



HST08

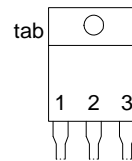
TRIAC 600V,8A

Description

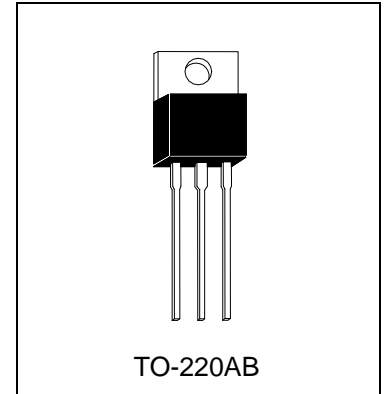
Passivated, sensitive gate triacs in a plastic envelope, intended for use in general purpose bidirectional switching and phase control applications, where high sensitivity is required in all four quadrants.

Pin Configuration

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



Symbol



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 ² S |
| di_T/dt | Repetitive rate of rise of on-state current after triggering (F=50Hz, IG=50mA, dI _g /dt=0.1us) | - | 50 | A/us |
| I_{GM} | Peak gate current(tp=20us, T _j =125°C) | - | 4 | A |
| P_{GM} | Peak gate power(tp=20us, T _j =125°C) | - | 10 | W |
| $P_{G(AV)}$ | Average gate power (T _j =125°C) | - | 1 | W |
| Tstg | Storage Temperature Range | -40 | 150 | °C |
| T _j | 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 _{GT} | Gate Trigger Current (V _D =12V) | I - II - III | | | 25 | 50 | mA |
| | | IV | | | 50 | 100 | mA |
| I _L | Latching Current (I _T =1.2 I _{GT} , T _j =25°C) | I - III- IV | | | 40 | 50 | mA |
| | | II | | | 80 | 100 | mA |
| I _H | Holding Current(I _T =0.1A,) | ALL | | | 25 | 50 | mA |
| V _{TM} | On-state Voltage (I _T =8.5A,) | | | | 1.55 | | V |
| V _{GT} | Gate Trigger Voltage (V _D =12V, T _j =25°C) | | | | 1.5 | | V |
| I _D | Off-state Leakage Current T _C =25°C (V _D = V _{DRM} (max)) T _C =125°C | | | | 10 | | uA |
| | | | | | 1 | | mA |
| dV _D /dt | Critical rate of rise of off-state voltage V _{DM} =400VT _j = 125°C; exponential waveform; gate open circuit | | 200 | 400 | | | V/us |

Thermal Resistances

| Symbol | Parameter | Min. | Typ | Max. | Unit |
|---------------------|--|------|-----|------|------|
| R _{th j-c} | 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

Date Code Rank Code Control Code

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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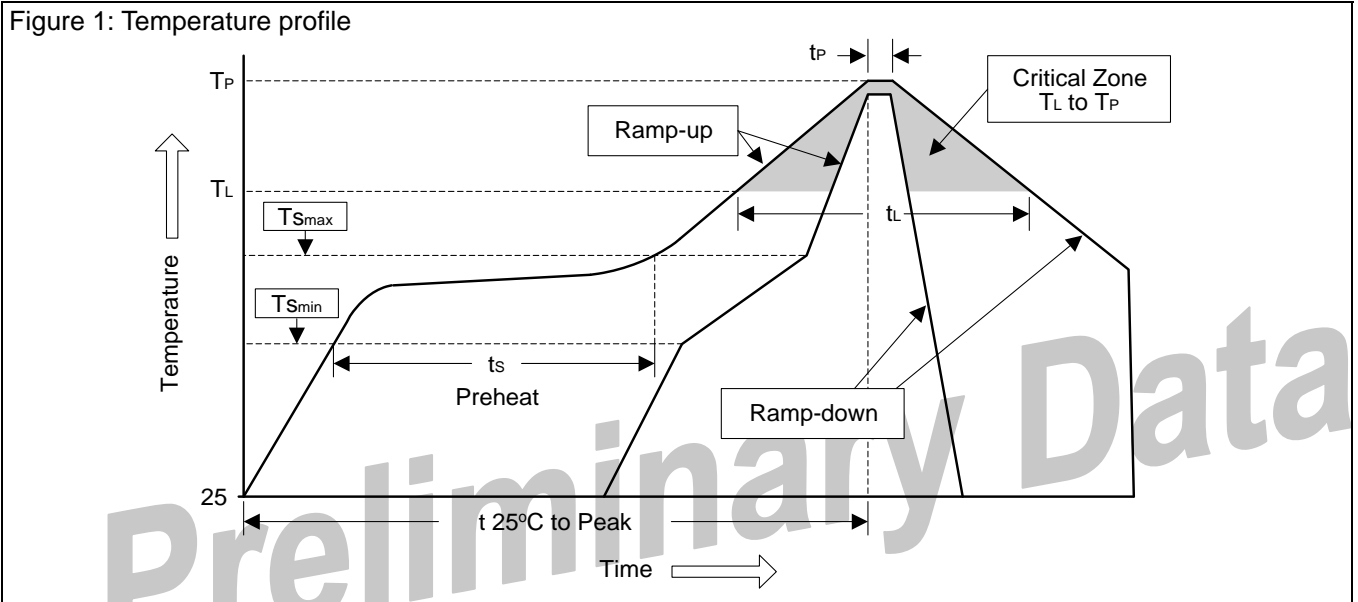
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Soldering Methods for HSMC's Products

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) (ts) | 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 |