

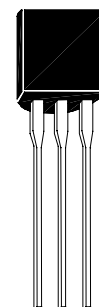


HSB772S

PNP EPITAXIAL PLANAR TRANSISTOR

Description

The HSB772S is designed for using in output stage of 0.75W amplifier, voltage regulator, DC-DC converter and driver.



TO-92

Absolute Maximum Ratings

- Maximum Temperatures
Storage Temperature..... -55 to +150 °C
Junction Temperature..... +150 °C Maximum
- Maximum Power Dissipation
Total Power Dissipation ($T_A=25^{\circ}\text{C}$)..... 750 mW
- Maximum Voltages and Currents ($T_A=25^{\circ}\text{C}$)
 V_{CBO} Collector to Base Voltage..... -40 V
 V_{CEO} Collector to Emitter Voltage..... -30 V
 V_{EBO} Emitter to Base Voltage..... -5 V
 I_C Collector Current -3 A

Electrical Characteristics ($T_A=25^{\circ}\text{C}$)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	-40	-	-	V	$I_C=-100\mu\text{A}$, $I_E=0$
BV_{CEO}	-30	-	-	V	$I_C=-1\text{mA}$, $I_B=0$
BV_{EBO}	-5	-	-	V	$I_E=-10\mu\text{A}$, $I_C=0$
I_{CBO}	-	-	-1	μA	$V_{CB}=-30\text{V}$, $I_E=0$
I_{EBO}	-	-	-1	μA	$V_{EB}=-3\text{V}$, $I_C=0$
$^*V_{CE(sat)}$	-	-	-0.5	V	$I_C=-2\text{A}$, $I_B=-0.2\text{A}$
$^*V_{BE(sat)}$	-	-1	-2	V	$I_C=-2\text{A}$, $I_B=-0.2\text{A}$
$^*h_{FE1}$	30	-	-		$V_{CE}=-2\text{V}$, $I_C=-20\text{mA}$
$^*h_{FE2}$	100	160	400		$V_{CE}=-2\text{V}$, $I_C=-1\text{A}$
f_T	-	80	-	MHz	$V_{CE}=-5\text{V}$, $I_C=-0.1\text{A}$, $f=100\text{MHz}$
Cob	-	55	-	pF	$V_{CB}=-10\text{V}$, $f=1\text{MHz}$

