



HPN2222A

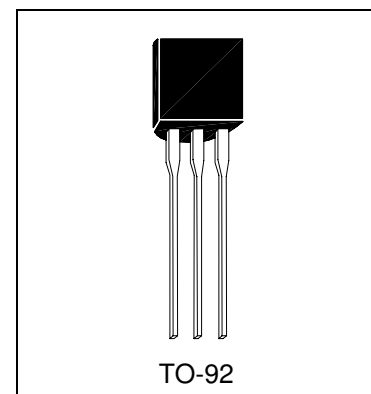
NPN EPITAXIAL PLANAR TRANSISTOR

Description

The HPN2222A is designed for general purpose amplifier and high speed, medium-power switching applications.

Features

- Low Collector Saturation Voltage
- High Speed Switching
- For Complementary Use with PNP Type HPN2907A



Absolute Maximum Ratings

- Maximum Temperatures
Storage Temperature -55 ~ +150 °C
Junction Temperature 150 °C Maximum
- Maximum Power Dissipation
Total Power Dissipation (T_A=25°C) 625 mW
- Maximum Voltages and Currents (T_A=25°C)
V_{CBO} Collector to Base Voltage 75 V
V_{CEO} Collector to Emitter Voltage 40 V
V_{EBO} Emitter to Base Voltage 6 V
I_C Collector Current 600 mA

