



H2N5401

PNP EPITAXIAL PLANAR TRANSISTOR

Description

The H2N5401 is designed for general purpose applications requiring high breakdown voltages.

Features

- Complements to NPN Type H2N5551
- High Collector-Emitter Breakdown Voltage ($V_{CEO}=150V$ ($@I_C=1mA$))

Absolute Maximum Ratings

- Maximum Temperatures
Storage Temperature -55 ~ +150 °C
Junction Temperature +150 °C Maximum
- Maximum Power Dissipation
Total Power Dissipation ($T_A=25^{\circ}C$) 625 mW
- Maximum Voltages and Currents ($T_A=25^{\circ}C$)
 V_{CBO} Collector to Base Voltage -160 V
 V_{CEO} Collector to Emitter Voltage -150 V
 V_{EBO} Emitter to Base Voltage -5 V
 I_C Collector Current -600 mA

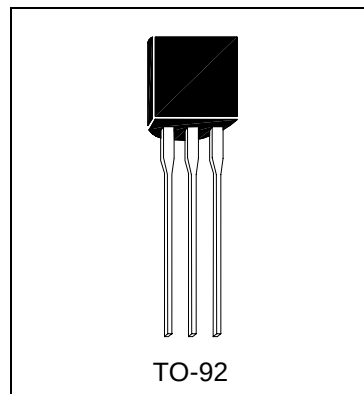
Electrical Characteristics ($T_A=25^{\circ}C$)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	-160	-	-	V	$I_C=-100\mu A, I_E=0$
BV_{CEO}	-150	-	-	V	$I_C=-1mA, I_B=0$
BV_{EBO}	-5	-	-	V	$I_E=-10\mu A, I_C=0$
I_{CBO}	-	-	-50	nA	$V_{CB}=-120V, I_E=0$
I_{EBO}	-	-	-50	nA	$V_{EB}=-3V, I_C=0$
$*V_{CE(sat)1}$	-	-	-0.2	V	$I_C=-10mA, I_B=-1mA$
$*V_{CE(sat)2}$	-	-	-0.5	V	$I_C=-50mA, I_B=-5mA$
$*V_{BE(sat)1}$	-	-	-1	V	$I_C=-10mA, I_B=-1mA$
$*V_{BE(sat)2}$	-	-	-1	V	$I_C=-50mA, I_B=-5mA$
$*h_{FE1}$	50	-	-		$V_{CE}=-5V, I_C=-1mA$
$*h_{FE2}$	80	160	400		$V_{CE}=-5V, I_C=-10mA$
$*h_{FE3}$	50	-	-		$V_{CE}=-5V, I_C=-50mA$
f_T	100	-	300	MHz	$V_{CE}=-10V, I_C=-10mA, f=100MHz$
Cob	-	-	6	pF	$V_{CB}=-10V, f=1MHz, I_E=0$