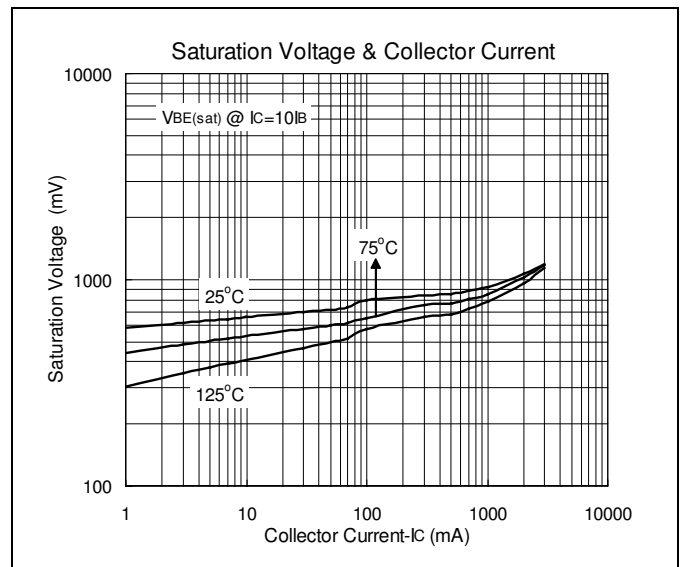
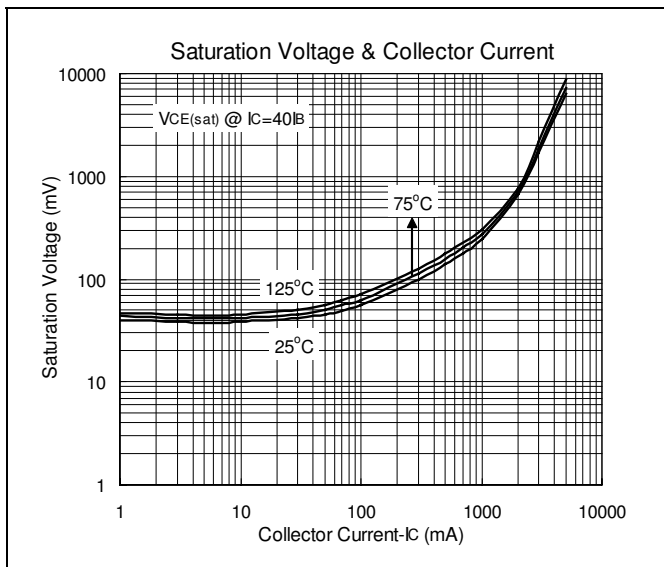
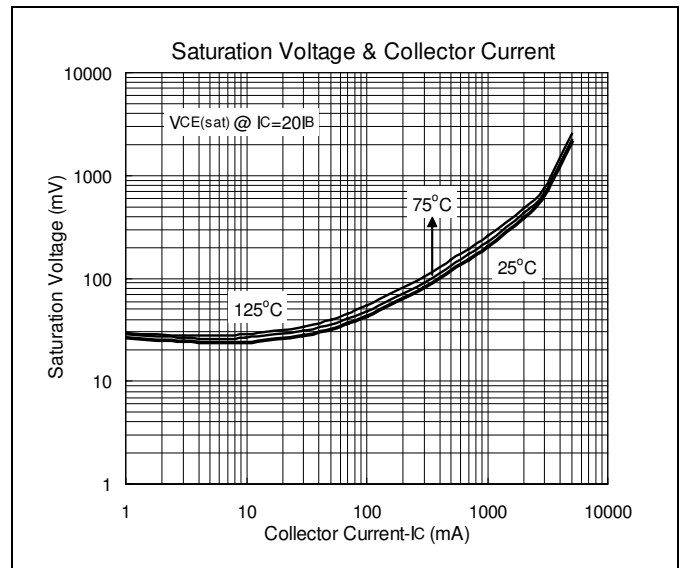
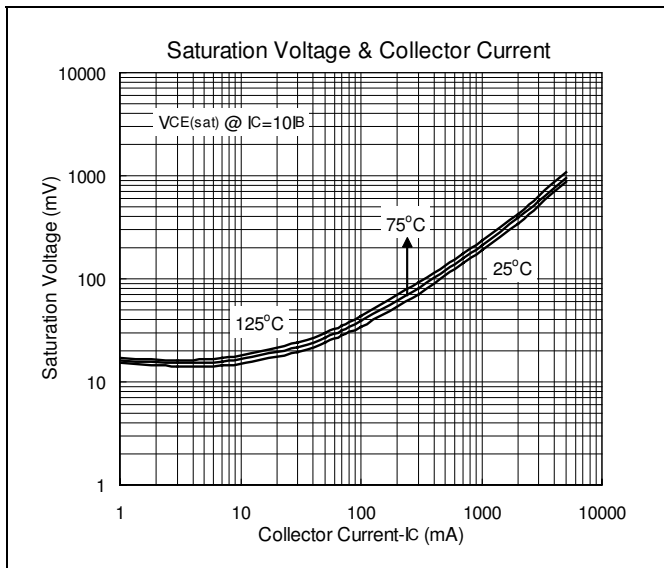
