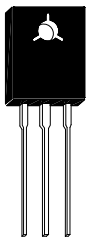
HSD669AT

NPN Epitaxial Planar Transistor



TO-126

Description

Low frequency power amplifier complementary pair with HSB649A

Absolute Maximum Ratings (T_A=25°C)

- Maximum Temperatures
  - Storage Temperature ..... -55 ~ +150 °C
  - Junction Temperature ..... +150 °C Maximum
- Maximum Power Dissipation
  - Total Power Dissipation (T_A=25°C) ..... 1 W
  - Total Power Dissipation (T_C=25°C) ..... 20 W
- Maximum Voltages and Currents
  - BV_{CBO} Collector to Base Voltage ..... 180 V
  - BV_{CEO} Collector to Emitter Voltage ..... 160 V
  - BV_{EBO} Emitter to Base Voltage ..... 5 V
  - I_C Collector Current (DC) ..... 1.5 A
  - I_C Collector Current (Pulse) ..... 3 A

Electrical Characteristics (T_A=25°C)

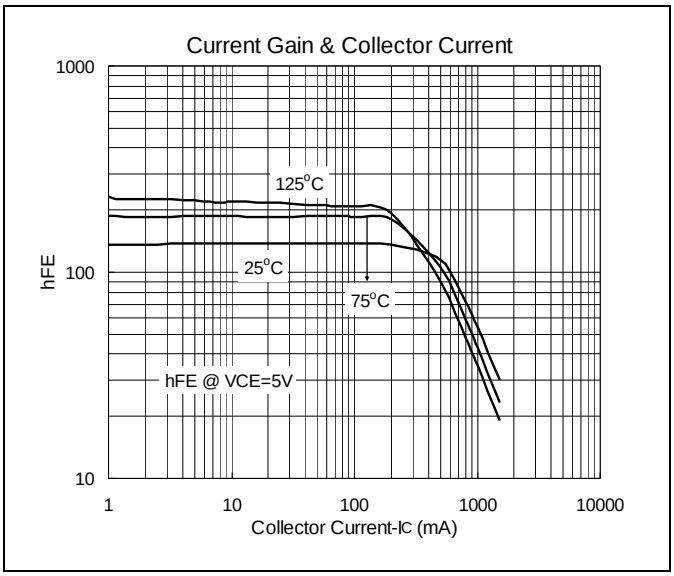
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	180	-	-	V	I_C=1mA, I_E=0
BV_{CEO}	160	-	-	V	I_C=10mA, I_B=0
BV_{EBO}	5	-	-	V	I_E=1mA, I_C=0
I_{CBO}	-	-	10	uA	V_{CB}=160V, I_E=0
*$V_{CE(sat)}$	-	-	1	V	I_C=500mA, I_B=50mA
$V_{BE(on)}$	-	-	1.5	V	I_C=150mA, V_{CE}=5V
*h_{FE1}	100	-	200		I_C=150mA, V_{CE}=5V
*h_{FE2}	30	-	-		I_C=500mA, V_{CE}=5V
f_T	-	140	-	MHz	I_C=150mA , V_{CE}=5V
Cob	-	14	-	pF	V_{CB}=10V, f=1MHz, I_E=0

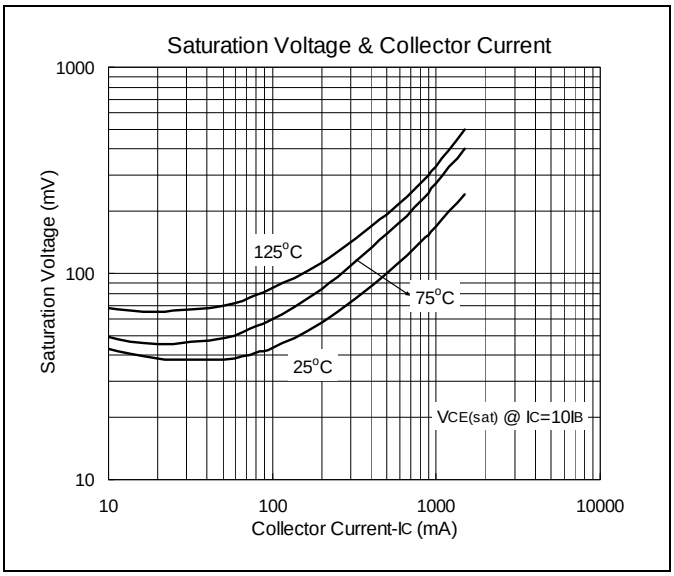
*Pulse Test: Pulse Width ≤380us, Duty Cycle≤2%