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

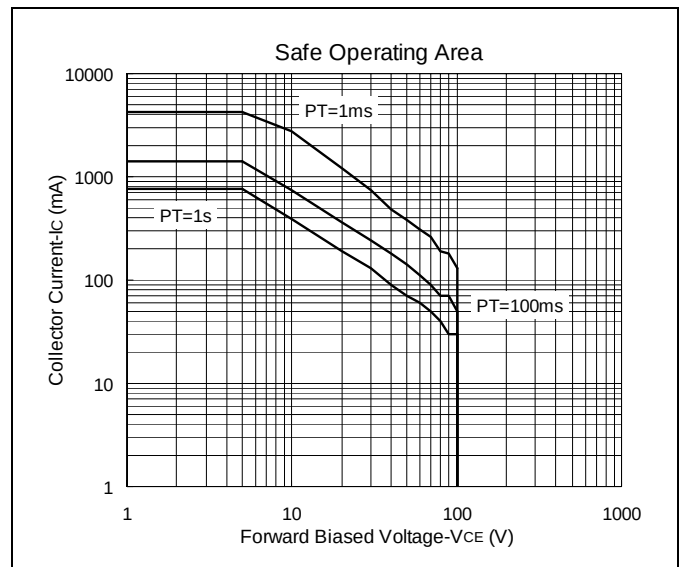
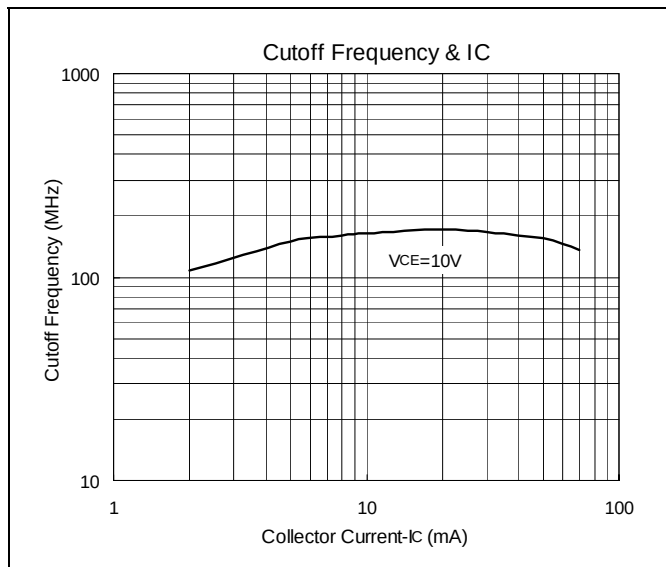
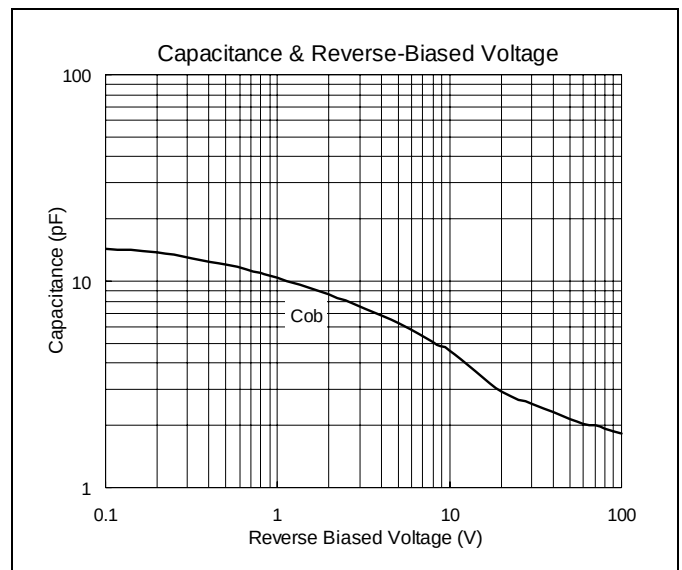