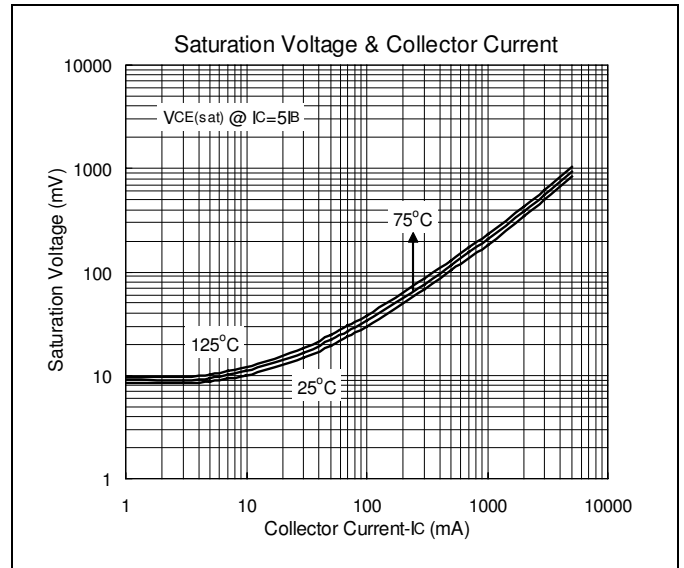
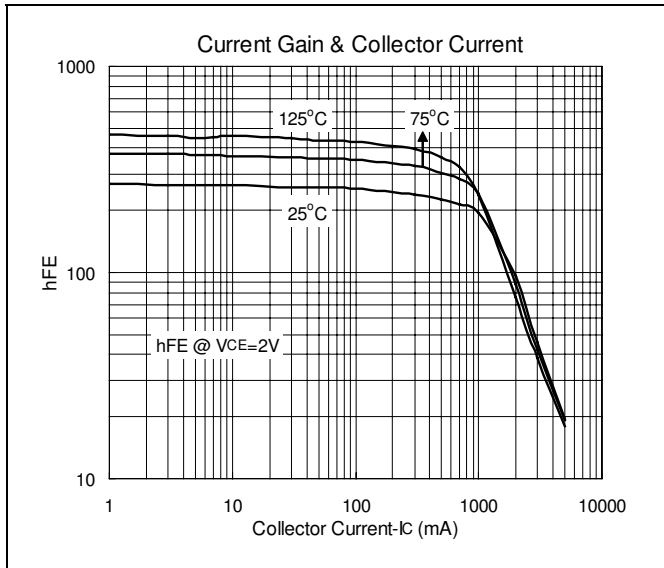
*Pulse Test: Pulse Width $\leq 380\mu\text{s}$, Duty Cycle $\leq 2\%$

