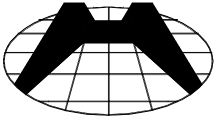
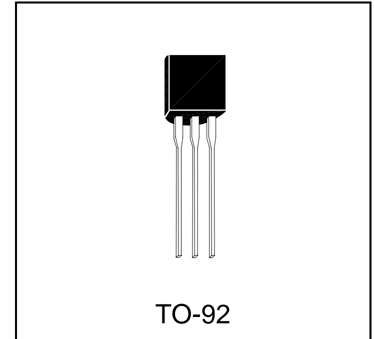


HI-SINCERITY
MICROELECTRONICS CORP.

HE8550

PNP Epitaxial Planar Transistor



TO-92

Description

The HE8550 is designed for use in 2W output amplifier of portable radios in class B push-pull operation.

Absolute Maximum Ratings

- Maximum Temperatures
  Storage Temperature .... -55 ~ +150 °C
  Junction Temperature .... +150 °C Maximum
- Maximum Power Dissipation
  Total Power Dissipation (T_A=25°C) .... 1 W
- Maximum Voltages and Currents (T_A=25°C)
  V_{CBO} Collector to Base Voltage .... -40 V
  V_{CEO} Collector to Emitter Voltage .... -25 V
  V_{EBO} Emitter to Base Voltage .... -6 V
  I_C Collector Current .... -1.5 A
  I_B Base Current .... -0.5 A

Electrical Characteristics (T_A=25°C)

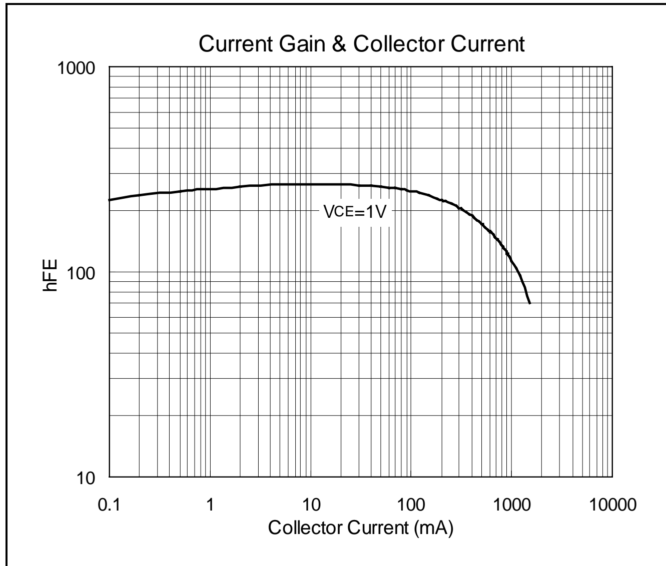
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	-40	-	-	V	I_C=-100uA, I_E=0
BV_{CEO}	-25	-	-	V	I_C=-2mA, I_B=0
BV_{EBO}	-6	-	-	V	I_E=-100uA, I_C=0
I_{CBO}	-	-	-100	nA	V_{CB}=-35V, I_E=0
I_{EBO}	-	-	-100	nA	V_{EB}=-6V, I_C=0
*$V_{CE(sat)}$	-	-	-0.5	V	I_C=-0.8A, I_B=-80mA
*$V_{BE(sat)}$	-	-	-1.2	V	I_C=-0.8A, I_B=-80mA
$V_{BE(on)}$	-	-	-1	V	V_{CE}=-1V, I_C=-10mA
*h_{FE1}	45	-	-		V_{CE}=-1V, I_C=-5mA
*h_{FE2}	120	-	320		V_{CE}=-1V, I_C=-100mA
*h_{FE3}	40	-	-		V_{CE}=-1V, I_C=-800mA
f_T	100	-	-	MHz	V_{CE}=-10V, I_C=-50mA, f=100MHz

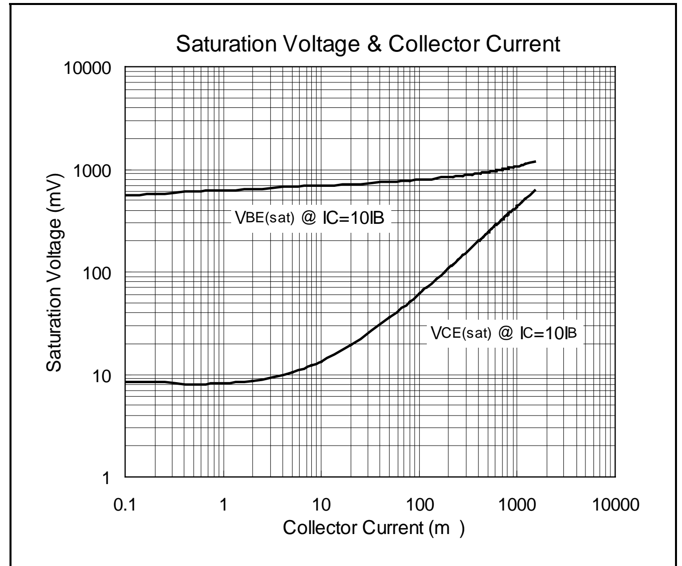
*Pulse Test: Pulse Width ≤380us, Duty Cycle≤2%

