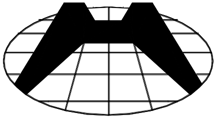
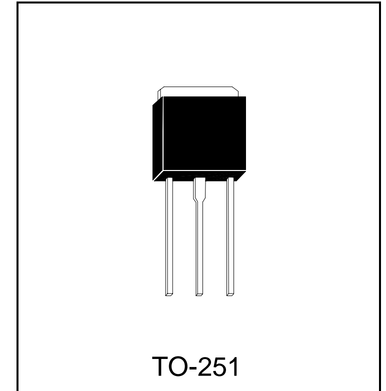


HI-SINCERITY
MICROELECTRONICS CORP.

HI32C

PNP EPITAXIAL PLANAR TRANSISTOR



Description

The HI32C is designed for use in general purpose amplifier and low speed switching applications.

Absolute Maximum Ratings (T_A=25°C)

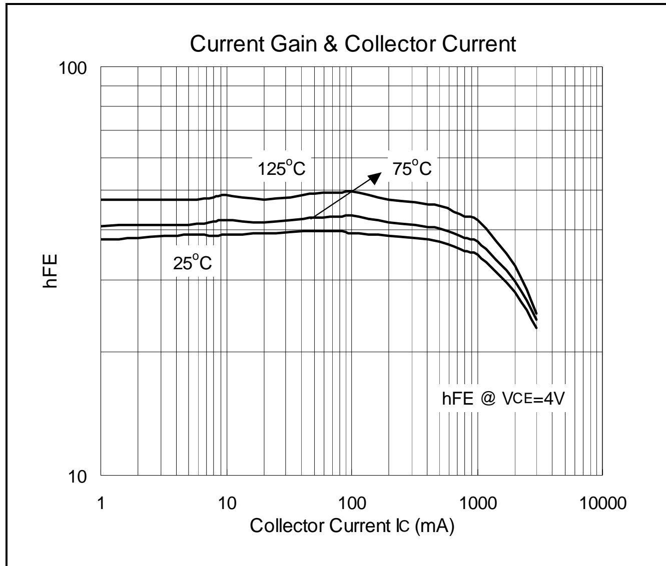
- Maximum Temperatures
  Storage Temperature .... -55 ~ +150 °C
  Junction Temperature .... +150 °C
- Maximum Power Dissipation
  Total Power Dissipation (T_C=25°C) 15W
- Maximum Voltages and Currents
  BV_{CBO} Collector to Base Voltage .... -100 V
  BV_{CEO} Collector to Emitter Voltage .... -100 V
  BV_{EBO} Emitter to Base Voltage .... -5 V
  I_C Collector Current .... -3 A

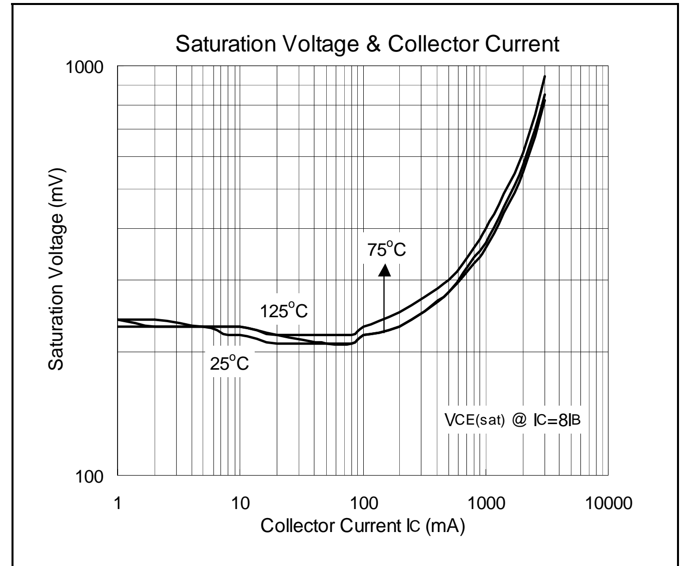
Electrical Characteristics (T_A=25°C)