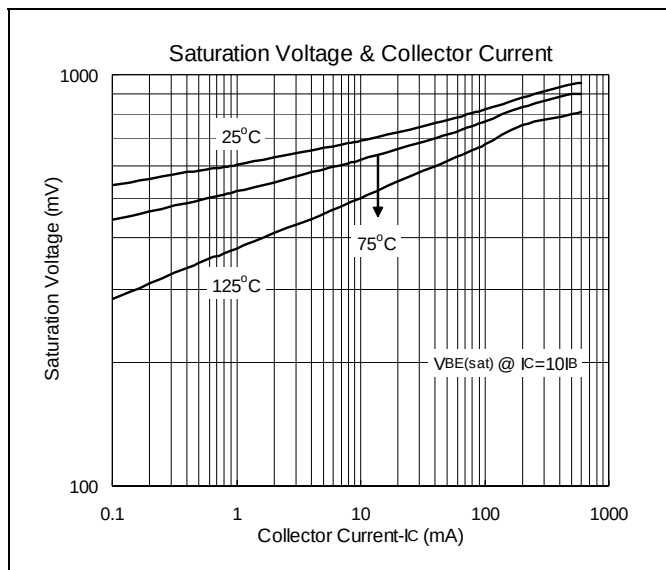
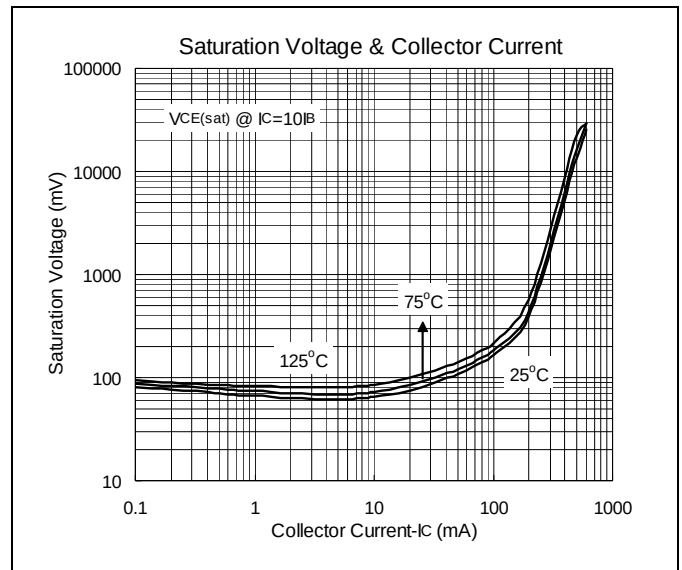
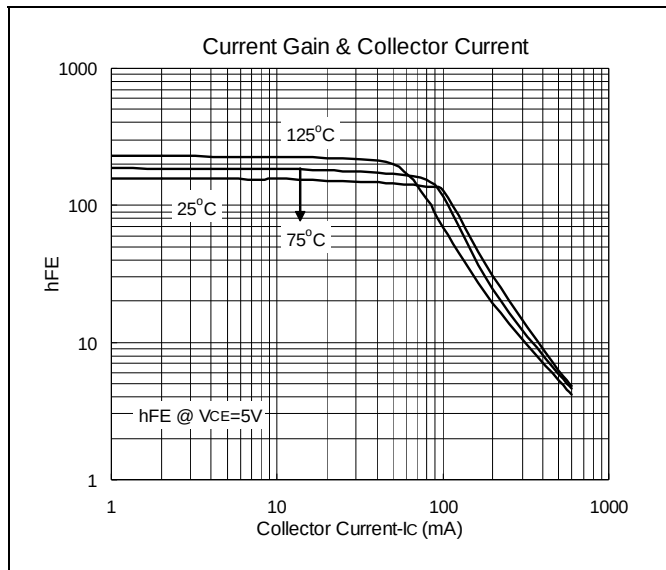
Classification of hFE2