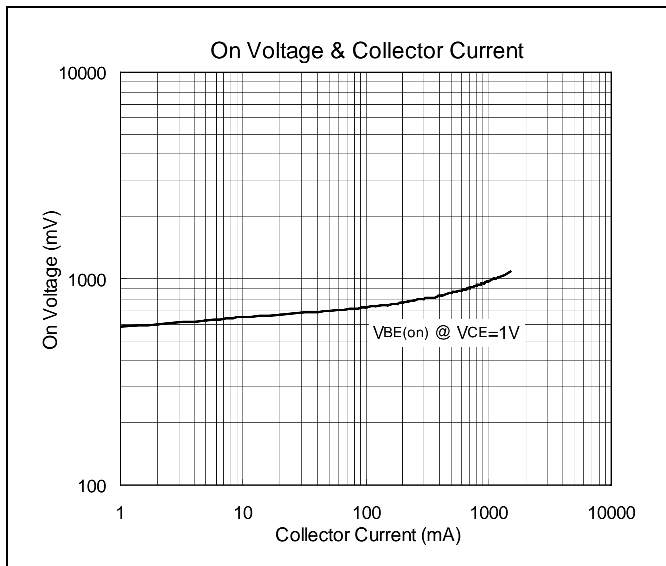
Classification on h_{FE2}

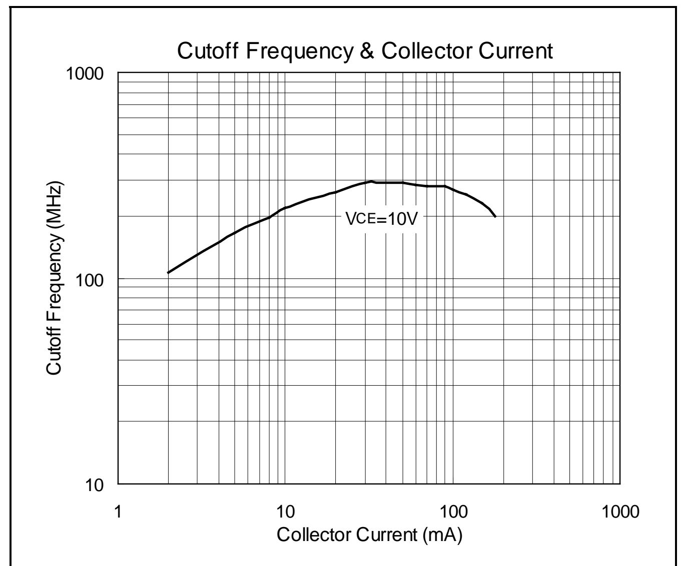
Rank	C	D
Range	120-200	160-320

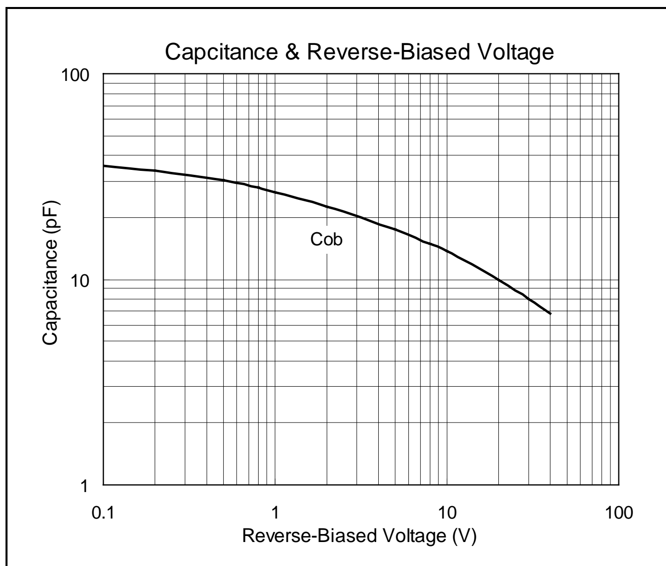
Characteristics Curve

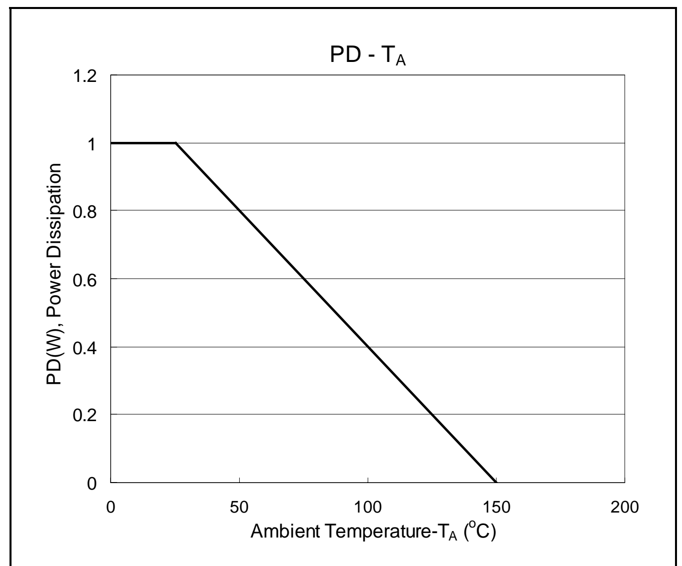












TO-92 Dimension

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.Emitter 2.Collector 3.Base

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	4.33	4.83
B	4.33	4.83
C	12.70	-
D	0.36	0.56
E	-	*1.27
F	3.36	3.76
G	0.36	0.56
H	-	*2.54
I	-	*1.27
α1	-	*5°
α2	-	*2°
α3	-	*2°

*: Typical, Unit: mm

