



HLB122I

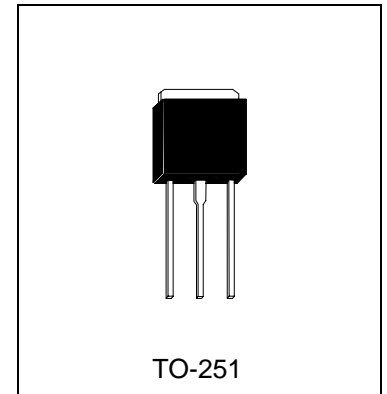
NPN Triple Diffused Planar Type High Voltage Transistor

Description

The HLB122I is a medium power transistor designed for use in switching applications.

Features

- High breakdown voltage
- Low collector saturation voltage
- Fast switching speed



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) 20 W
- Maximum Voltages and Currents
 - BV_{CBO} Collector to Base Voltage 600 V
 - BV_{CEO} Collector to Emitter Voltage 400 V
 - BV_{EBO} Emitter to Base Voltage 6 V
 - I_C Collector Current (DC) 800 mA
 - I_C Collector Current (Pulse) 1600 mA
 - I_B Base Current (DC) 100 mA
 - I_B Base Current (Pulse) 200 mA

Electrical Characteristics (T_A=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CBO}	600	-	-	V	I _C =100uA
BV _{CEO}	400	-	-	V	I _C =10mA
BV _{EBO}	6	-	-	V	I _E =10uA
I _{CBO}	-	-	10	uA	V _{CB} =600V
I _{CEO}	-	-	10	uA	V _{CE} =400V
I _{EBO}	-	-	10	uA	V _{EB} =6V
*V _{CE(sat)1}	-	-	400	mV	I _C =100mA, I _B =20mA
*V _{CE(sat)2}	-	-	800	mV	I _C =300mA, I _B =60mA
*V _{BE(sat)}	-	-	1	V	I _C =100mA, I _B =20mA
*h _{FE1}	10	-	40		V _{CE} =10V, I _C =0.1A
*h _{FE2}	10	-	-		V _{CE} =10V, I _C =0.5A
tf	-	-	0.6	uS	V _{CC} =100V, I _C =0.3A, I _{B1} =-I _{B2} =0.06A

