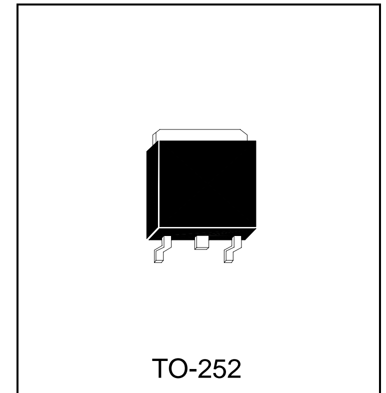
HJ882

NPN EPITAXIAL PLANAR TRANSISTOR



Description

The HJ882 is designed for using in output stage of 20 W audio amplifier, voltage regulator, DC-DC converter and relay driver.

Absolute Maximum Ratings (T_A=25°C)

- Maximum Temperatures
  - Storage Temperature .... -55 ~ +150 °C
  - Junction Temperature .... +150 °C
- Maximum Power Dissipation
  - Total Power Dissipation (T_C=25°C) .... 10 W
- Maximum Voltages and Currents
  - BV_{CBO} Collector to Base Voltage .... 40 V
  - BV_{CEO} Collector to Emitter Voltage .... 30 V
  - BV_{EBO} Emitter to Base Voltage .... 5 V
  - I_C Collector Current (DC) .... 3 A
  - I_C Collector Current (Pulse) .... 7 A
  - I_B Base Current (DC) .... 600 mA

Thermal Characteristic

Characteristic	Symbol	Max	Unit
Thermal Resistance, junction to case	$R_{\theta jc}$	12.5	°C/W

Electrical Characteristics (T_A=25°C)

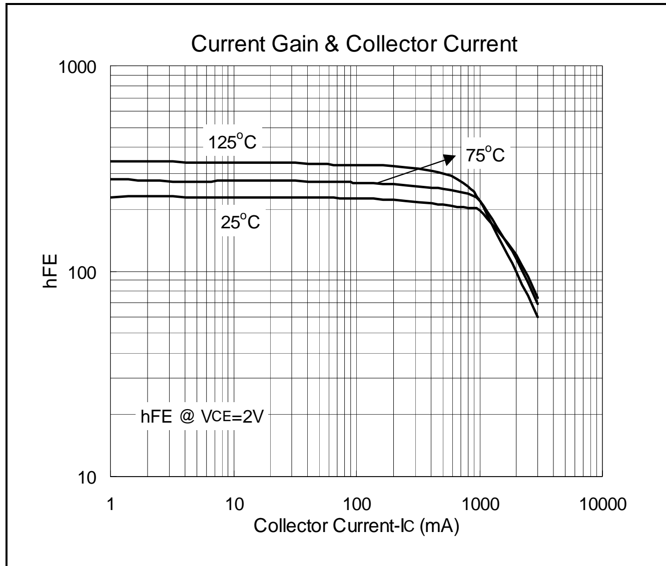
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	40	-	-	V	I_C=100uA, I_E=0
BV_{CEO}	30	-	-	V	I_C=1mA, I_B=0
BV_{EBO}	5	-	-	V	I_E=10uA, I_C=0
I_{CBO}	-	-	1	uA	V_{CB}=30V, I_E=0
I_{EBO}	-	-	1	uA	V_{EB}=3V, I_C=0
*$V_{CE(sat)}$	-	-	0.5	V	I_C=2A, I_B=0.2A
*$V_{BE(sat)}$	-	1	2	V	I_C=2A, I_B=0.2A
*h_{FE1}	30	-	-		V_{CE}=2V, I_C=20mA
*h_{FE2}	100	-	500		V_{CE}=2V, I_C=1A
F=	-	90	-	MHz	V_{CE}=5V, I_C=0.1A, f=100MHz
Cob	-	45	-	pF	V_{CB}=10V, f=1MHz