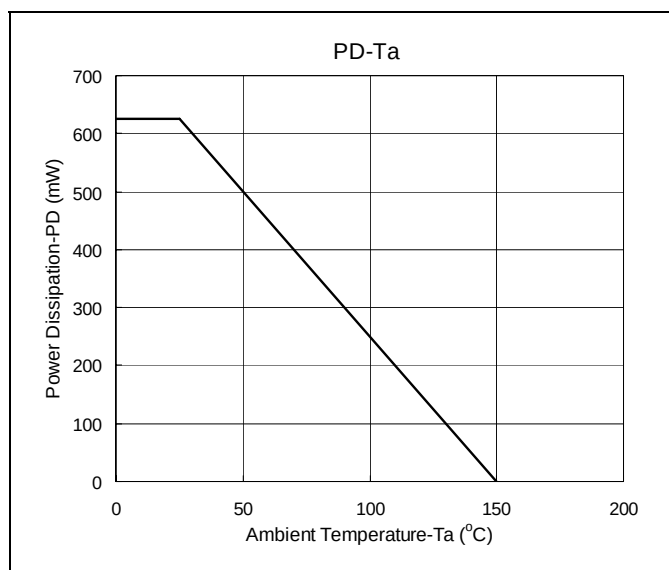
Rank	A	N	C
Range	80-200	100-240	160-400





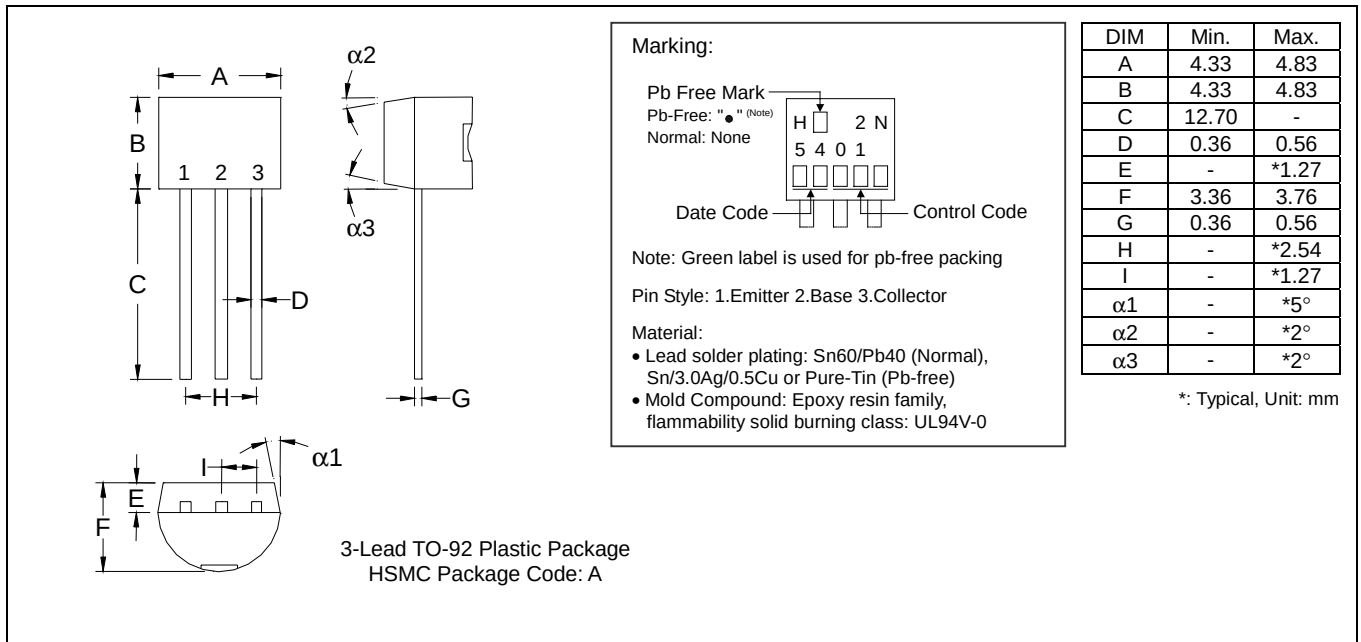
Characteristics Curve



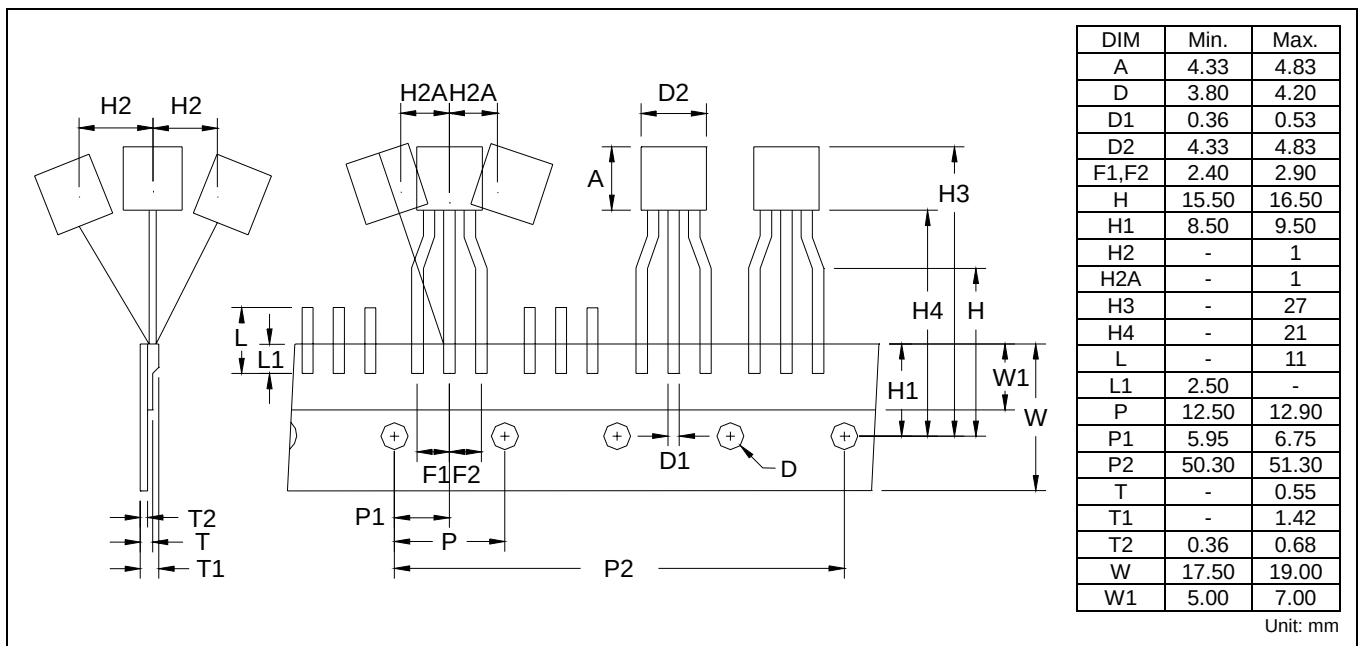




TO-92 Dimension