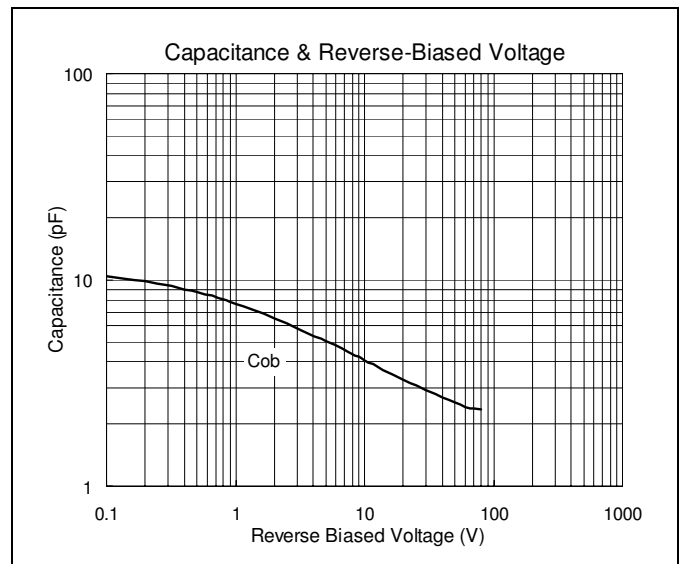
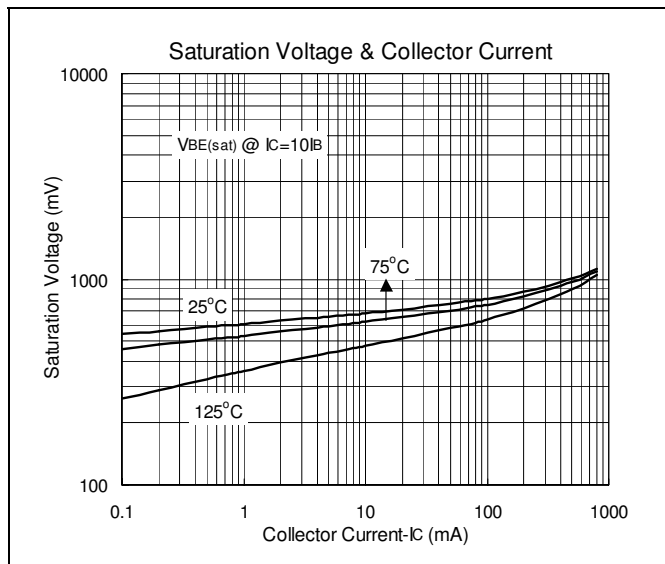
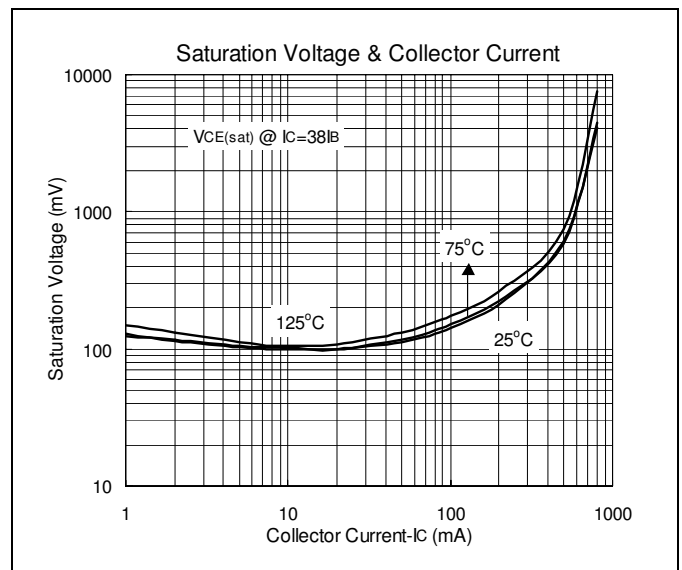
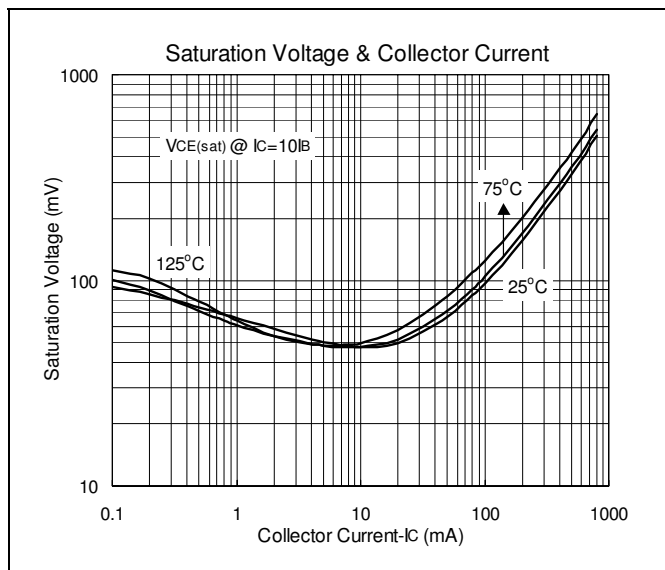
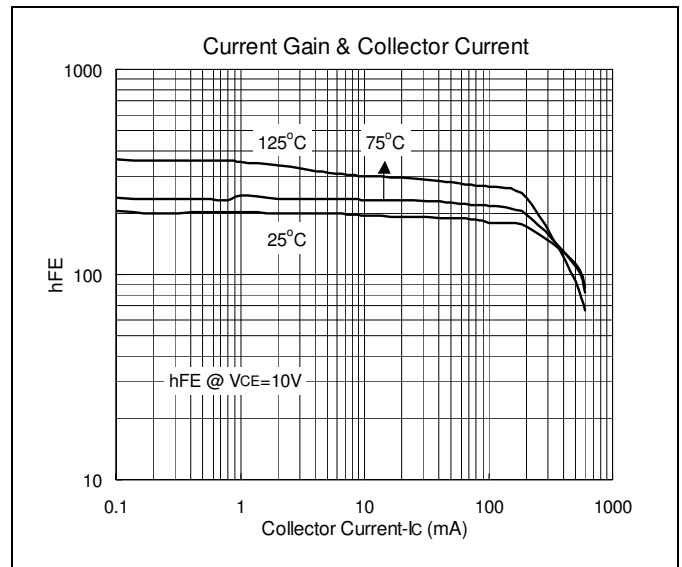
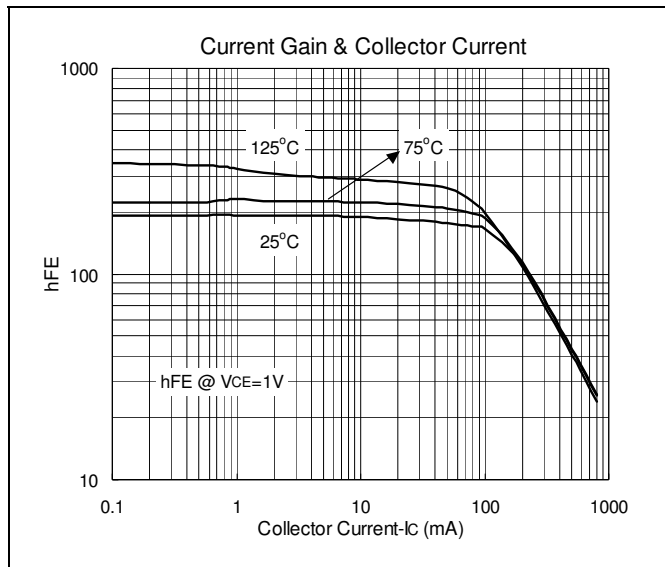
Electrical Characteristics (T_A=25°C)

