

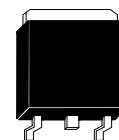


HJ3669

NPN EPITAXIAL PLANAR TRANSISTOR

Description

The HJ3669 is designed for using in power amplifier applications, power switching application.



TO-252

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$)

- Maximum Temperatures
Tstg Storage Temperature..... -55 ~ +150 °C
Tj Junction Temperature +150 °C
- Maximum Power Dissipation
Total Power Dissipation ($T_A=25^{\circ}\text{C}$) 1.25 W
- Maximum Voltages and Currents
BV_{CBO} Collector to Base Breakdown Voltage..... 80 V
BV_{CEO} Collector to Emitter Breakdown Voltage 80 V
BV_{EBO} Emitter to Base Emitter Breakdown Voltage..... 5 V
I_C Collector Current (DC) 2 A

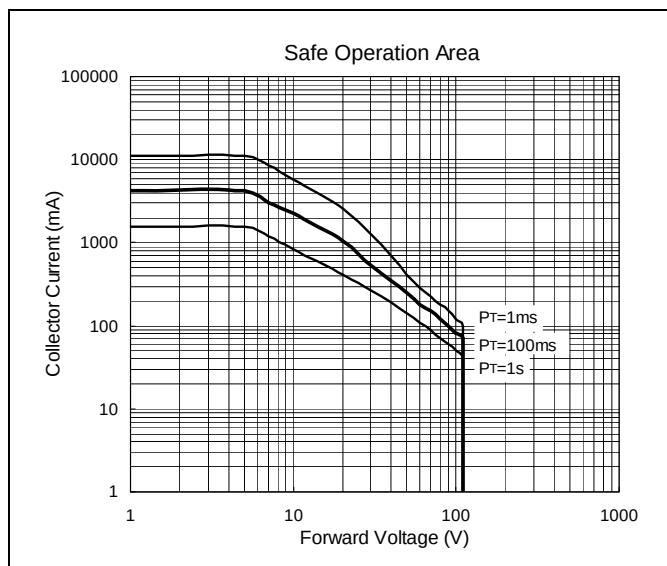
