



HSD880

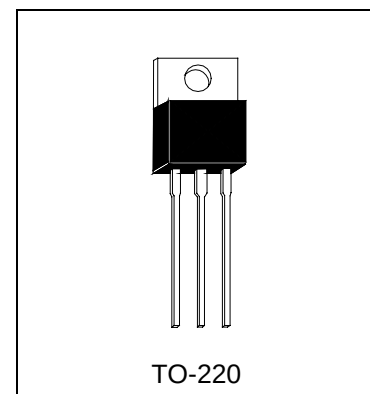
NPN EPITAXIAL PLANAR TRANSISTOR

Description

The HSD880 is designed for low frequency power amplifier applications.

Features

- High DC Current Gain
- High Power Dissipation: $P_C=30W$ at $T_C=25^{\circ}C$



TO-220

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

- Maximum Temperatures
Storage Temperature $-50 \sim +150^{\circ}C$
Junction Temperature $+150^{\circ}C$ Maximum
- Maximum Power Dissipation
Total Power Dissipation ($T_C=25^{\circ}C$) 30 W
Total Power Dissipation ($T_A=25^{\circ}C$) 1.5 W
- Maximum Voltages and Currents
 BV_{CBO} Collector to Base Voltage 60 V
 BV_{CEO} Collector to Emitter Voltage 60 V
 BV_{EBO} Emitter to Base Voltage 7 V
 I_C Collector Current 3 A
 I_B Base Current 0.5 A

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

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	60	-	-	V	$I_C=1mA, I_E=0$
BV_{CEO}	60	-	-	V	$I_C=50mA, I_B=0$
I_{CBO}	-	-	100	μA	$V_{CB}=60V, I_E=0$
I_{EBO}	-	-	100	μA	$V_{EB}=7V, I_C=0$
$*V_{CE(sat)}$	-	-	1	V	$I_C=3A, I_B=0.3A$
$*V_{BE(on)}$	-	-	1	V	$I_C=0.5A, V_{CE}=5V$
$*h_{FE}$	60	-	300		$I_C=0.5A, V_{CE}=5V$
f_T	-	3	-	MHz	$I_C=500mA, V_{CE}=5V$

