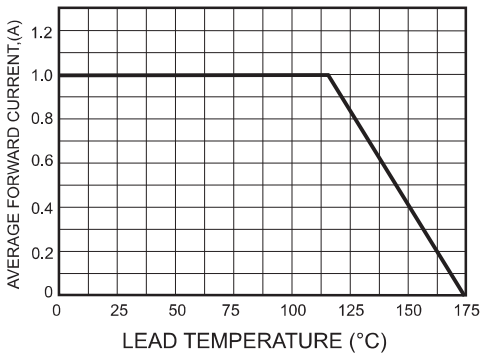
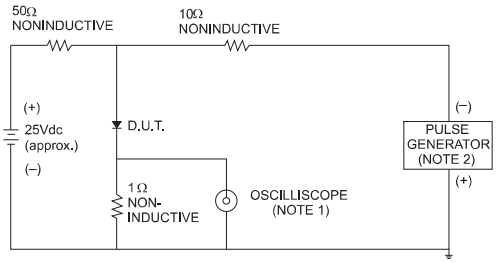


FIG.3- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



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

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

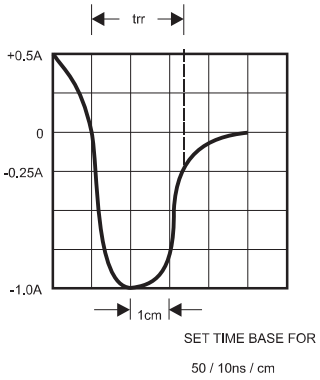


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

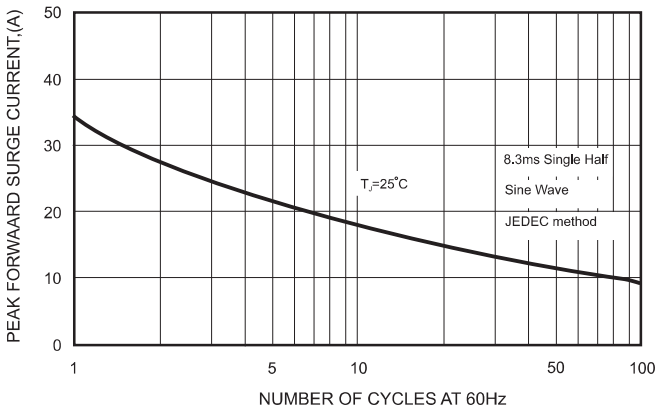
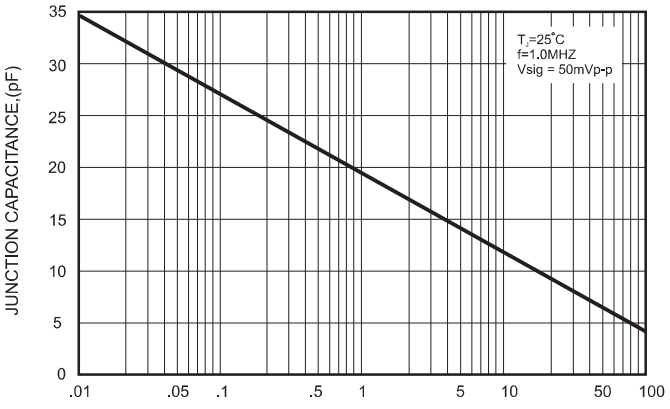


FIG.5-TYPICAL JUNCTION CAPACITANCE



Pinning information

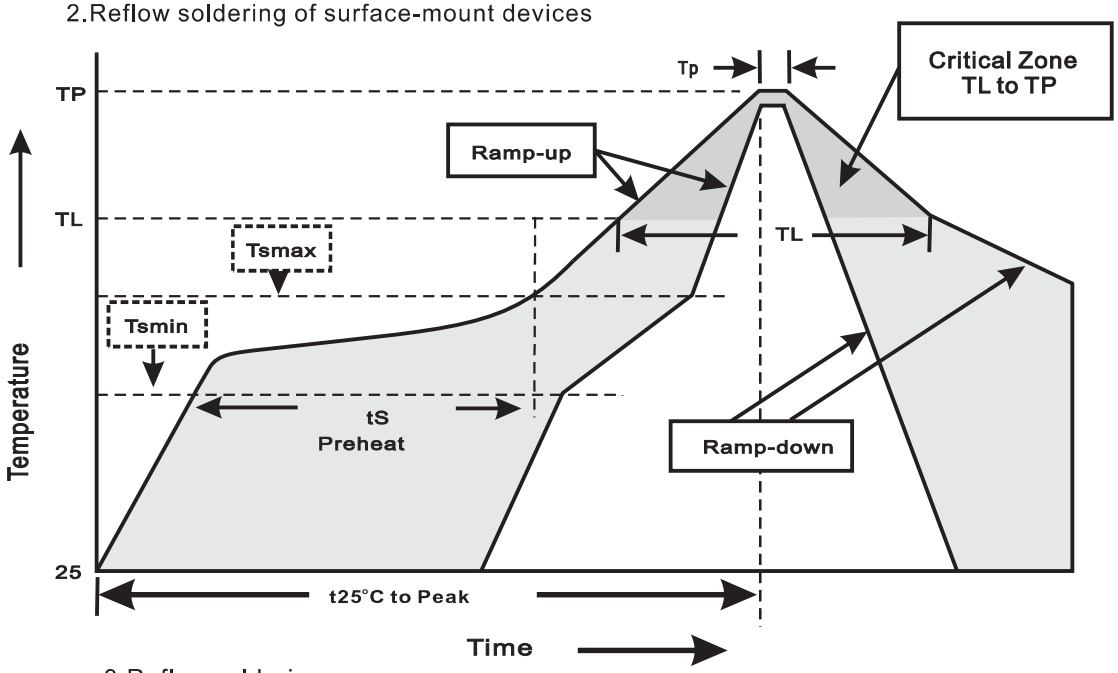
Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
STTH1L06A	HL6

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°C/sec
Preheat -Temperature Min(Tsmin) -Temperature Max(Tsmax) -Time(min to max)(t_s)	 150°C 200°C 60~120sec
Tsmax to T_L -Ramp-upRate	 <3°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°C/sec
Time 25°C to Peak Temperature	<6minutes