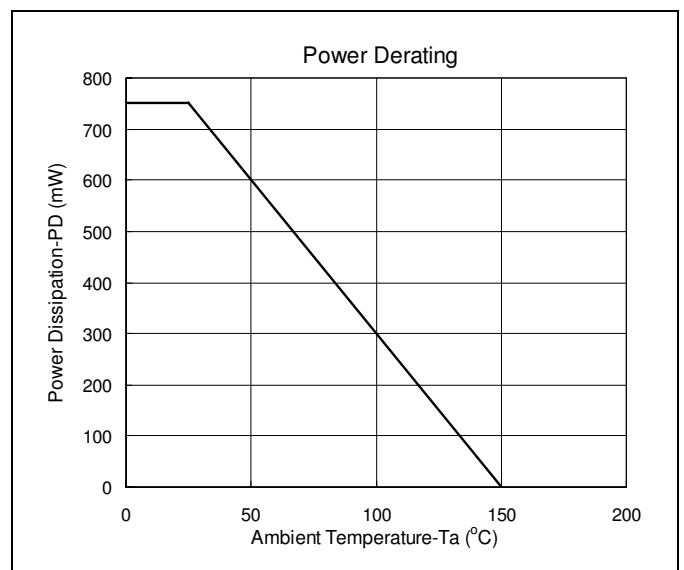
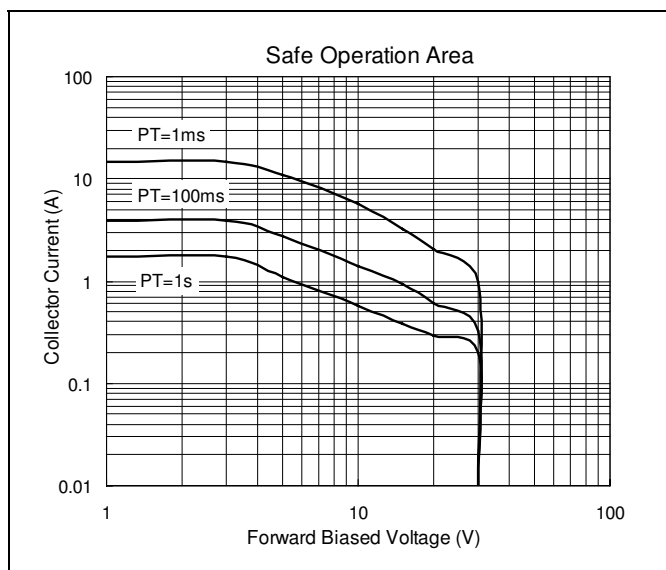
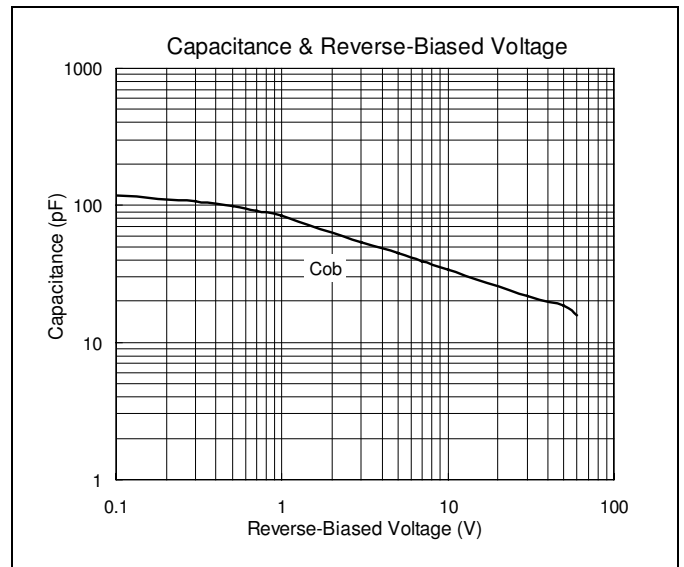
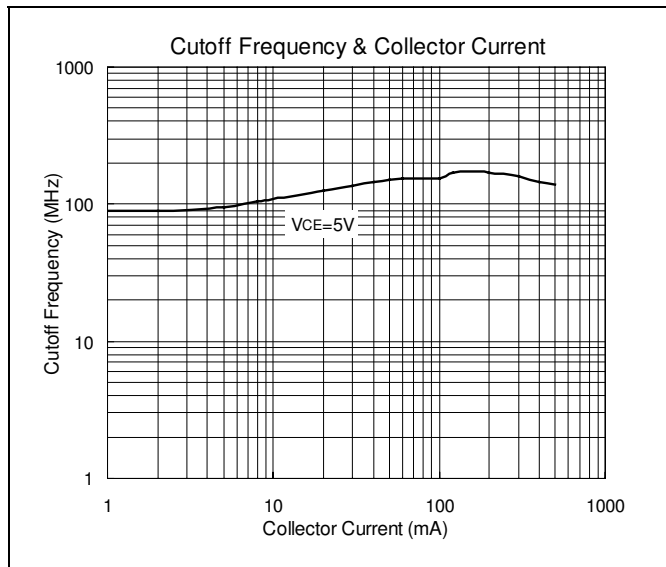
Classification Of h_{FE2}