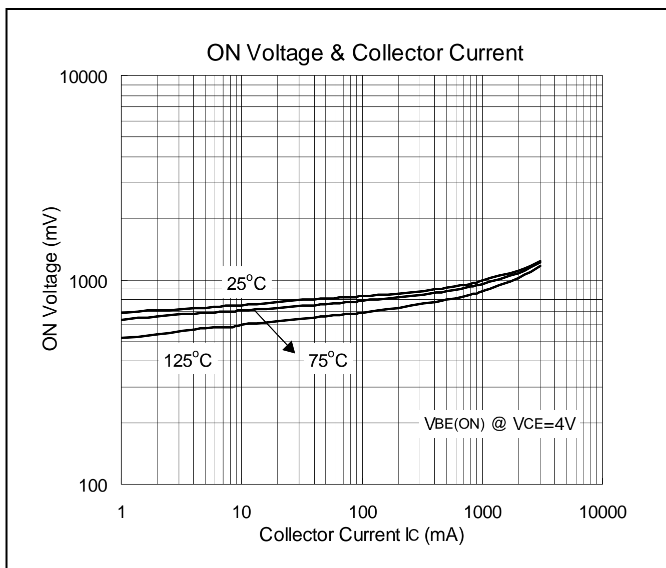
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	-100	-	-	V	I_C=-1mA, I_E=0
BV_{CEO}	-100	-	-	V	I_C=-30mA, I_B=0
I_{CES}	-	-	-20	uA	V_{CE}=-100V, V_{BE}=0
I_{CEO}	-	-	-50	uA	V_{CE}=-60V, I_B=0
I_{EBO}	-	-	-1	mA	V_{EB}=-5V, I_C=0
*$V_{CE(sat)}$	-	-	-1.2	V	I_C=-3A, I_B=-375mA
*$V_{BE(on)}$	-	-	-1.8	V	V_{CE}=-4V, I_C=-3A
*h_{FE1}	25	-	-		V_{CE}=-4V, I_C=-1A
*h_{FE2}	10	-	50		V_{CE}=-4V, I_C=-3A
f_T	3	-	-	MHz	V_{CE}=-10V, I_C=-500mA, f=1MHz

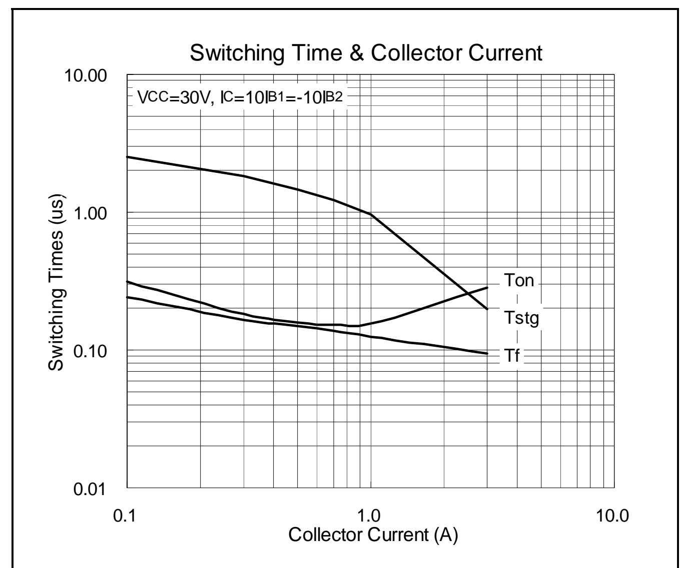
*Pulse Test: Pulse Width ≤380us, Duty Cycle≤2%