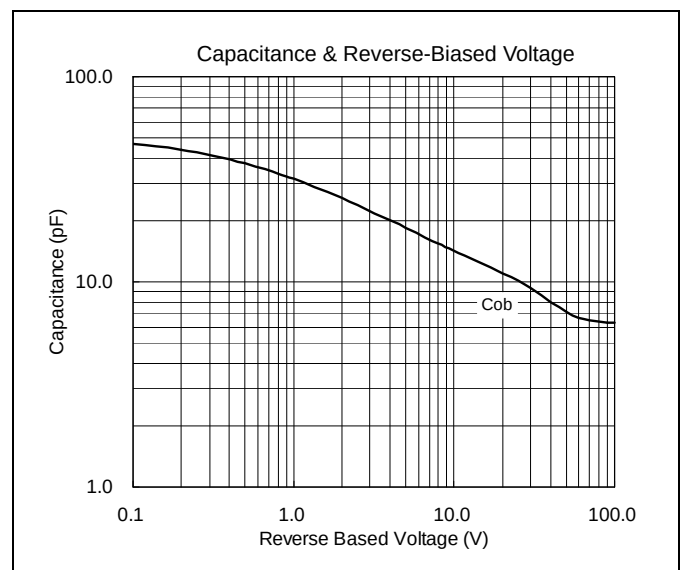
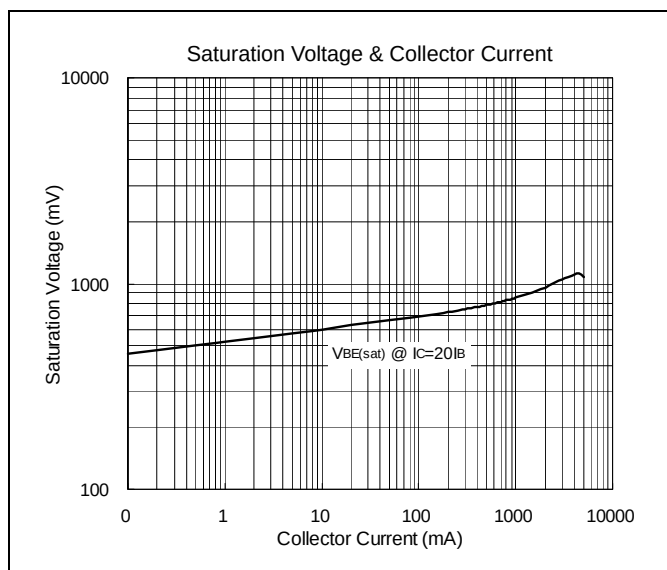
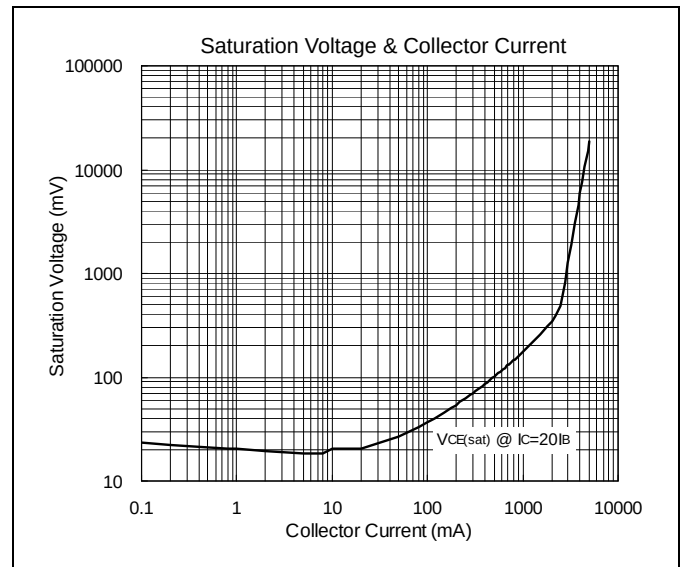
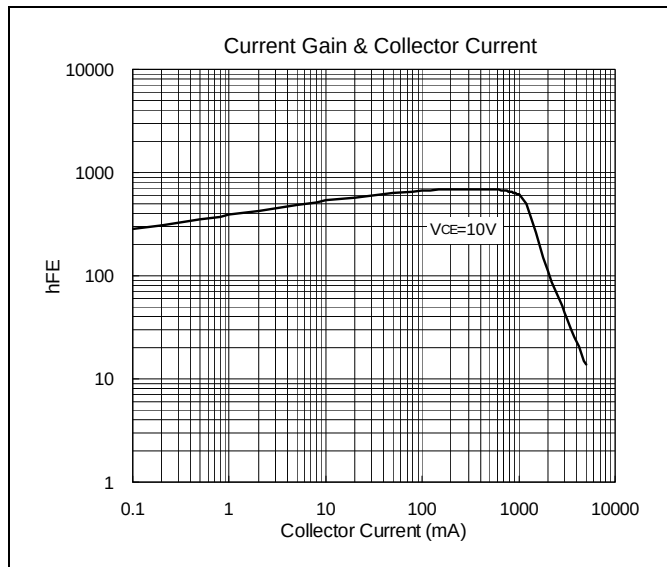
Electrical Characteristics ($T_A=25^{\circ}\text{C}$)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CBO}	80	-	-	V	I _C =100uA
BV _{CEO}	80	-	-	V	I _C =10mA
BV _{EBO}	5	-	-	V	I _E =100uA
I _{CBO}	-	-	1000	nA	V _{CB} =80V
I _{EBO}	-	-	1000	nA	V _{EB} =5V
*V _{CE(sat)}	-	0.15	0.5	V	I _C =1A, I _B =50mA
*V _{BE(sat)}	-	0.9	1.2	V	I _C =1A, I _B =50mA
*h _{FE}	300	-	-		V _{CE} =2V, I _C =500mA
f _T	-	100	-	MHz	V _{CE} =2V, I _C =500mA
Cob	-	30	-	pF	V _{CB} =10V, f=1MHz
T _{on}	-	0.2	-	uS	I _{B1} =-I _{B2} =50mA
T _{stg}	-	1.0	-	uS	Duty Cycle≤1%
T _f	-	0.2	-	uS	