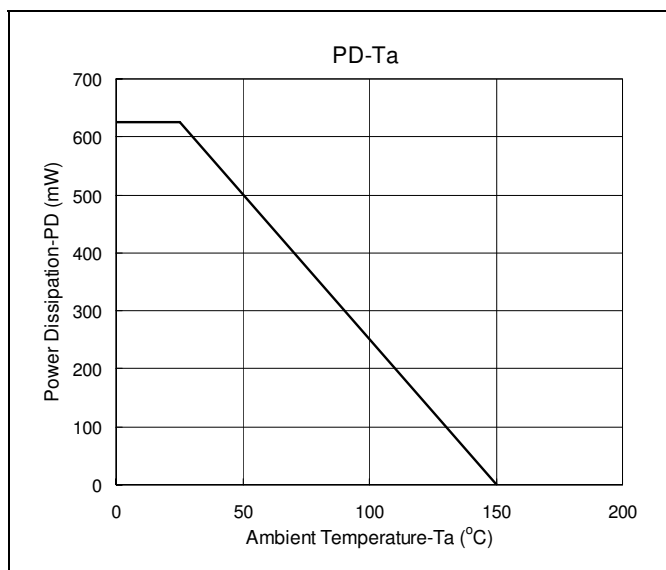
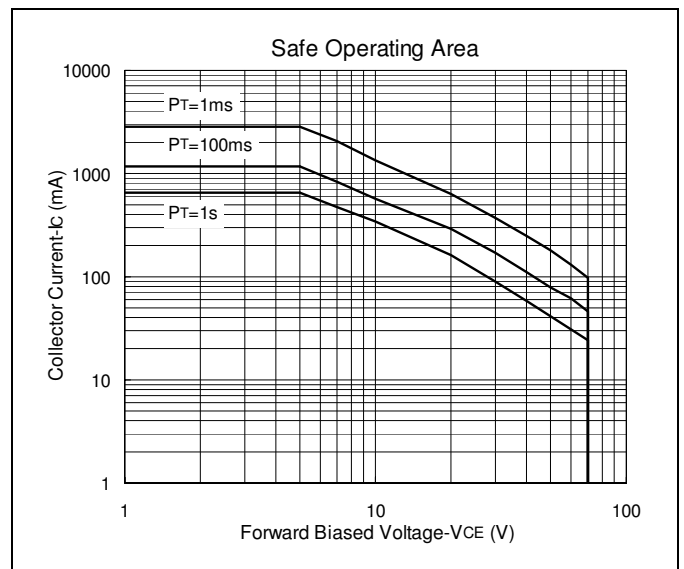
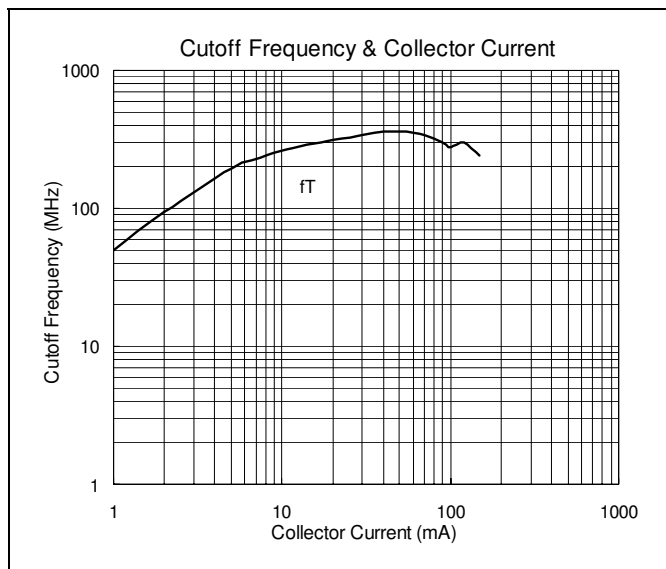
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CBO}	75	-	-	V	I _C =10uA, I _E =0
BV _{CEO}	40	-	-	V	I _C =10mA, I _B =0
BV _{EBO}	6	-	-	V	I _E =10uA, I _C =0
I _{CBO}	-	-	10	nA	V _{CB} =60V, I _E =0
I _{CEX}	-	-	10	nA	V _{CB} =60V, V _{EB(OFF)} =3V
I _{EBO}	-	-	50	nA	V _{EB} =3V, I _C =0
*V _{CE(sat)1}	-	-	300	mv	I _C =150mA, I _B =15mA
*V _{CE(sat)2}	-	-	1	V	I _C =500mA, I _B =50mA
*V _{BE(sat)1}	-	-	1.2	V	I _C =150mA, I _B =15mA
*V _{BE(sat)2}	-	-	2	V	I _C =500mA, I _B =50mA
*h _{FE1}	35	-	-		V _{CE} =10V, I _C =100uA
*h _{FE2}	50	-	-		V _{CE} =10V, I _C =1mA
*h _{FE3}	75	-	-		V _{CE} =10V, I _C =10mA
*h _{FE4}	100	-	300		V _{CE} =10V, I _C =150mA
*h _{FE5}	40	-	-		V _{CE} =10V, I _C =500mA
*h _{FE6}	50	-	-		V _{CE} =1V, I _C =150mA
f _T	300	-	-	MHz	V _{CE} =20V, I _C =20mA, f =100MHz
Cob	-	-	8	pF	V _{CB} =10V, f=1MHz