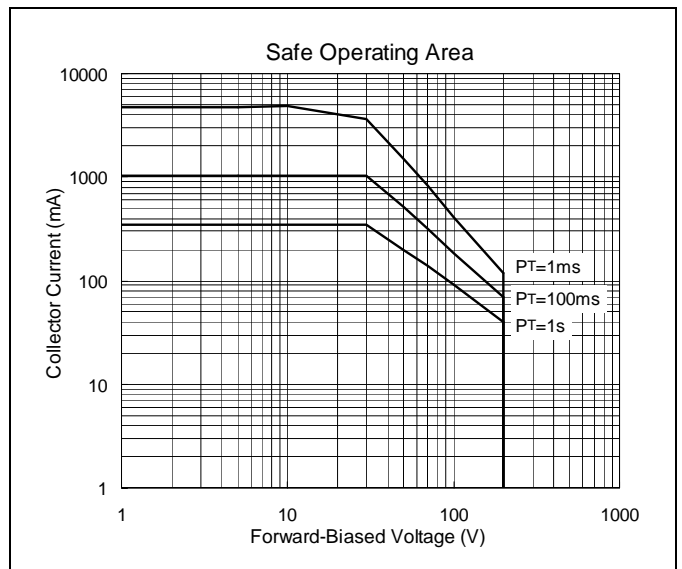
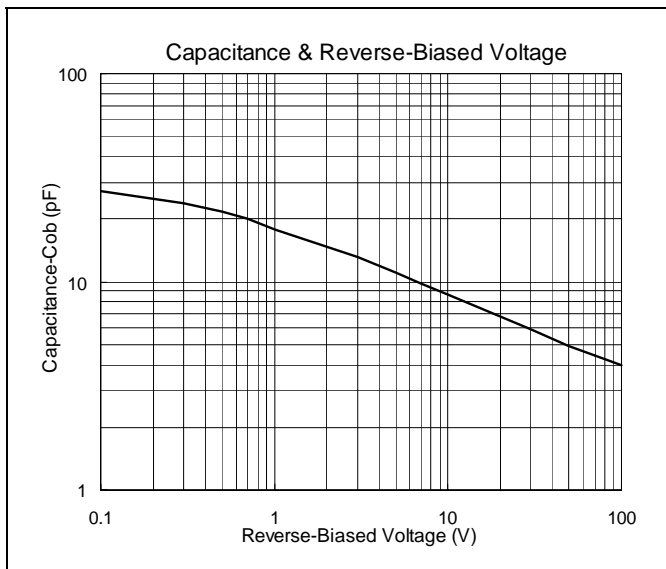
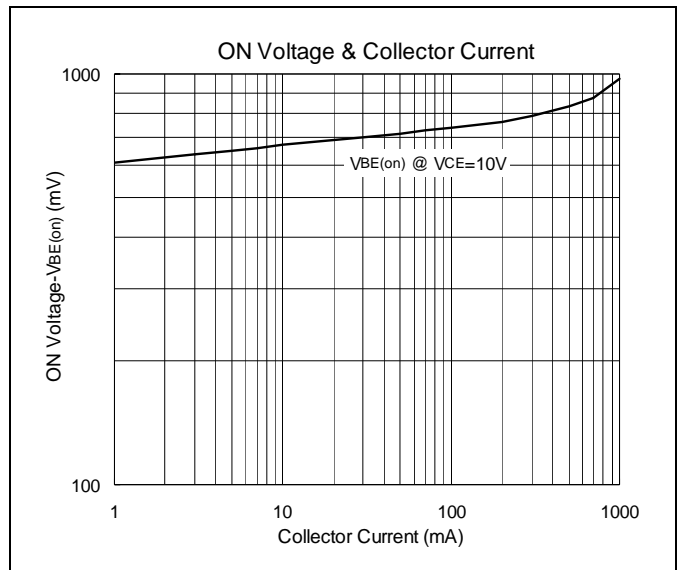
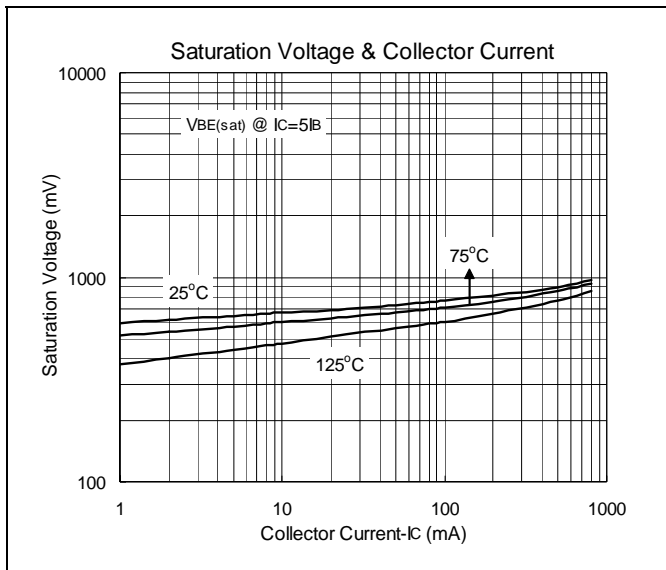
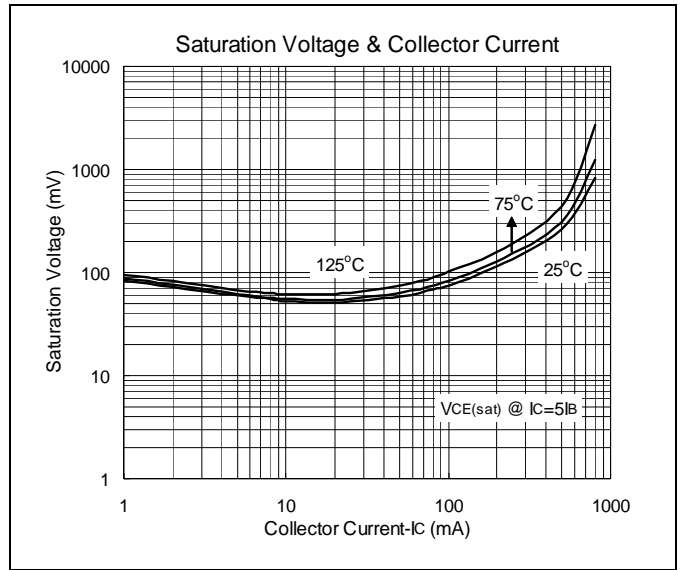
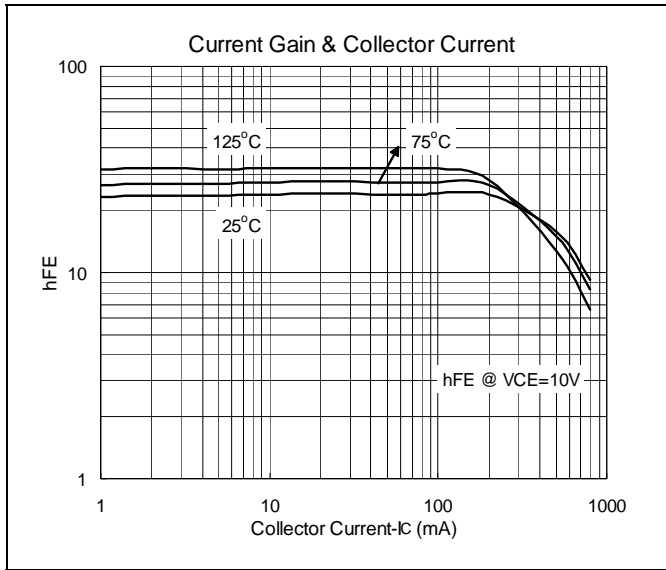
*Pulse Test: Pulse Width ≤380us, Duty Cycle≤2%