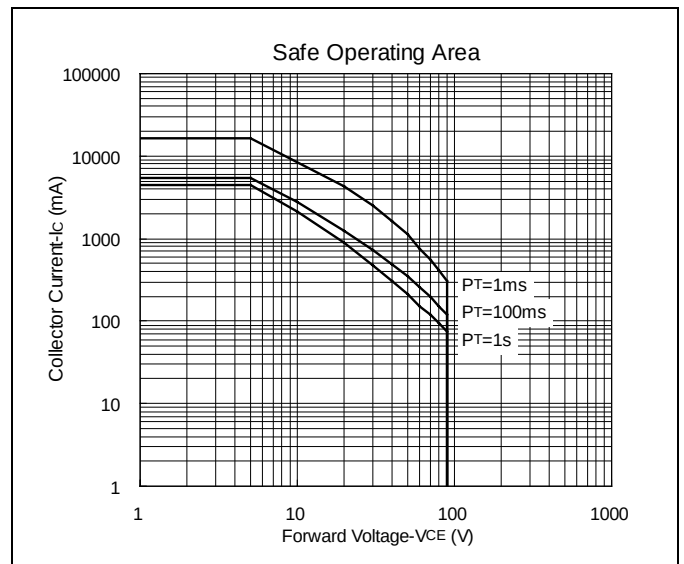
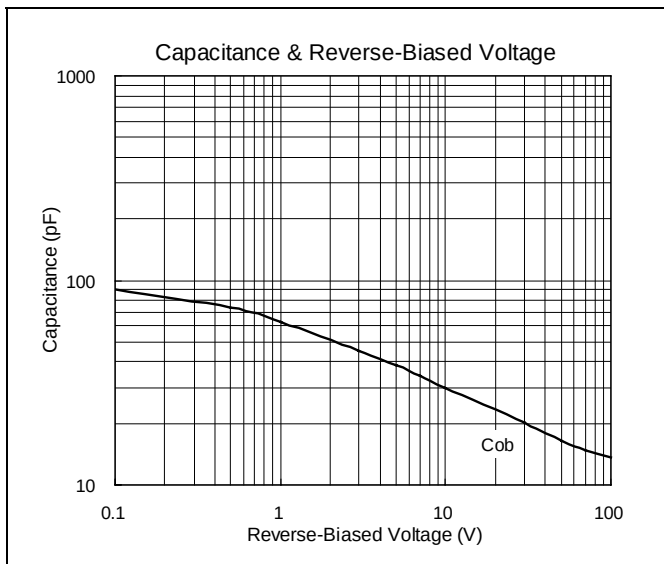
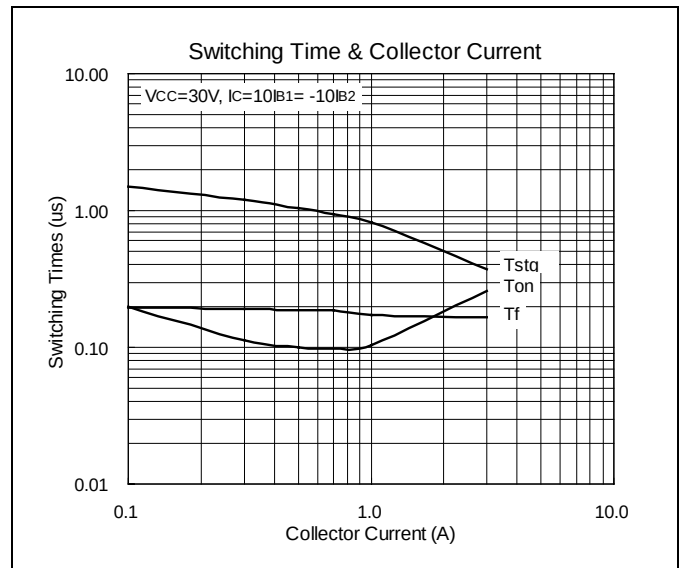
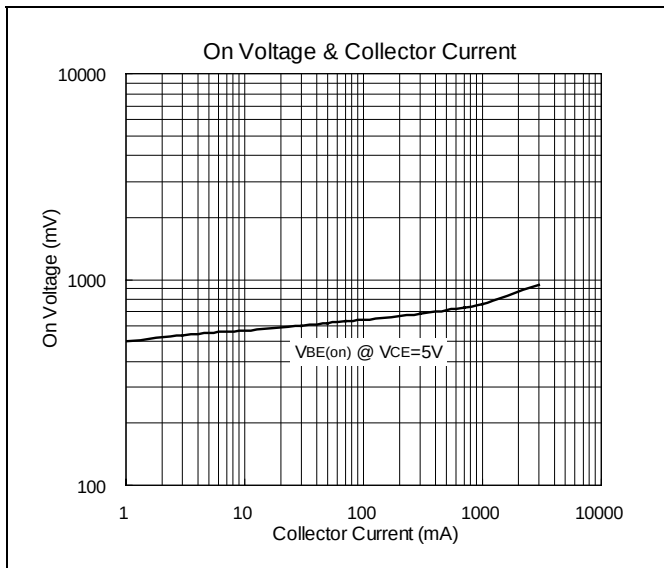
