



# HST08

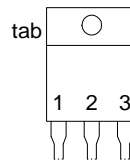
TRIAC 600V,8A

## Description

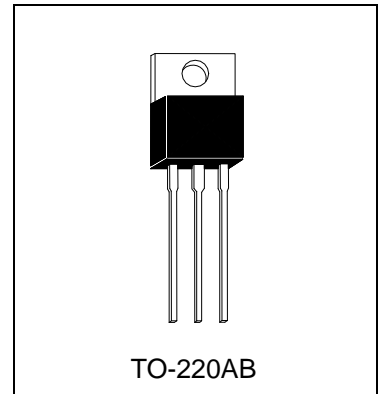
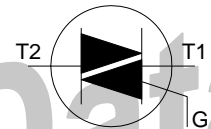
Passivated, sensitive gate triacs in a plastic envelope, intended for use in general purpose bidirectional switching and phase control applications, where high sensitivity is required in all four quadrants.

## Pin Configuration

Pin	Description
1	Main terminal 1
2	Main terminal 2
3	Gate
tab	Main terminal 2



Symbol



TO-220AB

## Limiting Values

Symbol	Parameter	Min.	Max.	Units
$V_{DRM}$	Repetitive peak off-state voltages	-	600	V
$I_{T(RMS)}$	RMS on-state current	-	8	A
$I_{TSM}$	Non-repetitive peak on-state current(F=50Hz, tp=20ms)	-	80	A
$I^2t$	$I^2t$ for fusing (IT=10ms)	-	36	A <sup>2</sup> S
$di_T/dt$	Repetitive rate of rise of on-state current after triggering (F=50Hz, IG=50mA, dI <sub>g</sub> /dt=0.1us)	-	50	A/us
$I_{GM}$	Peak gate current(tp=20us, T <sub>j</sub> =125°C)	-	4	A
$P_{GM}$	Peak gate power(tp=20us, T <sub>j</sub> =125°C)	-	10	W
$P_{G(AV)}$	Average gate power (T <sub>j</sub> =125°C)	-	1	W
Tstg	Storage Temperature Range	-40	150	°C
T <sub>j</sub>	Operating junction temperature	-40	125	°C



### Electrical Characteristics (Ta=25°C, unless otherwise stated,)

Symbol	Parameter	Quadrant	Rank min		Rank max		Unit
			C	B	C	B	
I <sub>GT</sub>	Gate Trigger Current (V <sub>D</sub> =12V)	I - II - III			25	50	mA
		IV			50	100	mA
I <sub>L</sub>	Latching Current (I <sub>T</sub> =1.2 I <sub>GT</sub> , T <sub>j</sub> =25°C)	I - III- IV			40	50	mA
		II			80	100	mA
I <sub>H</sub>	Holding Current(I <sub>T</sub> =0.1A,)	ALL			25	50	mA
V <sub>TM</sub>	On-state Voltage (I <sub>T</sub> =8.5A,)				1.55		V
V <sub>GT</sub>	Gate Trigger Voltage (V <sub>D</sub> =12V, T <sub>j</sub> =25°C)				1.5		V
I <sub>D</sub>	Off-state Leakage Current T <sub>C</sub> =25°C (V <sub>D</sub> = V <sub>DRM</sub> (max)) T <sub>C</sub> =125°C				10		uA
					1		mA
dV <sub>D</sub> /dt	Critical rate of rise of off-state voltage V <sub>DM</sub> =400VT <sub>j</sub> = 125°C; exponential waveform; gate open circuit		200	400			V/us

### Thermal Resistances

Symbol	Parameter	Min.	Typ	Max.	Unit
R <sub>th j-c</sub>	Thermal resistance junction to mounting base		1.6		°C/W



### TO-220AB Dimension

3-Lead TO-220AB  
 Plastic Package  
 HSMC Package Code: E

**Marking:**

Pb Free Mark  
 Pb-Free: "●" (Note)  
 Normal: None

**Note:** Green label is used for pb-free packing

**Pin Style:** 1. Main terminal 1  
 2 & Tab. Main terminal 2  
 3. Gate

**Material:**

- Lead solder plating: Sn60/Pb40 (Normal), Sn/3.0Ag/0.5Cu or Pure-Tin (Pb-free)
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