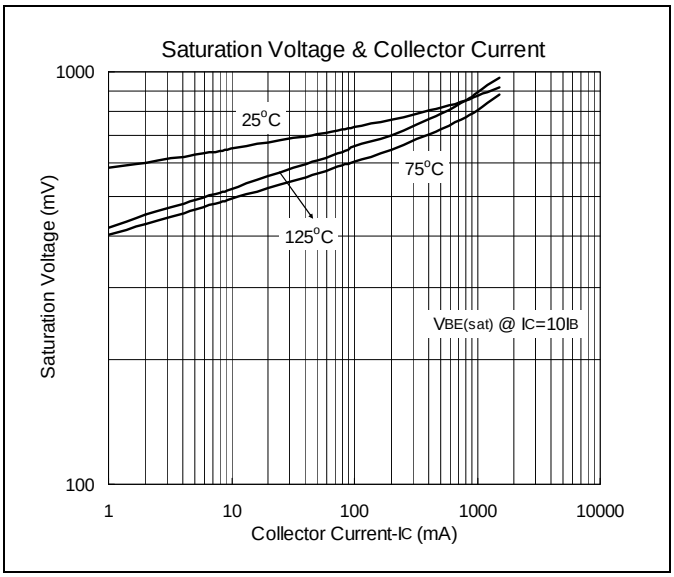
Classification Of h_{FE1}

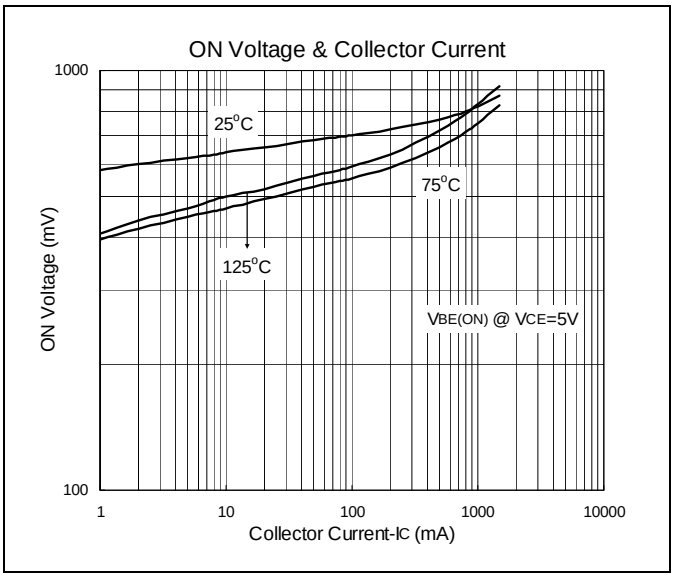
Rank	C
Range	100-200

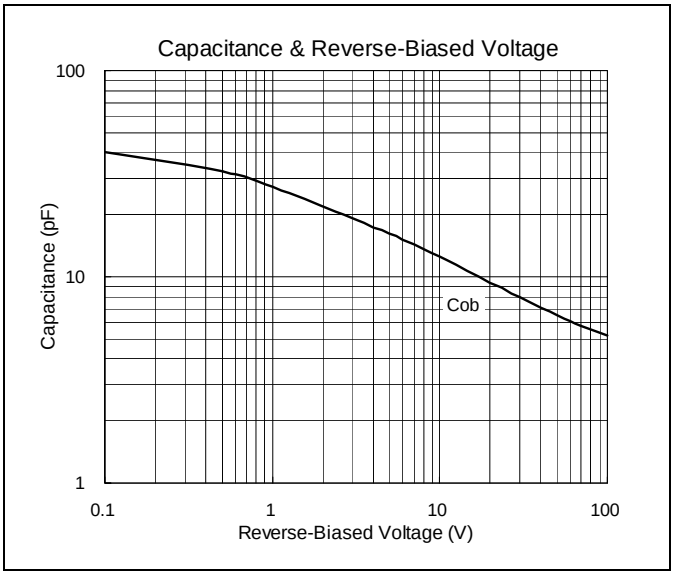
Characteristics Curve

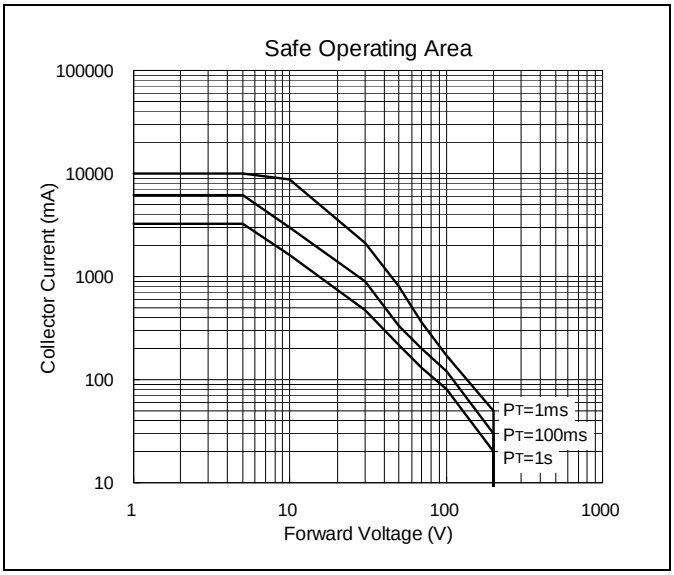




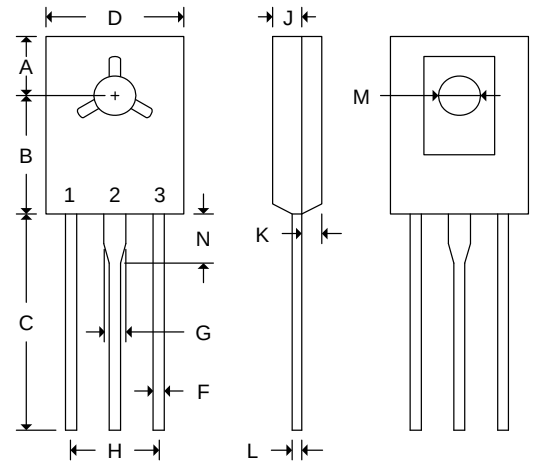




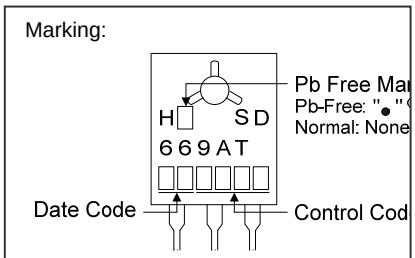




TO-126 Dimension



3-Lead TO-126
Plastic Package
HSMC Package Code: T



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)

DIM	Min.	Max.
A	3.60	4.40
B	6.90	7.60
C	13.00	16.50
D	7.20	8.50
F	0.65	0.88
G	1.00	1.42
H	4.52	4.62
J	1.14	1.50
K	0.90	1.50
L	0.45	0.60
M	2.92	3.40
N	2.00	2.70

*: Typical, Unit: mm

Head Office And Factory:

