

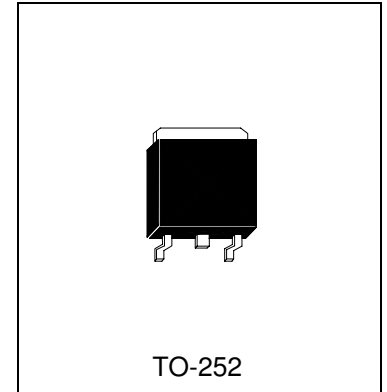


HJ112

NPN EPITAXIAL PLANAR TRANSISTOR

Description

The HJ112 is designed for use in general purpose amplifier and low-speed switching applications.



Absolute Maximum Ratings (T_A=25°C)

- Maximum Temperatures
 - Storage Temperature -55 ~ +150 °C
 - Junction Temperature 150 °C Maximum
- Maximum Power Dissipation
 - Total Power Dissipation (T_C=25°C) 20 W
- Maximum Voltages and Currents (T_A=25°C)
 - V_{CBO} Collector to Base Voltage 100 V
 - V_{CEO} Collector to Emitter Voltage 100 V
 - V_{EBO} Emitter to Base Voltage 5 V
 - I_C Collector Current 4 A

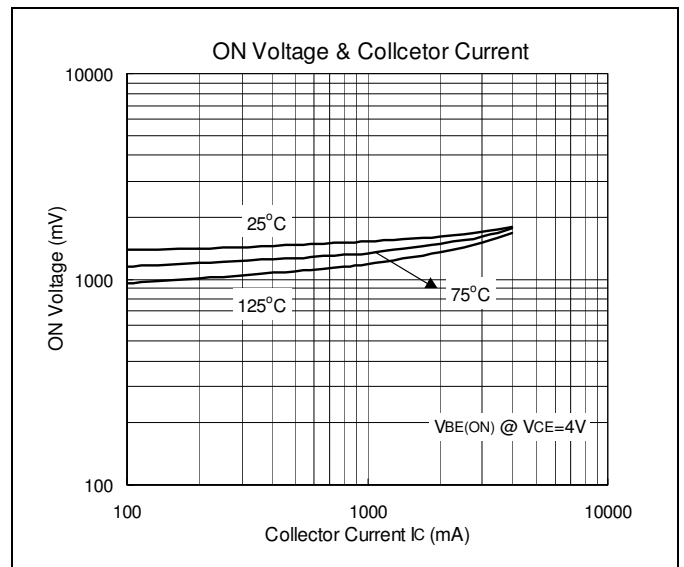
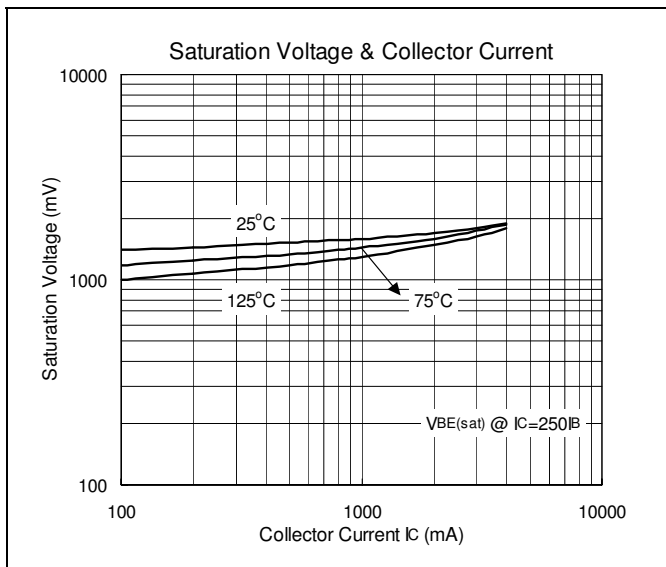
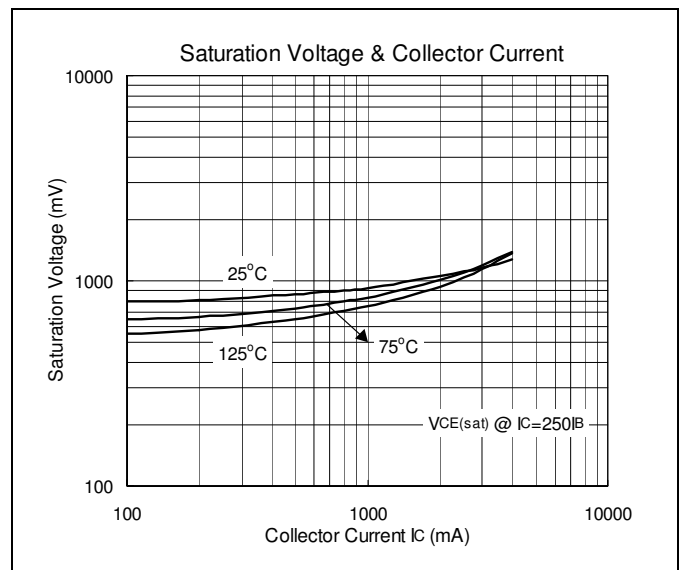
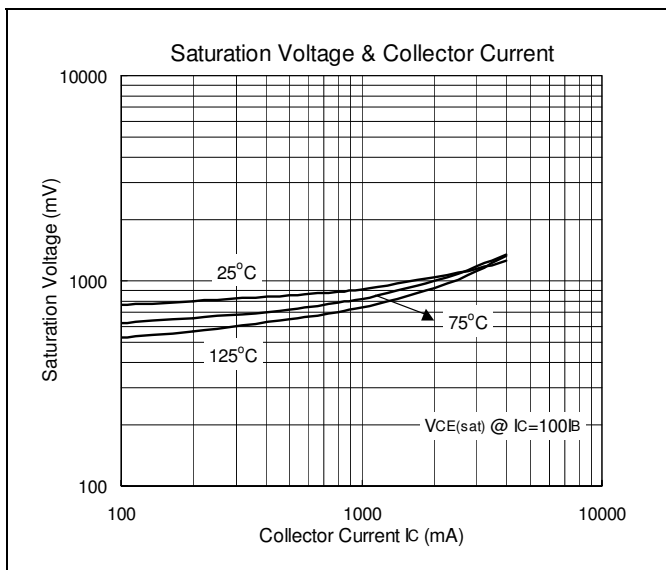
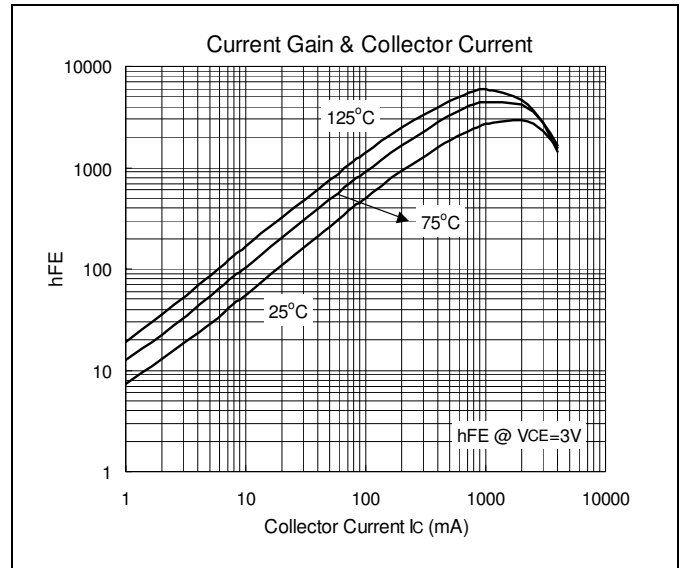
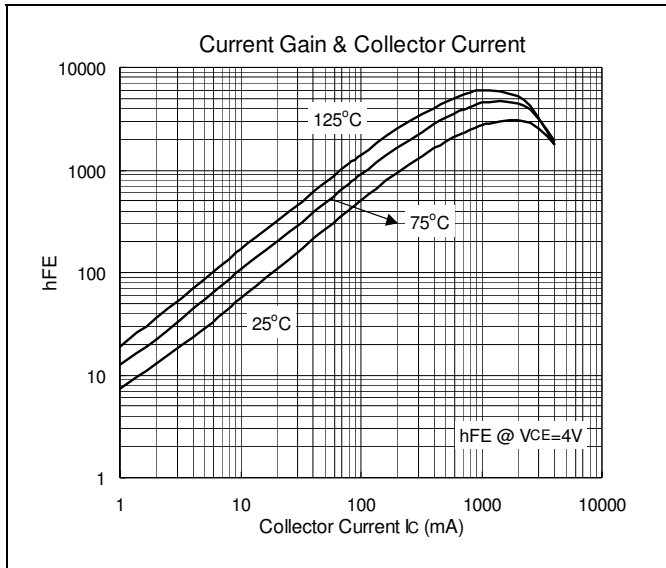
Electrical Characteristics (T_A=25°C)

