



HI-SINCERITY MICROELECTRONICS CORP.

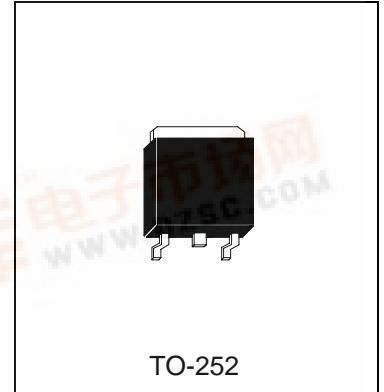
Spec. No. : HJ200101
 Issued Date : 2001.09.01
 Revised Date : 2005.07.14
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HSB857J

PNP EPITAXIAL PLANAR TRANSISTOR

Description

Low frequency power amplifier.



Absolute Maximum Ratings (T_A=25°C)

- Maximum Temperatures
 - Storage Temperature -50~+150 °C
 - Junction Temperature +150 °C Maximum
- Maximum Power Dissipation
 - Total Power Dissipation (T_C=25°C) 20 W
- Maximum Voltages and Currents
 - BV_{CBO} Collector to Base Voltage -60 V
 - BV_{CEO} Collector to Emitter Voltage -50 V
 - BV_{EBO} Emitter to Base Voltage -5 V
 - I_C Collector Current -3 A
 - I_C Collector Current (I_C Peak) -4.5 A

Electrical Characteristics (T_A=25°C)

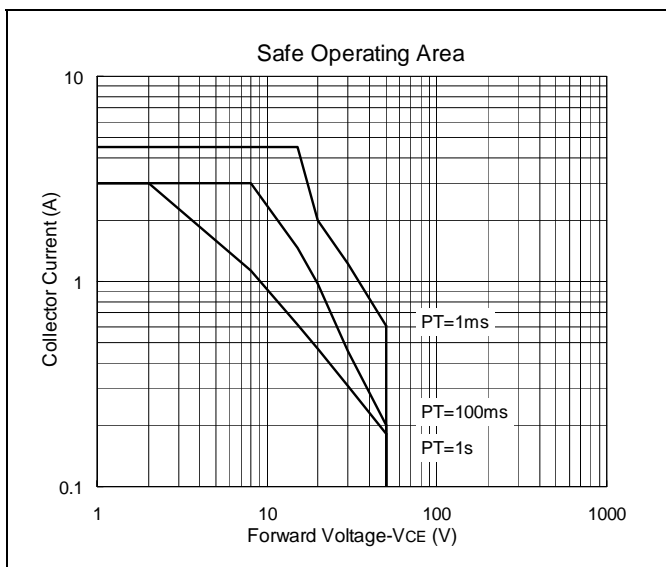
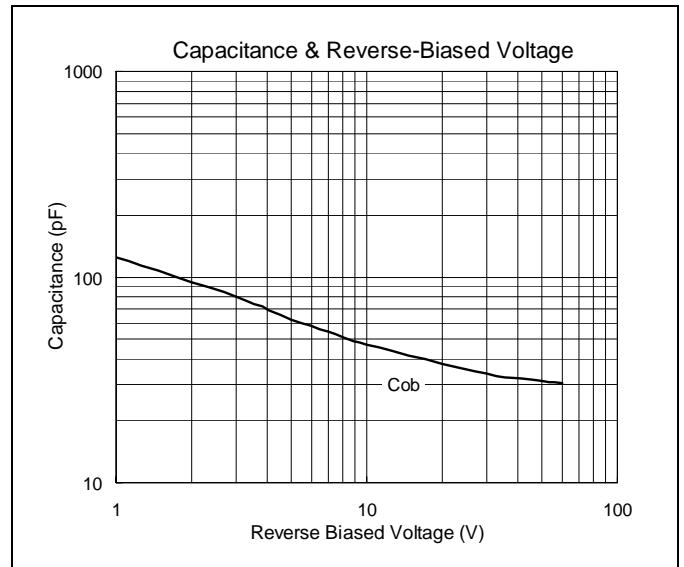
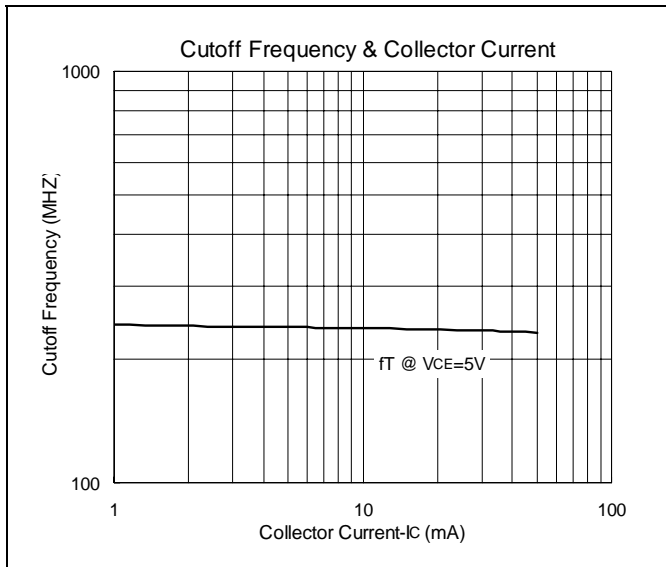
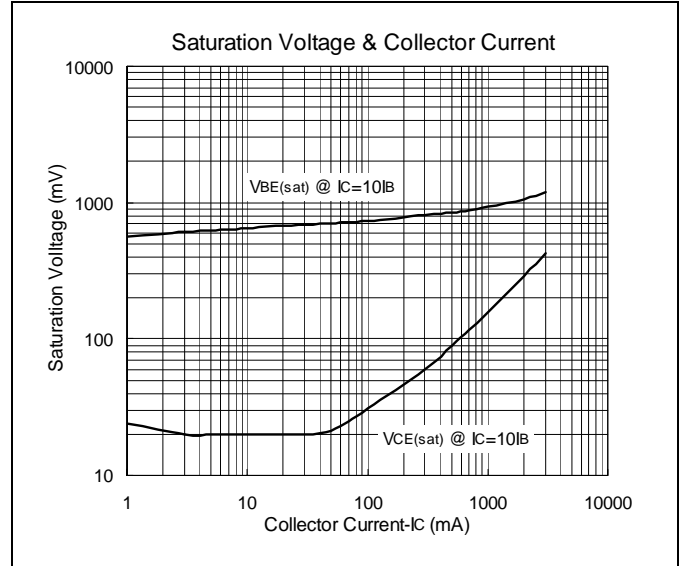
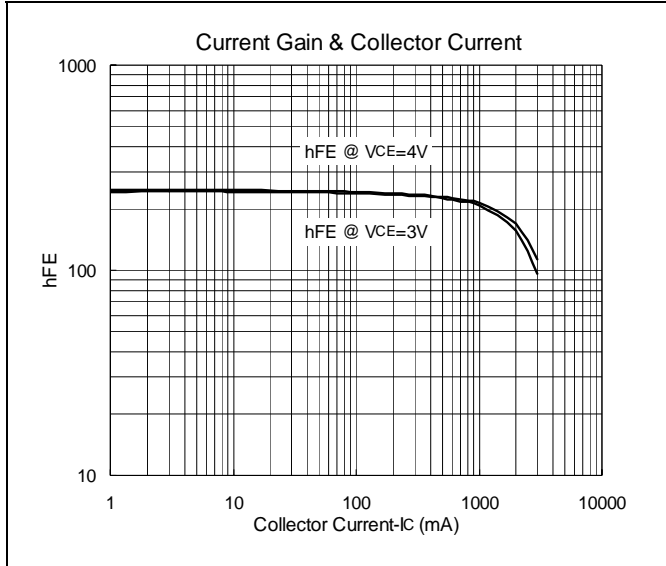
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CBO}	-60	-	-	V	I _C =-50uA
BV _{CEO}	-50	-	-	V	I _C =-1mA
BV _{EBO}	-5	-	-	V	I _E =-50uA
I _{CBO}	-	-	-1	uA	V _{CB} =-50V
I _{CEO}	-	-	-1	uA	V _{CE} =-40V
I _{EBO}	-	-	-1	uA	V _{EB} =-4V
*V _{CE(sat)}	-	-0.3	-1	V	I _C =-2A, I _B =-0.2A
*V _{BE(sat)}	-	-	-1.5	V	I _C =-2A, I _B =-0.2A
*h _{FE}	170	-	400		I _C =-500mA, V _{CE} =-3V
f _T	-	15	-	MHz	V _{CE} =-5V, I _C =-500mA, f=100MHz