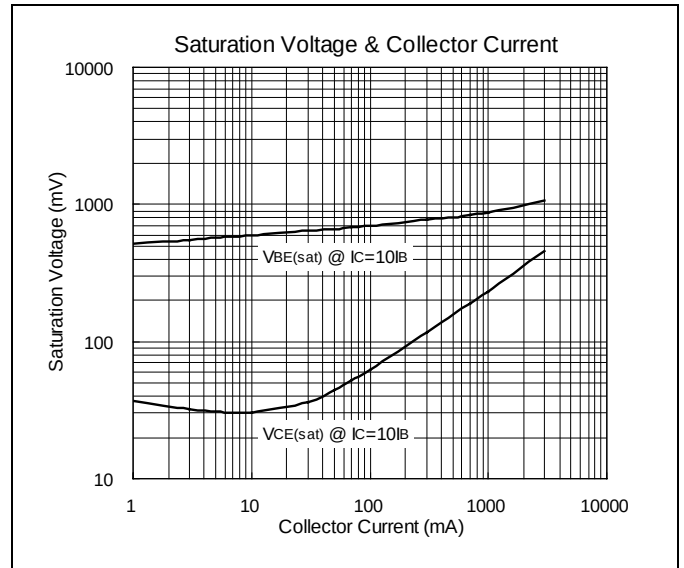
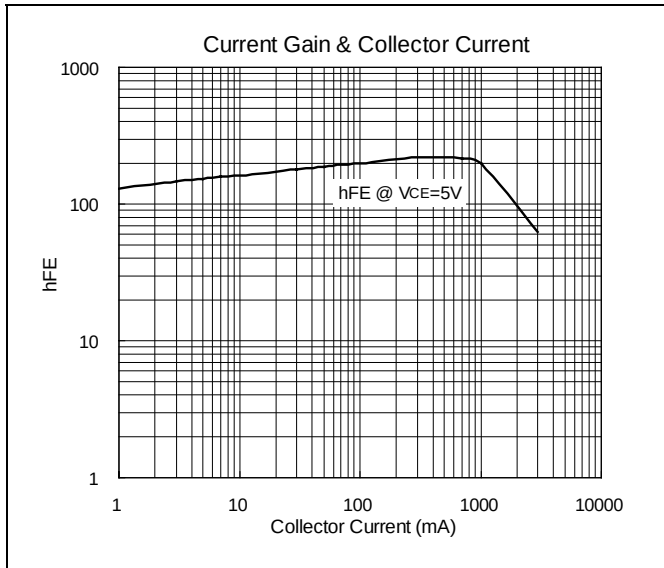
*Pulse Test: Pulse Width $\leq 380\mu s$, Duty Cycle $\leq 2\%$