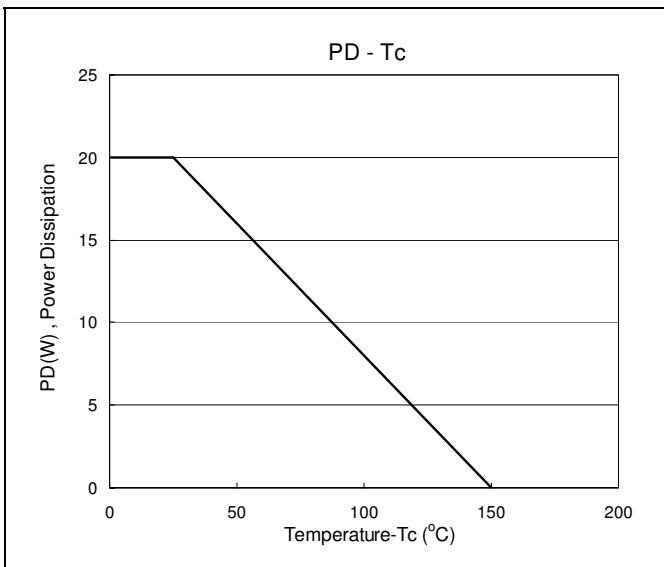
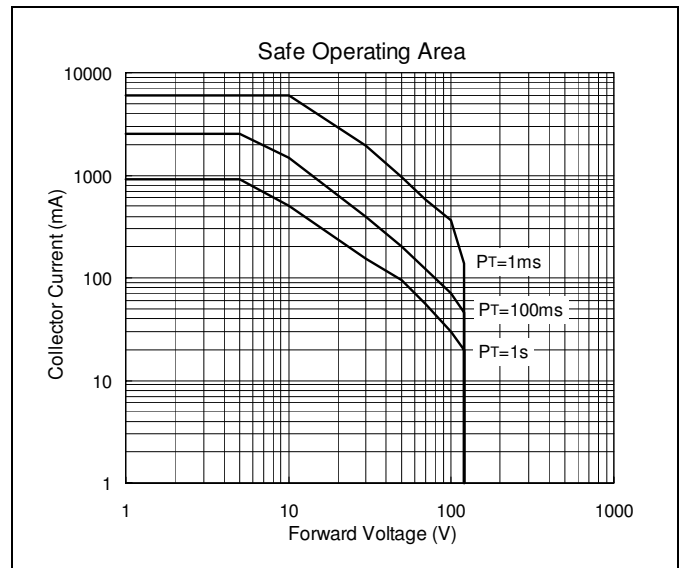
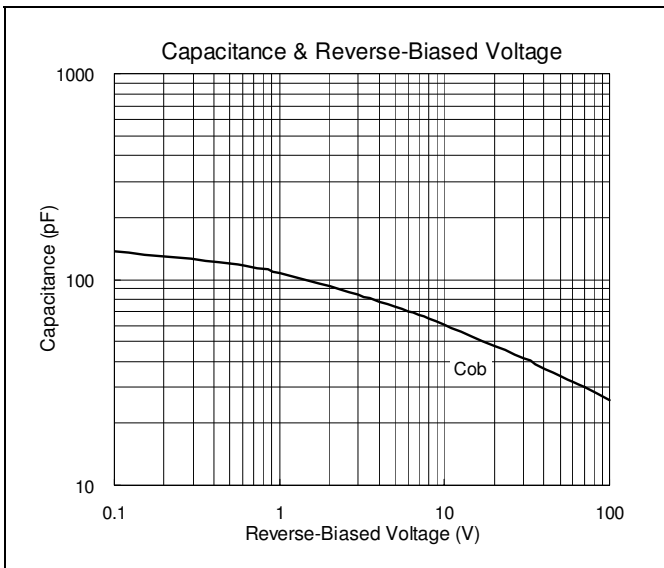
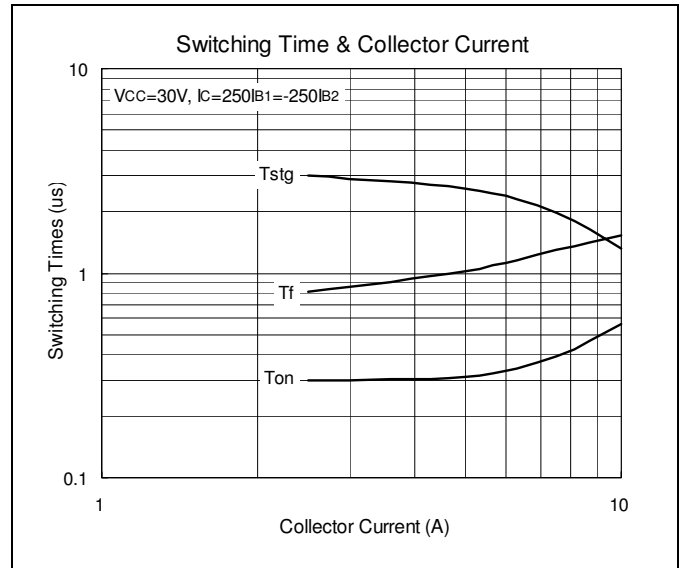
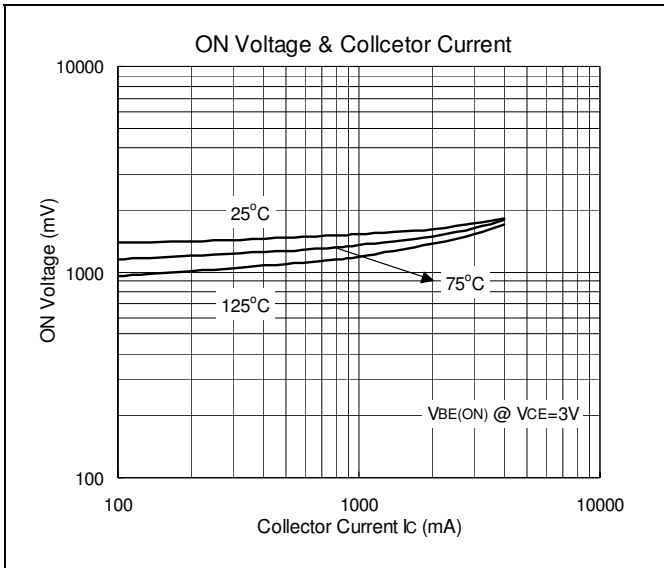
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CBO}	100	-	-	V	I _C =1mA
BV _{CEO}	100	-	-	V	I _C =30mA
I _{CBO}	-	-	10	uA	V _{CB} =80V
I _{CEO}	-	-	20	uA	V _{CE} =50V
I _{EBO}	-	-	2	mA	
*V _{CE(sat)1}	-	-	2.5	V	I _C =2A, I _B =8mA
*V _{BE(on)}	-	-	2.8	V	I _C =2A, V _{CE} =3V
*h _{FE1}	500	-	-		I _C =0.5A, V _{CE} =3V
*h _{FE2}	1	-	12	K	I _C =2A, V _{CE} =3V
*h _{FE3}	200	-	-		I _C =4A, V _{CE} =3V
Cob	-	-	100	pF	V _{CB} =10V