*Pulse Test: Pulse Width ≤380us, Duty Cycle≤2%



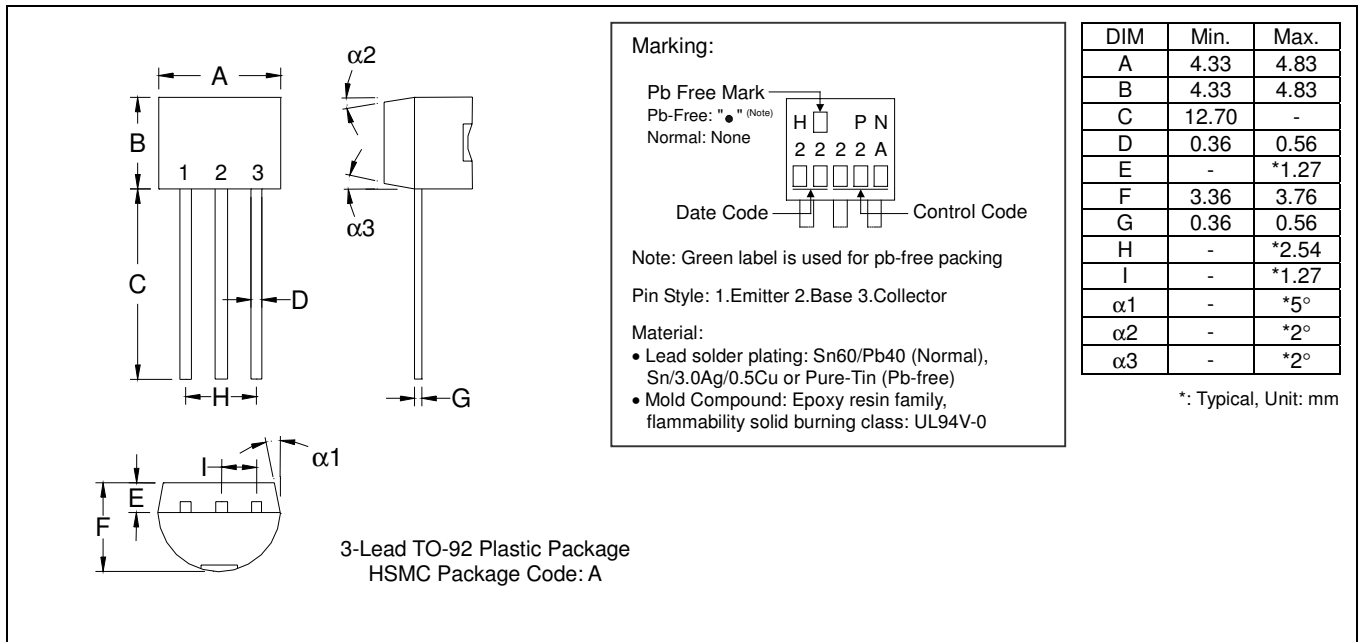
Characteristics Curve



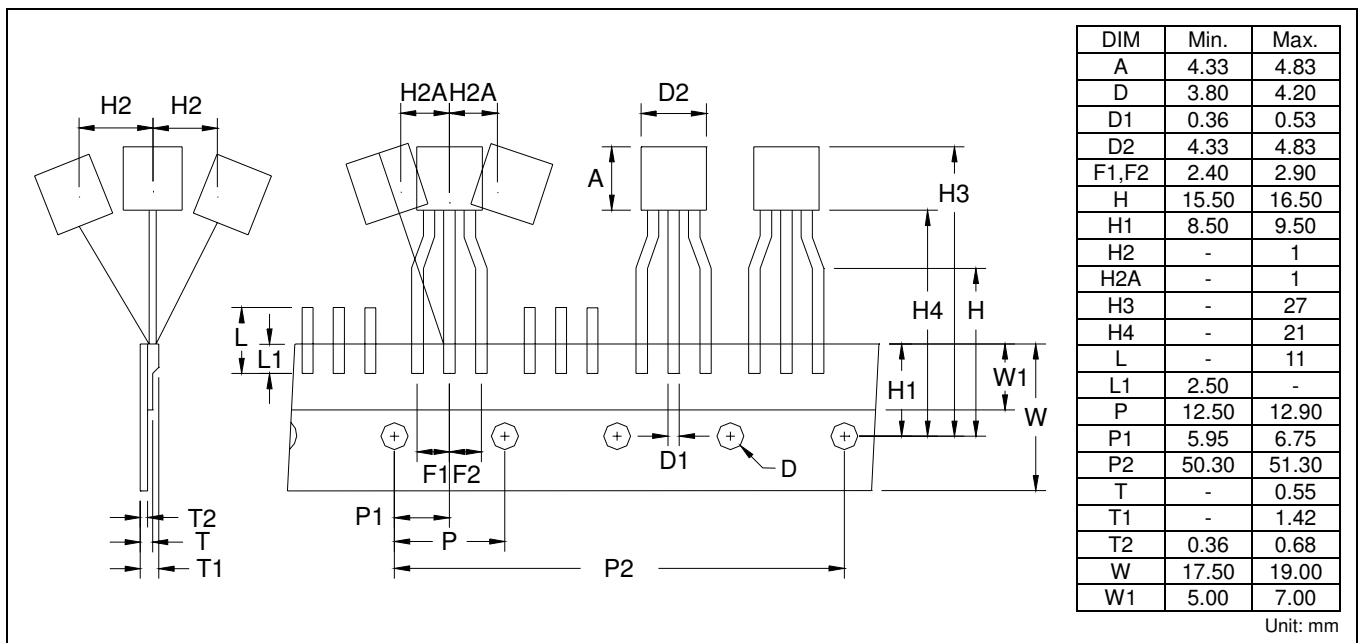




TO-92 Dimension



TO-92 Taping Dimension



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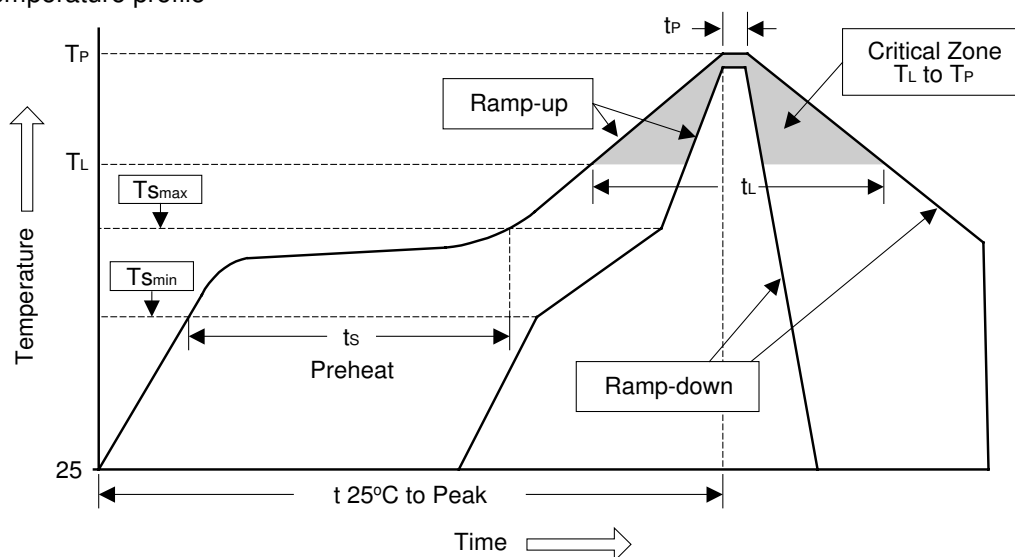


Soldering Methods for HSMC's Products

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)	$<3^{\circ}\text{C}/\text{sec}$	$<3^{\circ}\text{C}/\text{sec}$
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	$<3^{\circ}\text{C}/\text{sec}$	$<3^{\circ}\text{C}/\text{sec}$
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	$<6^{\circ}\text{C}/\text{sec}$	$<6^{\circ}\text{C}/\text{sec}$
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