3-Lead TO-92 Plastic Package
HSMC Package Code: A

TO-92 Taping Dimension

DIM	Min.	Max.
A	4.33	4.83
D	3.80	4.20
D1	0.36	0.53
D2	4.33	4.83
F1,F2	2.40	2.90
H	15.50	16.50
H1	8.50	9.50
H2	-	1
H2A	-	1
H3	-	27
H4	-	21
L	-	11
L1	2.50	-
P	12.50	12.90
P1	5.95	6.75
P2	50.30	51.30
T	-	0.55
T1	-	1.42
T2	0.36	0.68
W	17.50	19.00
W1	5.00	7.00

Unit: mm

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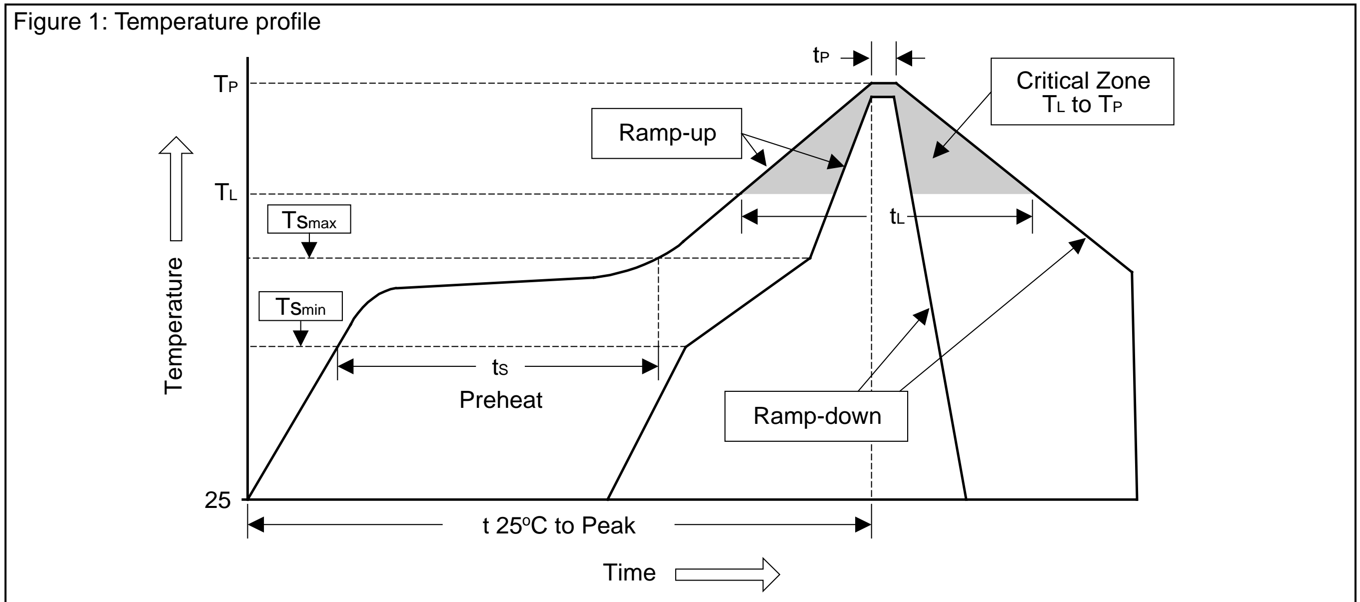
  Tel: 886-3-5983621~5 Fax: 886-3-5982931

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	10sec ±1sec
Pb-Free devices.	260ºC ±5ºC	10sec ±1sec