TO-92 Taping Dimension



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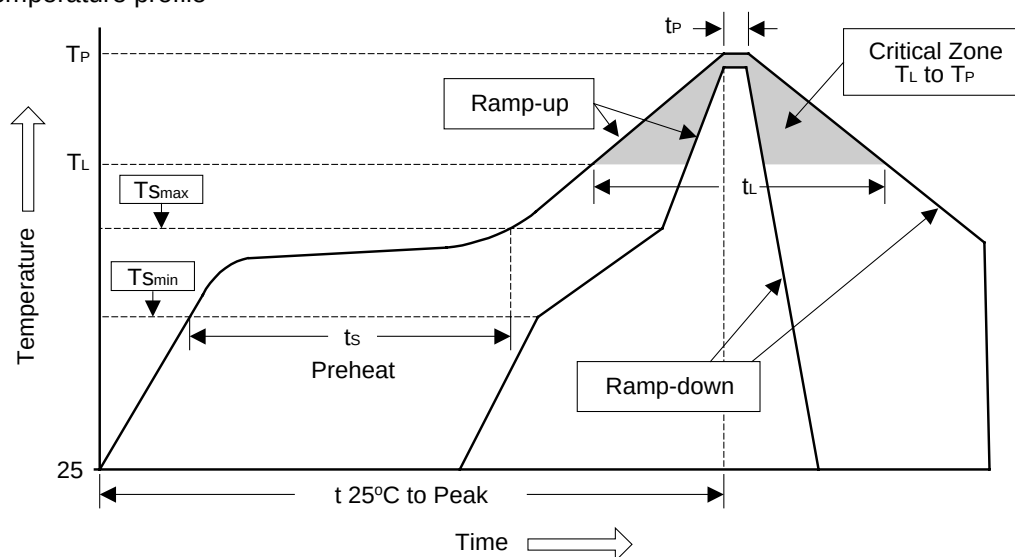


Soldering Methods for HSMC's Products

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