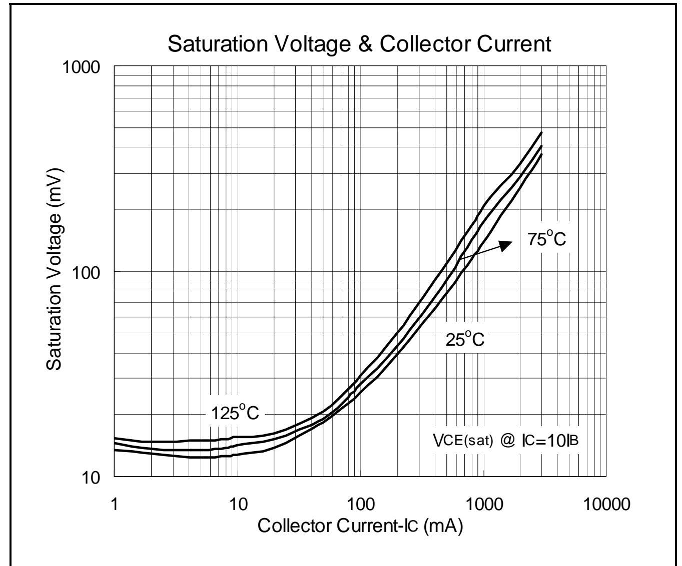
*Pulse Test: Pulse Width ≤380us, Duty Cycle≤2%

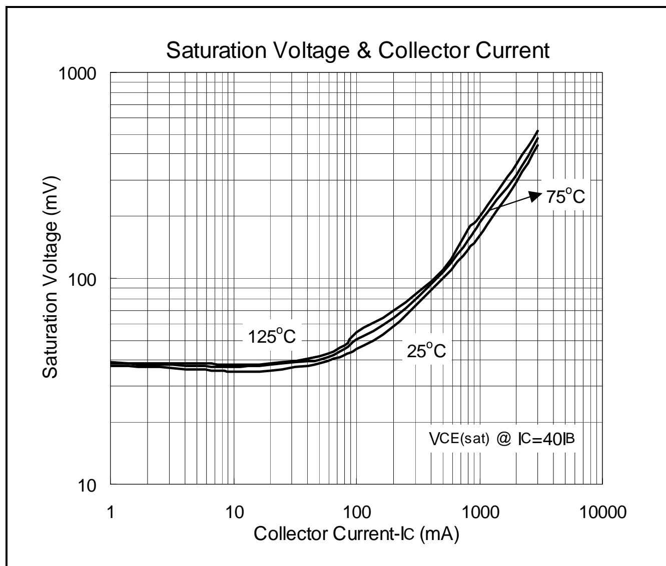
Classification Of hFE2

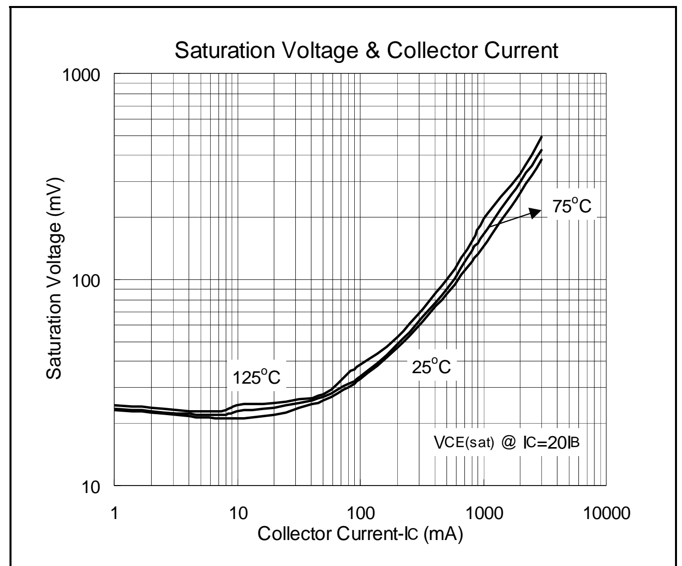
Rank	Q	P	E
Range	100-200	160-320	250-500