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



Characteristics Curve







TO-252 Dimension

3-Lead TO-252 Plastic
Surface Mount Package
HSMC Package Code: J

Marking:

Pb Free Mark
 Pb-Free: "●" (Note)
 Normal: None

Date Code Control Code

Note: Green label is used for pb-free packing
 Pin Style: 1.Base 2.Collector 3.Emitter

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	6.35	6.80
C	4.80	5.50
F	1.30	1.70
G	5.40	6.25
H	2.20	3.00
L	0.40	0.90
M	2.20	2.40
N	0.90	1.50
a1	0.40	0.65
a2	-	*2.30
a5	0.65	1.05

*: Typical, Unit: mm

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- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

DIM	Min.	Max.
A	6.40	6.80
B	-	6.00
C	5.04	5.64
D	-	*4.34
E	0.40	0.80
F	0.50	0.90
G	5.90	6.30
H	2.50	2.90
I	9.20	9.80
J	0.60	1.00
K	-	0.96
L	0.66	0.86
M	2.20	2.40
N	0.70	1.10
O	0.82	1.22
a1	0.40	0.60
a2	2.10	2.50
y1	-	5°
y2	-	3°

*: Typical, Unit: mm

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Head Office And Factory:

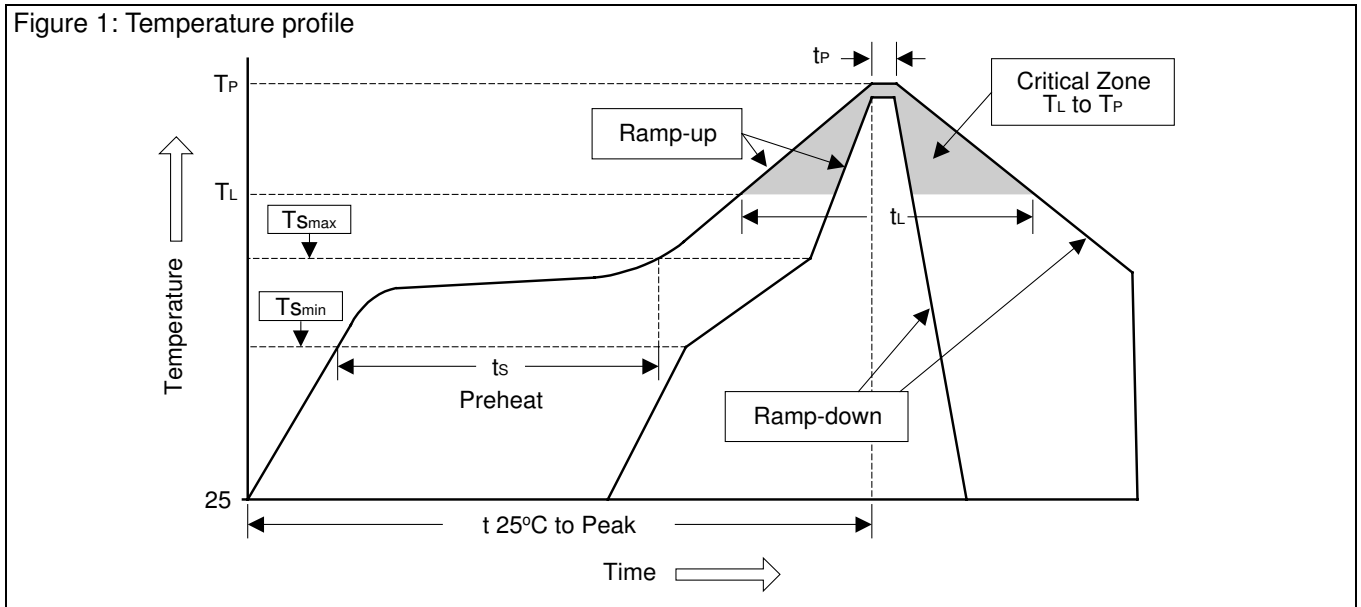
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Soldering Methods for HSMC's Products

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