Classification Of h_{FE}

Rank	O	Y	GR
Range	60-120	100-200	150-300

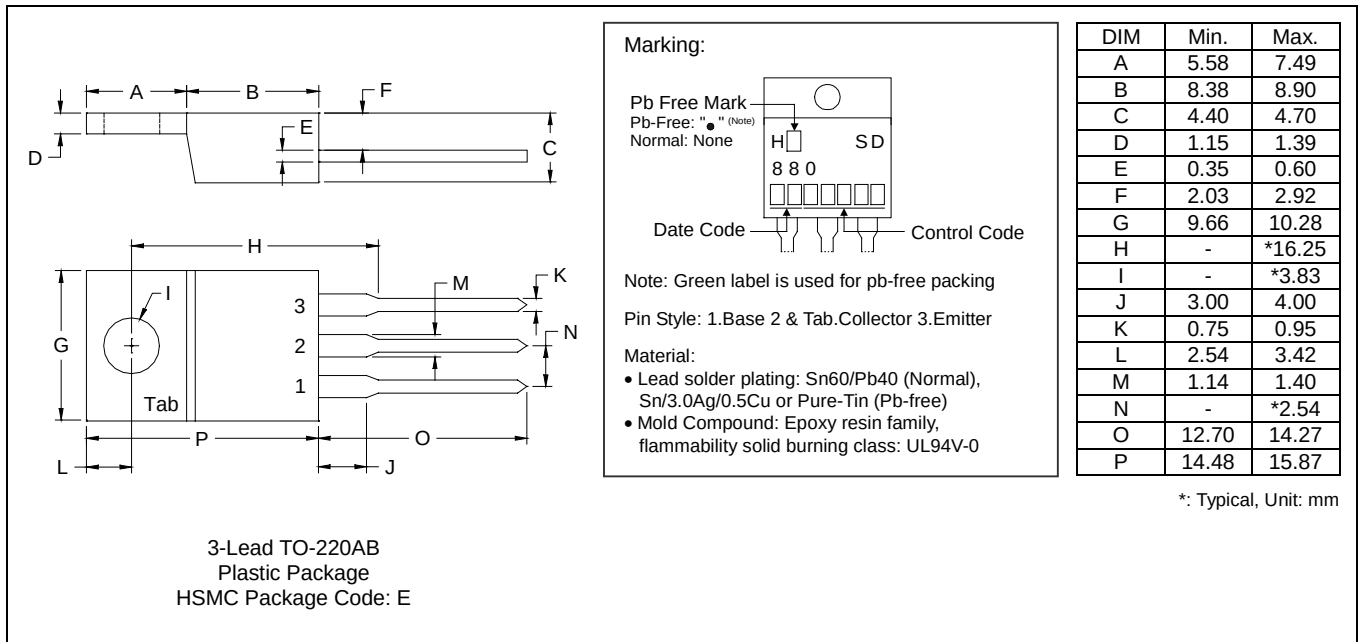


Characteristics Curve





TO-220AB Dimension



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Head Office And Factory:

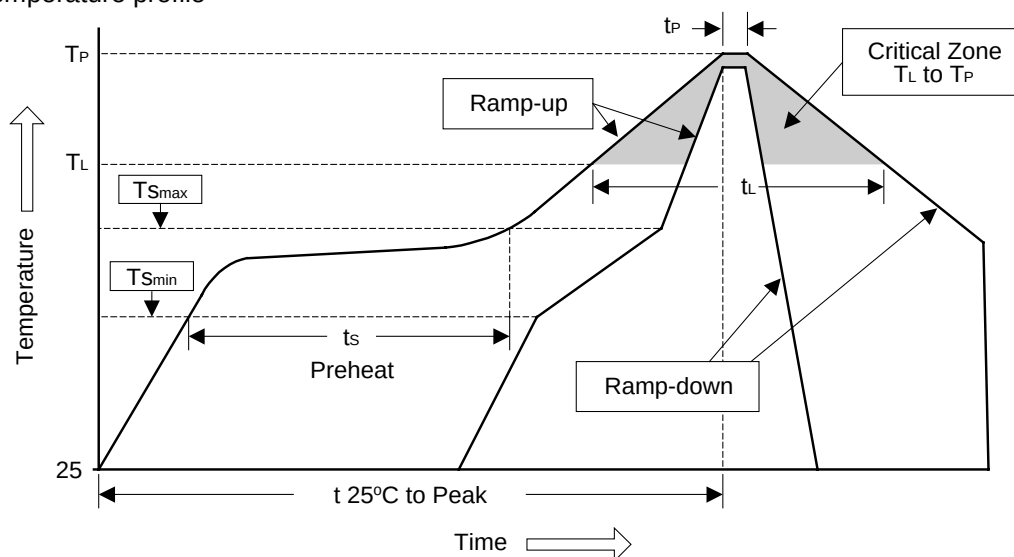
- **Head Office** (Hi-Sincerity Microelectronics Corp.): 10F., No. 61, Sec. 2, Chung-Shan N. Rd. Taipei Taiwan R.O.C.
Tel: 886-2-25212056 Fax: 886-2-25632712, 25368454
- **Factory 1:** No. 38, Kuang Fu S. Rd., Fu-Kou Hsin-Chu Industrial Park Hsin-Chu Taiwan. R.O.C
Tel: 886-3-5983621~5 Fax: 886-3-5982931



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 (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°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