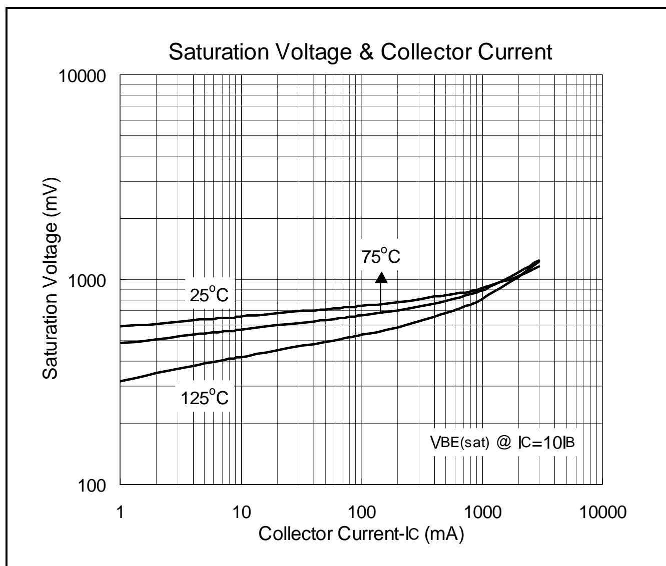
Characteristics Curve

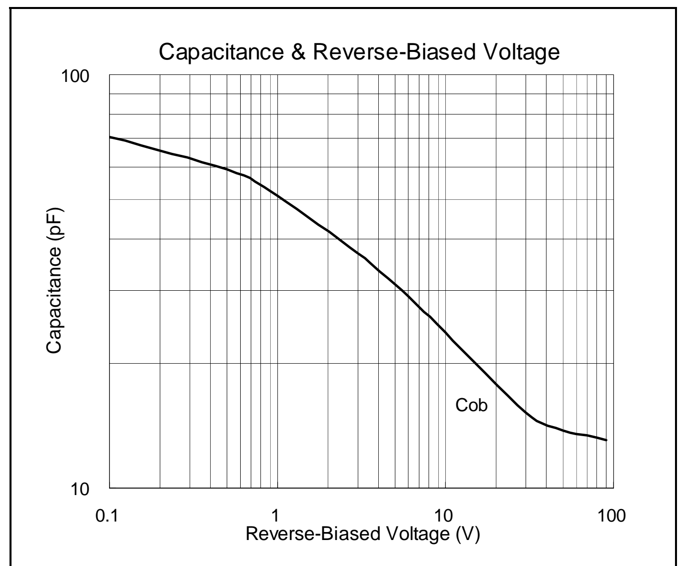


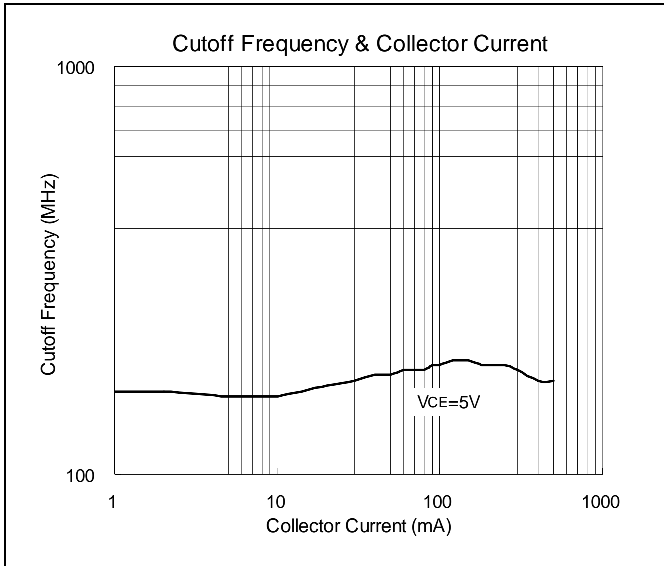




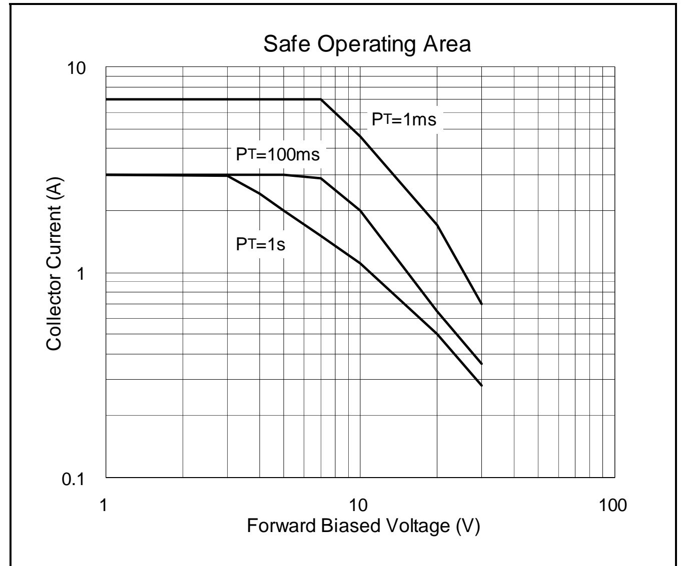




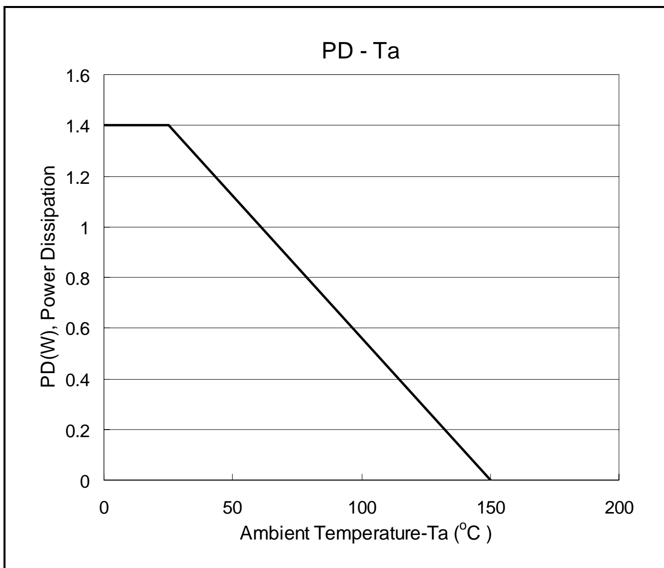




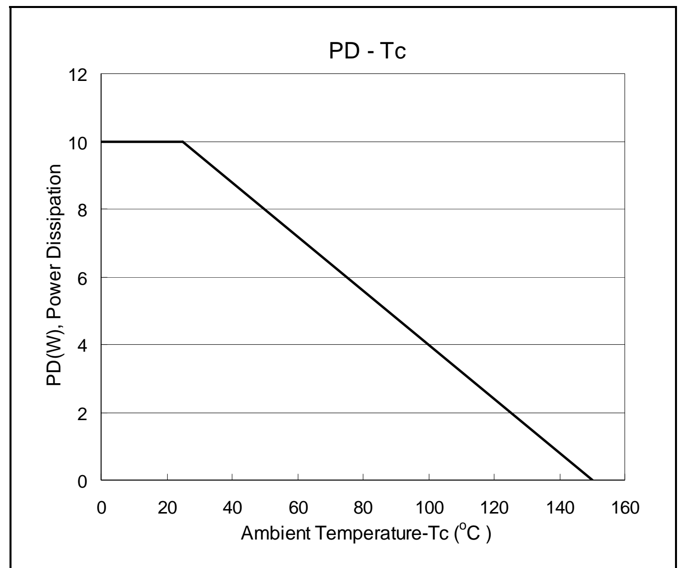
Cutoff Frequency & Collector Current
Cutoff Frequency (MHz)
Collector Current (mA)
VCE=5V
1000
100
1
10
100
1000



Safe Operating Area
Collector Current (A)
Forward Biased Voltage (V)
PT=1ms
PT=100ms
PT=1s
10
1
0.1
1
10
100



PD - Ta
PD(W), Power Dissipation
Ambient Temperature-Ta (°C)
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0
50
100
150
200



PD - Tc
PD(W), Power Dissipation
Ambient Temperature-Tc (°C)
12
10
8
6
4
2
0
0
20
40
60
80
100
120
140
160