DIM	Min.	Max.
A	5.58	7.49
B	8.38	8.90
C	4.40	4.70
D	1.15	1.39
E	0.35	0.60
F	2.03	2.92
G	9.66	10.28
H	-	*16.25
I	-	*3.83
J	3.00	4.00
K	0.75	0.95
L	2.54	3.42
M	1.14	1.40
N	-	*2.54
O	12.70	14.27
P	14.48	15.87

\*: Typical, Unit: mm

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**Head Office And Factory:**

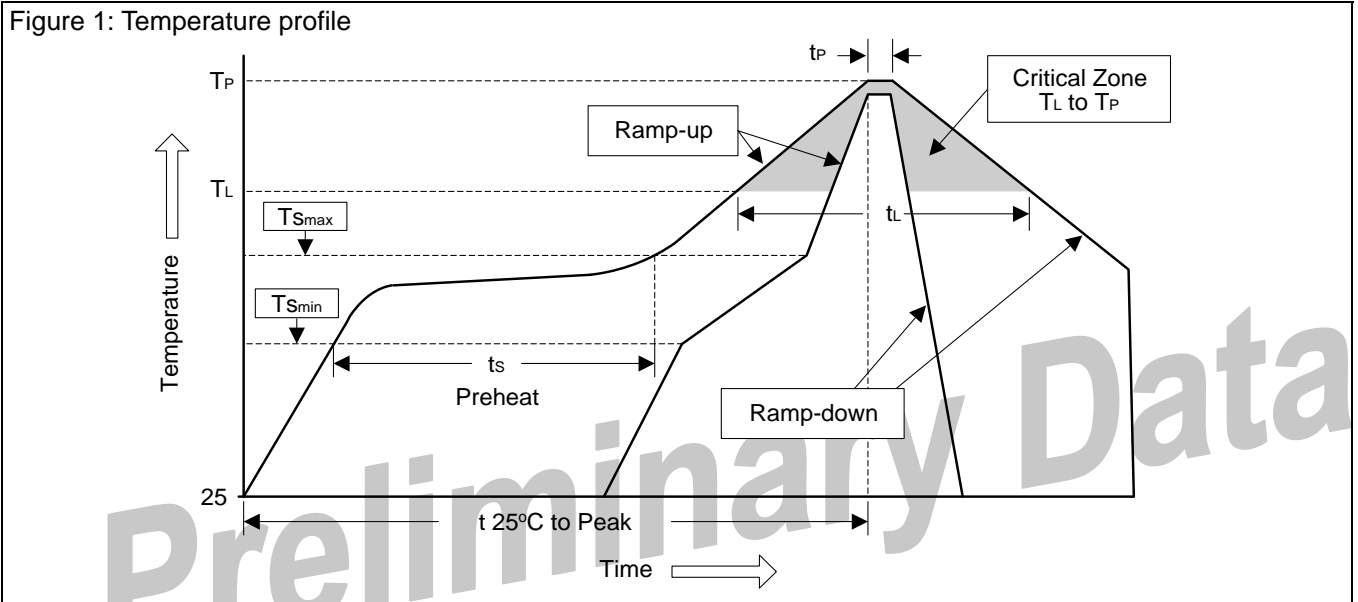
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## Soldering Methods for HSMC's Products

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

Figure 1: Temperature profile



Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average ramp-up rate ( $T_L$ to $T_P$ )	<3°C/sec	<3°C/sec
Preheat		
- Temperature Min ( $T_{Smin}$ )	100°C	150°C
- Temperature Max ( $T_{Smax}$ )	150°C	200°C
- Time (min to max) ( $t_s$ )	60~120 sec	60~180 sec
$T_{Smax}$ to $T_L$		
- Ramp-up Rate	<3°C/sec	<3°C/sec
Time maintained above:		
- Temperature ( $T_L$ )	183°C	217°C
- Time ( $t_L$ )	60~150 sec	60~150 sec
Peak Temperature ( $T_P$ )	240°C +0/-5°C	260°C +0/-5°C
Time within 5°C of actual Peak Temperature ( $t_P$ )	10~30 sec	20~40 sec
Ramp-down Rate	<6°C/sec	<6°C/sec
Time 25°C to Peak Temperature	<6 minutes	<8 minutes

3. Flow (wave) soldering (solder dipping)

Products	Peak temperature	Dipping time
Pb devices.	245°C ±5°C	5sec ±1sec
Pb-Free devices.	260°C +0/-5°C	5sec ±1sec