Rank	Q	P	E
Range	100-200	160-320	200-400



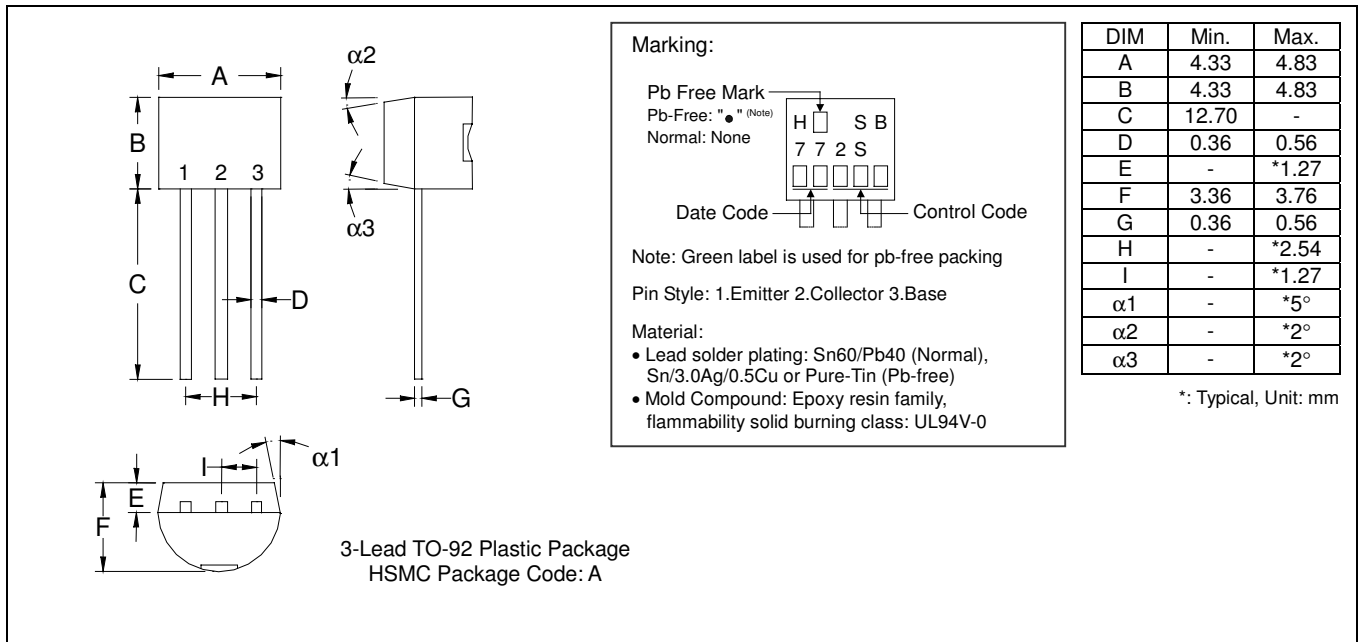
Characteristics Curve



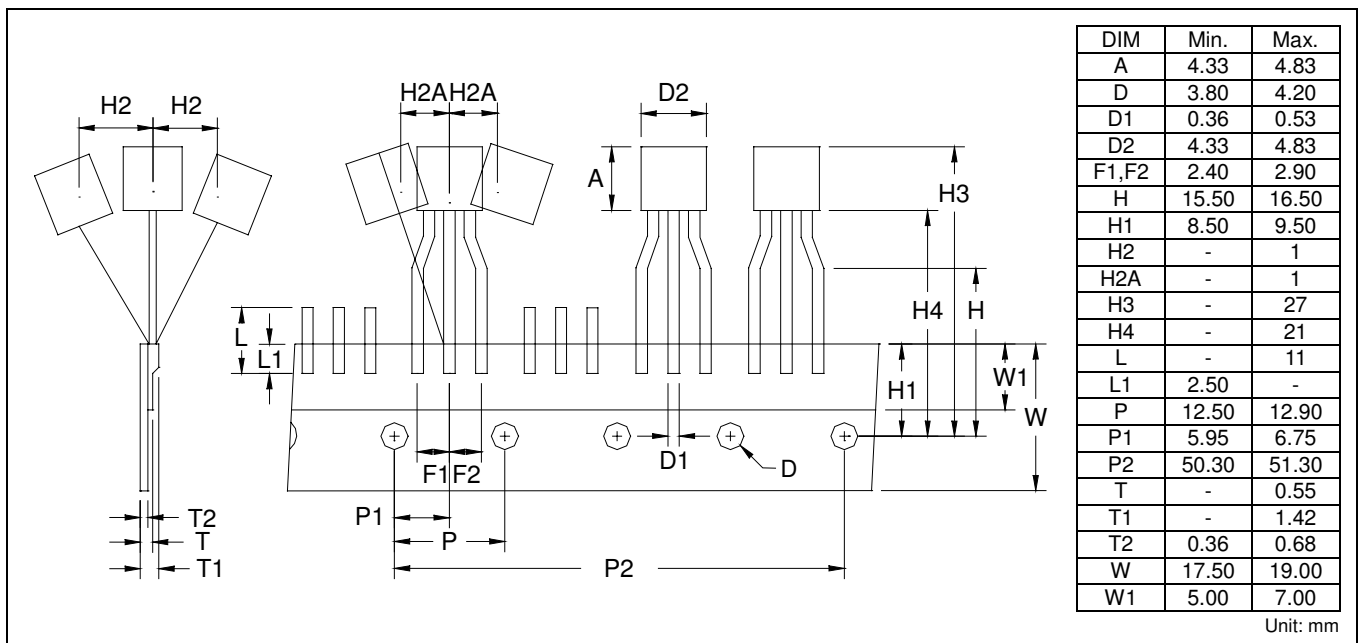




TO-92 Dimension



TO-92 Taping Dimension