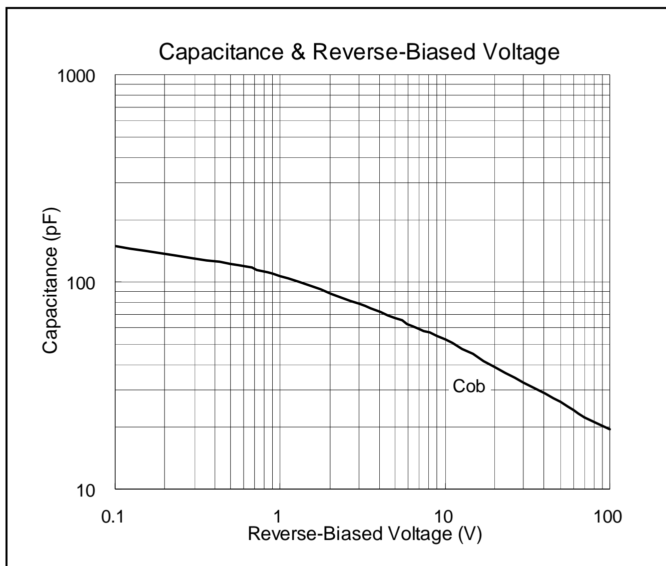
Characteristics Curve

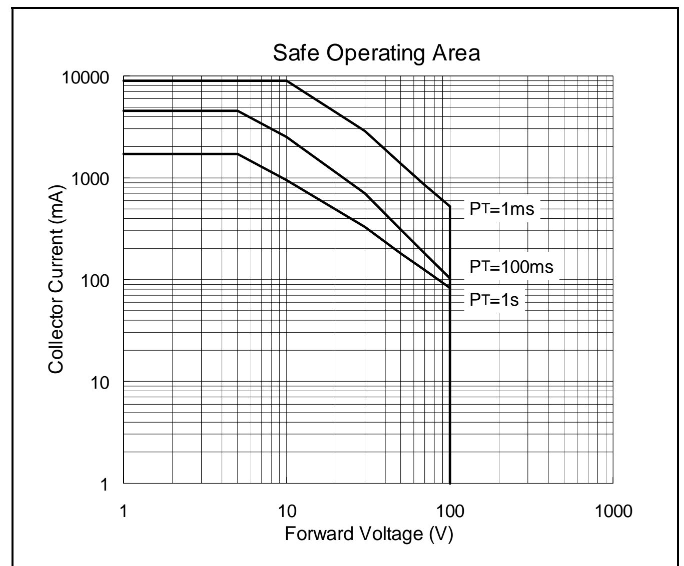












TO-251 Dimension

Marking:

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

H I
3 2 C

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

Marking:

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

H I
3 2 C

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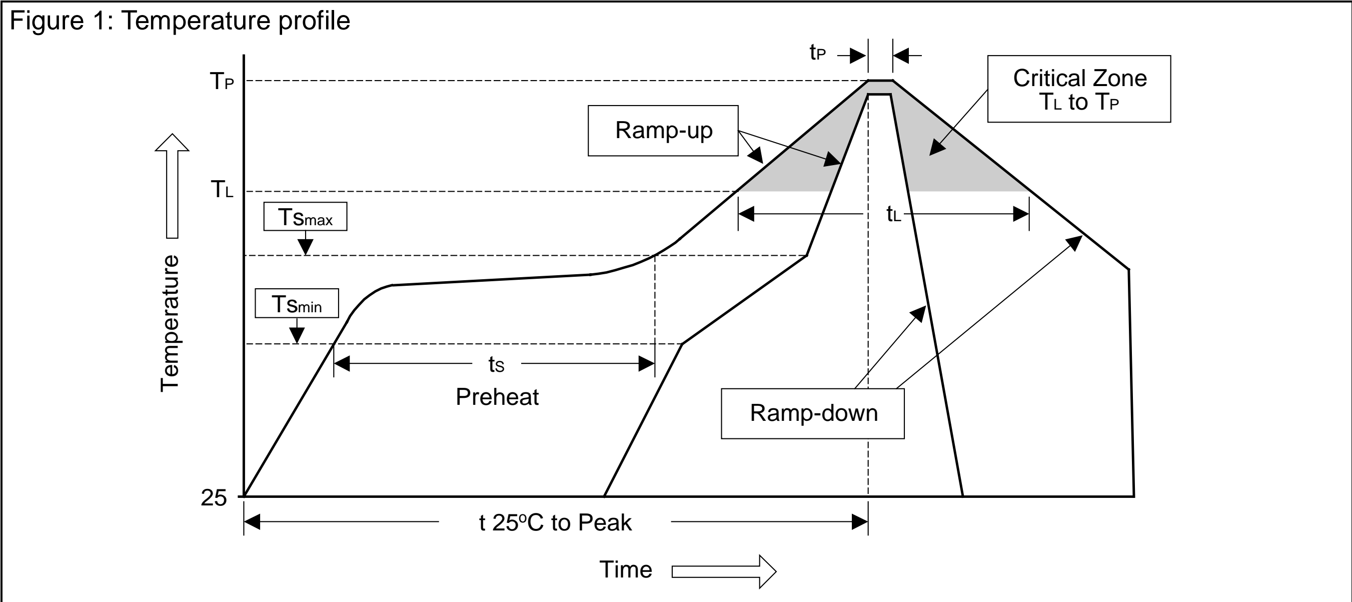
  Tel: 886-3-5983621~5 Fax: 886-3-5982931

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	5sec ±1sec
Pb-Free devices.	260ºC +0/-5ºC	5sec ±1sec