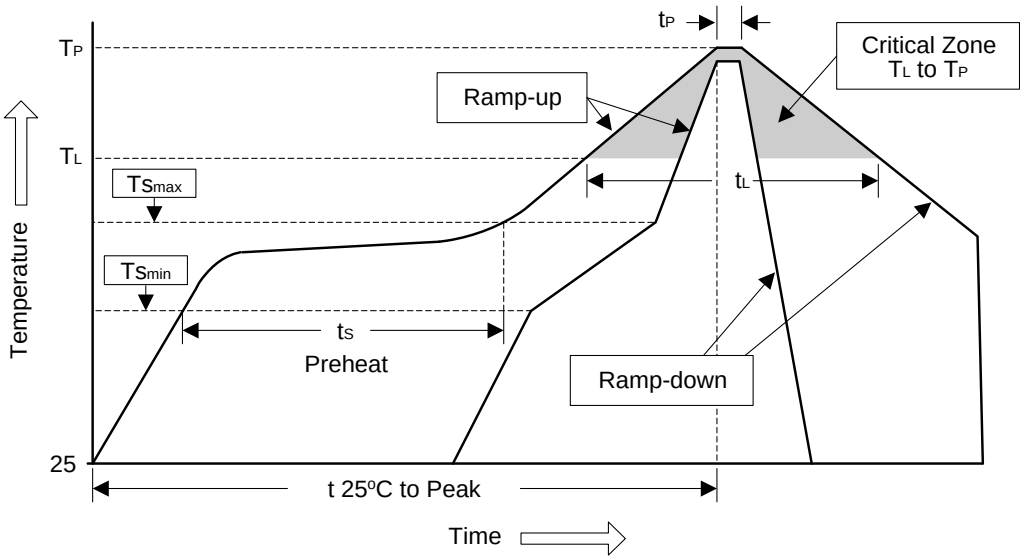
- **Head Office** (Hi-Sincerity Microelectronics Corp.): 10F.,No. 61, Sec. 2, Chung-Shan N. Rd. Taipei Taiwan R.O.C.
  Tel: 886-2-25212056 Fax: 886-2-25632712, 25368454

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°C/sec	<3°C/sec
Preheat - Temperature Min (Ts_{min}) - Temperature Max (Ts_{max}) - Time (min to max) (ts)	 100°C 150°C 60~120 sec	 150°C 200°C 60~180 sec
Tsmax to T_L - Ramp-up Rate	 <3°C/sec	 <3°C/sec
Time maintained above: - Temperature (T_L) - Time (t_L)	 183°C 60~150 sec	 217°C 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	10sec ±1sec
Pb-Free devices.	260°C ±5°C	10sec ±1sec