TO-252 Dimension

Marking:

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

H J
8 8 2

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

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

Marking:

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

H J
8 8 2

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	6.40	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

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

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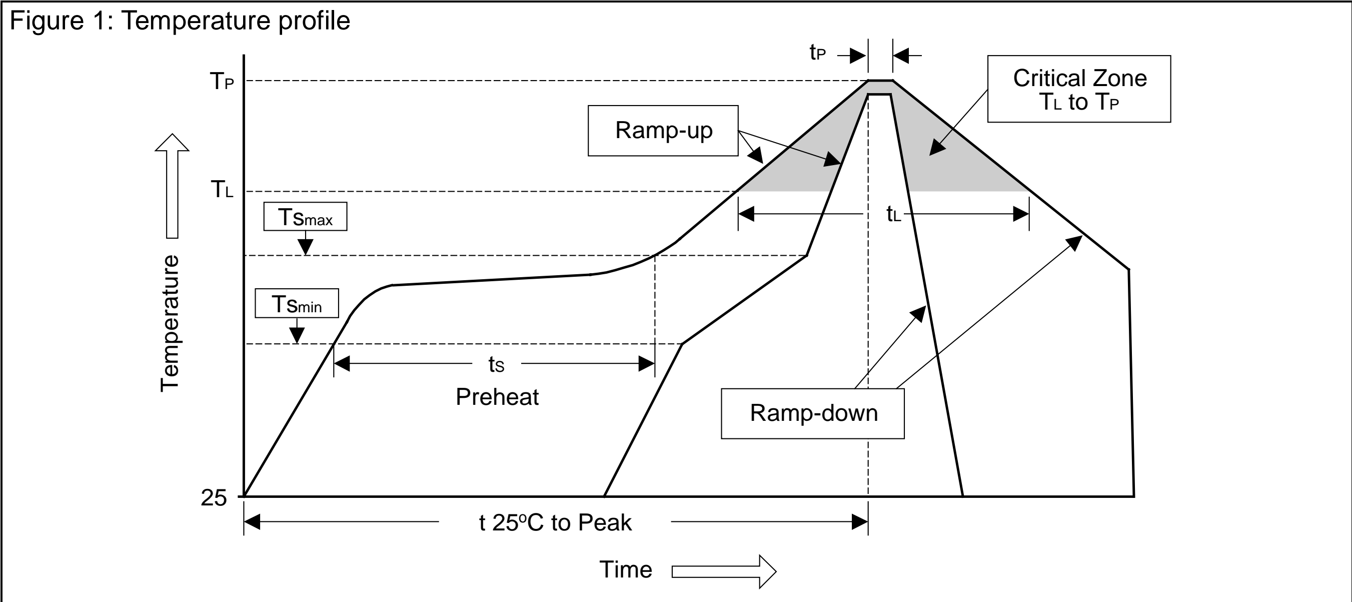
Soldering Methods for HSMC's Products

1. Storage environment: Temperature=10ºC~35ºC 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)	<3ºC/sec	<3ºC/sec
Preheat - Temperature Min (Ts_{min}) - Temperature Max (Ts_{max}) - Time (min to max) (ts)	 100ºC 150ºC 60~120 sec	 150ºC 200ºC 60~180 sec
Tsmax to T_L - Ramp-up Rate	 <3ºC/sec	 <3ºC/sec
Time maintained above: - Temperature (T_L) - Time (t_L)	 183ºC 60~150 sec	 217ºC 60~150 sec
Peak Temperature (T_P)	240ºC +0/-5ºC	260ºC +0/-5ºC
Time within 5ºC of actual Peak Temperature (t_P)	10~30 sec	20~40 sec
Ramp-down Rate	<6ºC/sec	<6ºC/sec
Time 25ºC to Peak Temperature	<6 minutes	<8 minutes

3. Flow (wave) soldering (solder dipping)

Products	Peak temperature	Dipping time
Pb devices.	245ºC ±5ºC	5sec ±1sec
Pb-Free devices.	260ºC +0/-5ºC	5sec ±1sec