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

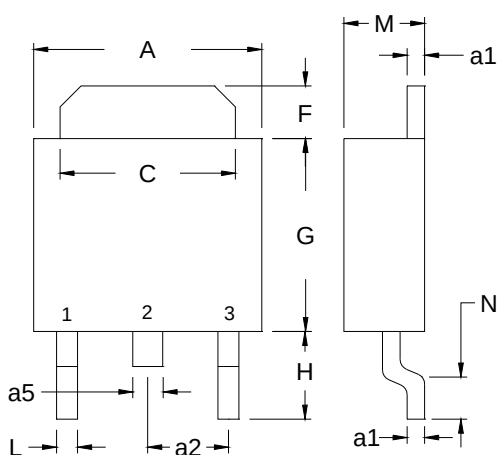


Characteristics Curve





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

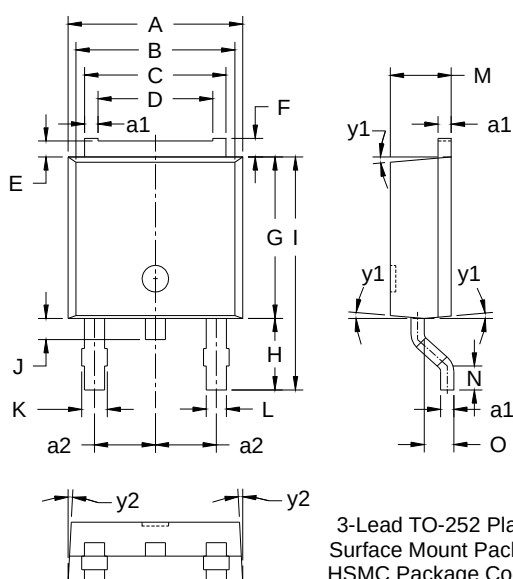
Pin Style: 1.Base 2.Collector 3.Emitter

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	3.20
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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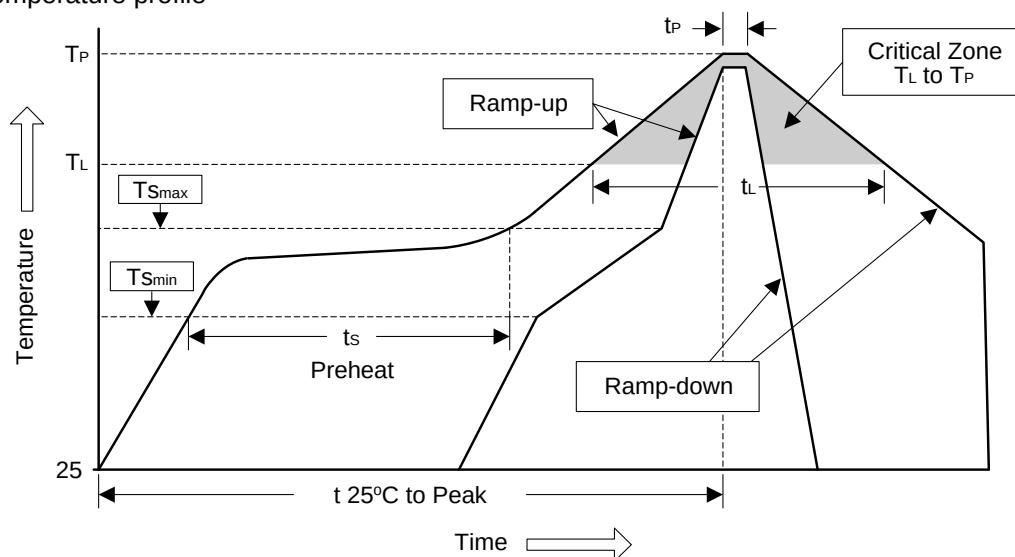
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Soldering Methods for HSMC's Products

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	10sec ±1sec
Pb-Free devices.	260°C ±5°C	10sec ±1sec