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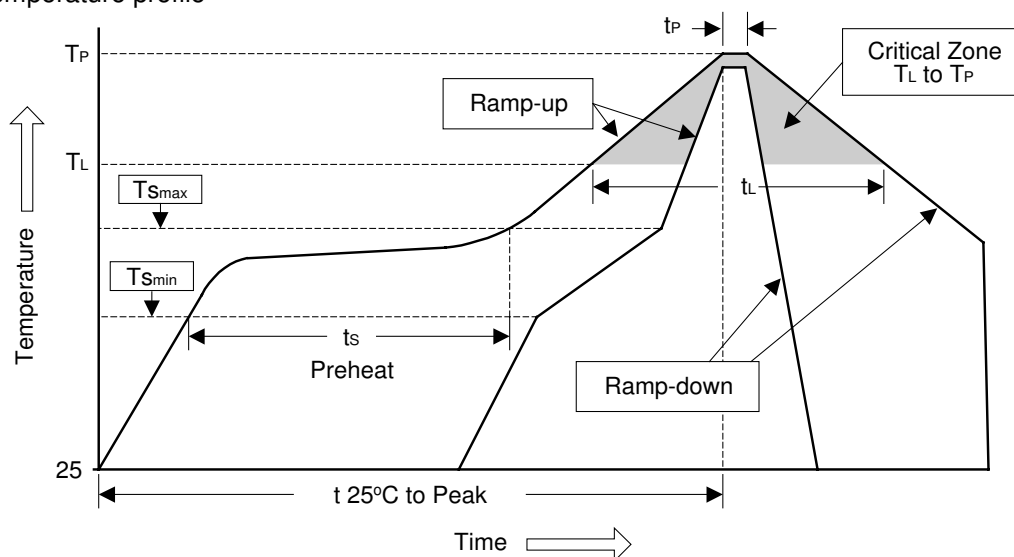


Soldering Methods for HSMC's Products

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