



HST12

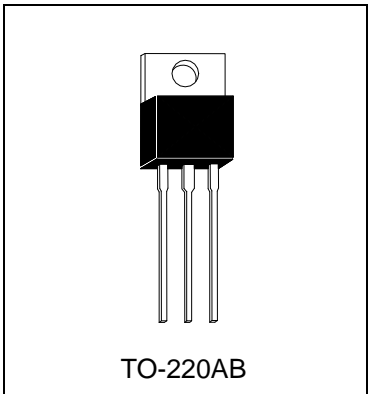
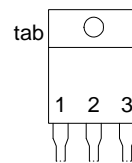
TRIAC 600V,12A

Description

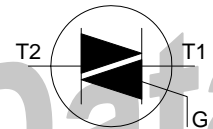
Passivated, sensitive gate triacs in a plastic envelope, intended for use in general purpose bidirectional switching and phase control applications, where high sensitivity is required in all four quadrants.

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	-	12	A
I_{TSM}	Non-repetitive peak on-state current(F=50Hz, tp=20ms)	-	120	A
I^2t	I^2t for fusing (IT=10ms)	-	78	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
$P_{G(AV)}$	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)				1.3		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		1.4		°C/W



TO-220AB Dimension

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

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

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Head Office And Factory:

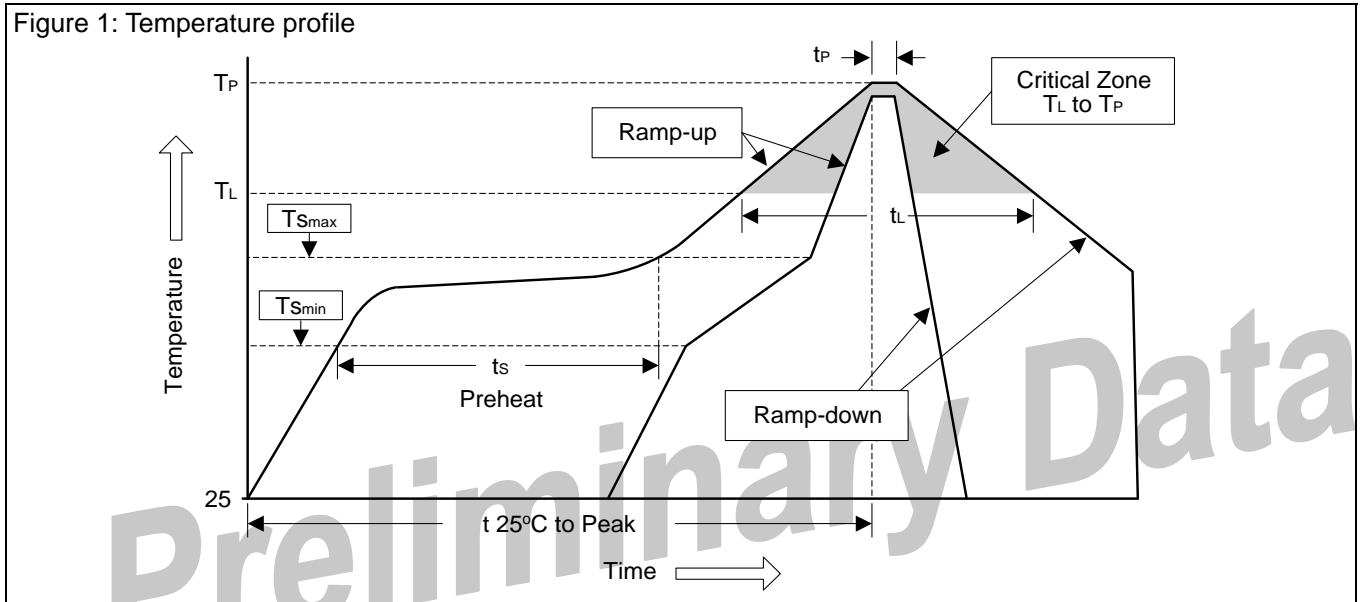
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Soldering Methods for HSMC's Products

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