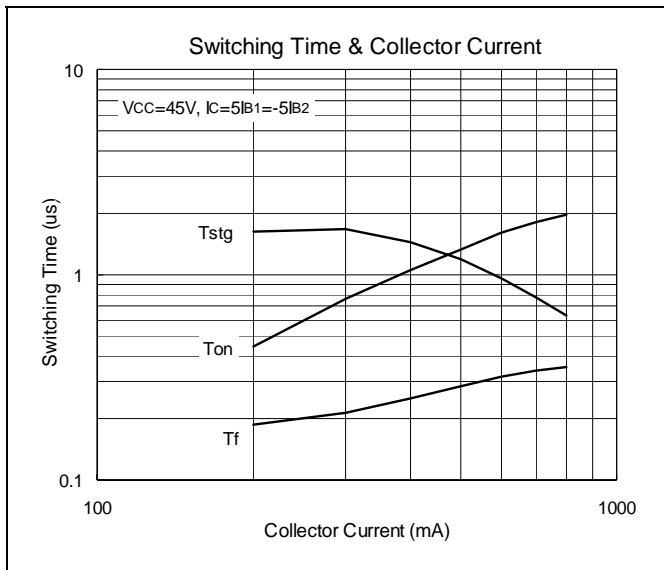
Classification of hFE1

Rank	B1	B2	B3	B4	B5	B6
Range	10-17	13-22	18-27	23-32	28-37	33-40



Characteristics Curve







TO-251 Dimension

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/Tab.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
H1	6.75	8.00
K	0.50	0.90
K1	0.40	0.90
L	0.90	1.50
M	2.20	2.40
a1	0.40	0.65
a2	-	*2.30

*: Typical, Unit: mm

**3-Lead TO-251
 Plastic Package
 HSMC Package Code: I**

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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	6.40	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	-	*1.80
H1	-	*9.30
I	-	*16.10
J	-	*0.80
K	-	0.96
K1	-	*0.76
M	2.20	2.40
a1	0.40	0.60
a2	2.10	2.50
y1	-	5°
y2	-	3°

*: Typical, Unit: mm

**3-Lead TO-251
 Plastic Package
 HSMC Package Code: I**

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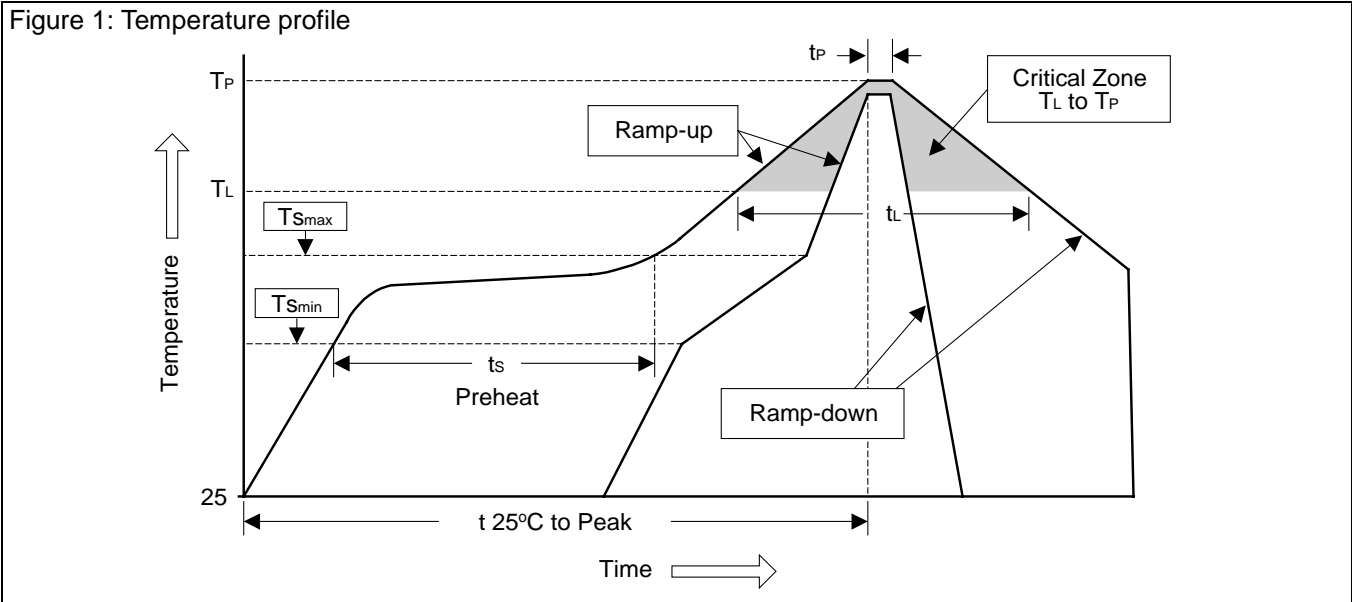
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Soldering Methods for HSMC's Products

1. Storage environment: Temperature=10°C~35°C Humidity=65%±15%
2. Reflow soldering of surface-mount devices



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) (ts)	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