*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:

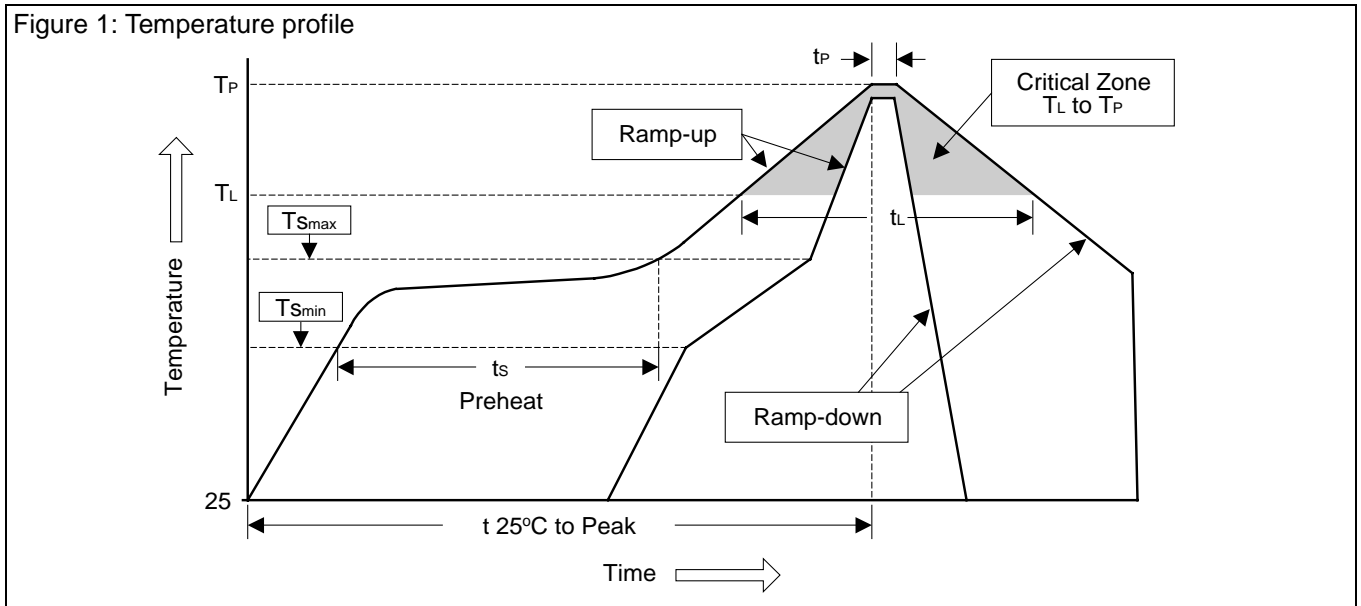
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Soldering Methods for HSMC's Products

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