



# HBC546

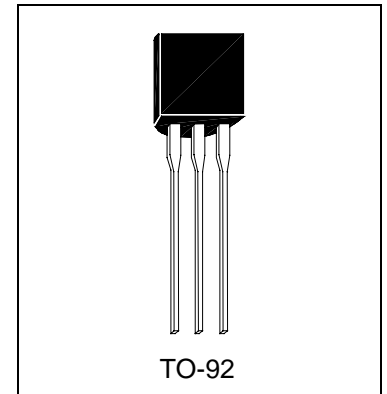
NPN EPITAXIAL PLANAR TRANSISTOR

## Description

The HBC546 is primarily intended for use in driver stage of audio amplifiers.

## Features

- High Breakdown Voltage: 65V
- High DC Current Gain: 110-800 at  $I_C=2\text{mA}$   $V_{CE}=5\text{V}$



## Absolute Maximum Ratings

- Maximum Temperatures  
Storage Temperature ..... -55 ~ +150 °C  
Junction Temperature ..... +150 °C Maximum
- Maximum Power Dissipation  
Total Power Dissipation ( $T_a=25^\circ\text{C}$ ) ..... 625 mW
- Maximum Voltages and Currents ( $T_a=25^\circ\text{C}$ )  
VCBO Collector to Base Voltage ..... 80 V  
VCEO Collector to Emitter Voltage ..... 65 V  
VEBO Emitter to Base Voltage ..... 6 V  
IC Collector Current ..... 100 mA

## Characteristics ( $T_a=25^\circ\text{C}$ )

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BVCBO	80	-	-	V	$I_C=100\mu\text{A}$ , $I_E=0$
BVCEO	65	-	-	V	$I_C=1\text{mA}$ , $I_B=0$
BVEBO	6	-	-	V	$I_E=10\mu\text{A}$ , $I_C=0$
ICBO	-	-	15	nA	$V_{CB}=30\text{V}$ , $I_E=0$
VBE(on)1	-	-	770	mV	$I_C=10\text{mA}$ , $V_{CE}=5\text{V}$
VBE(on)2	580	-	700	mV	$I_C=2\text{mA}$ , $V_{CE}=5\text{V}$
*VCE(sat)1	-	-	250	mV	$I_C=10\text{mA}$ , $I_B=0.5\text{mA}$
*VCE(sat)2	-	-	600	mV	$I_C=100\text{mA}$ , $I_B=5\text{mA}$
*VBE(sat)1	-	700	-	mV	$I_C=10\text{mA}$ , $I_B=0.5\text{mA}$
*VBE(sat)2	-	900	-	mV	$I_C=100\text{mA}$ , $I_B=5\text{mA}$
*hFE	110	-	800		$V_{CE}=5\text{V}$ , $I_C=2\text{mA}$
fT	-	300		MHz	$V_{CE}=5\text{V}$ , $I_C=10\text{mA}$ , $f=100\text{MHz}$
Cob	-	-	4.5	PF	$V_{CB}=10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$

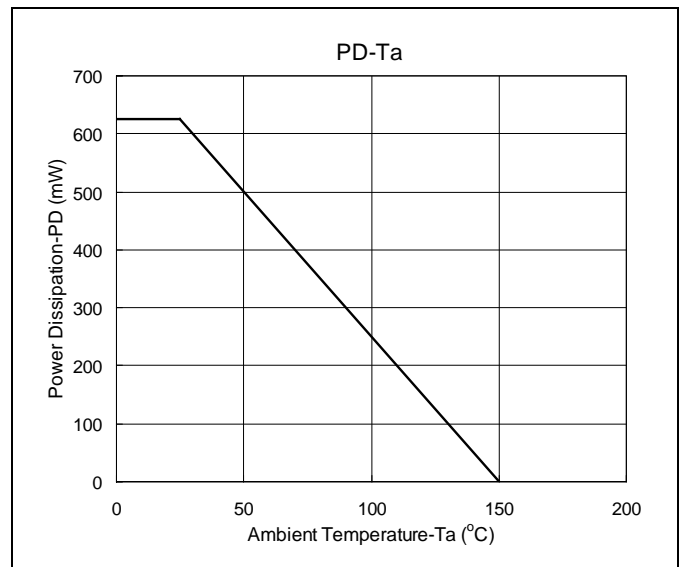
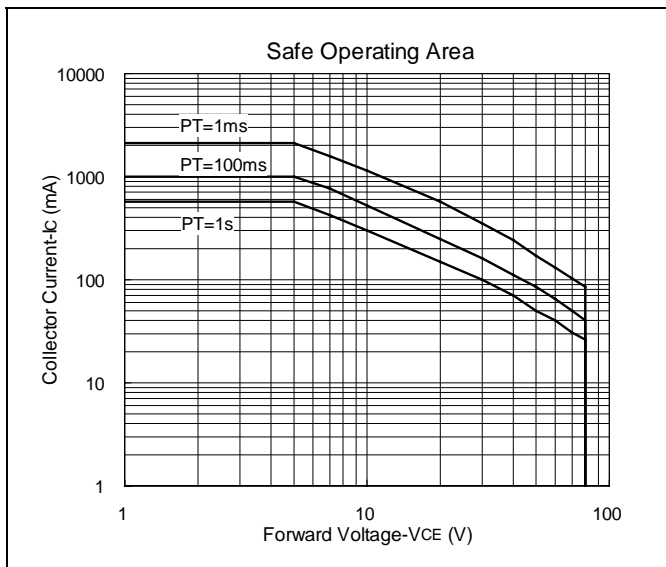
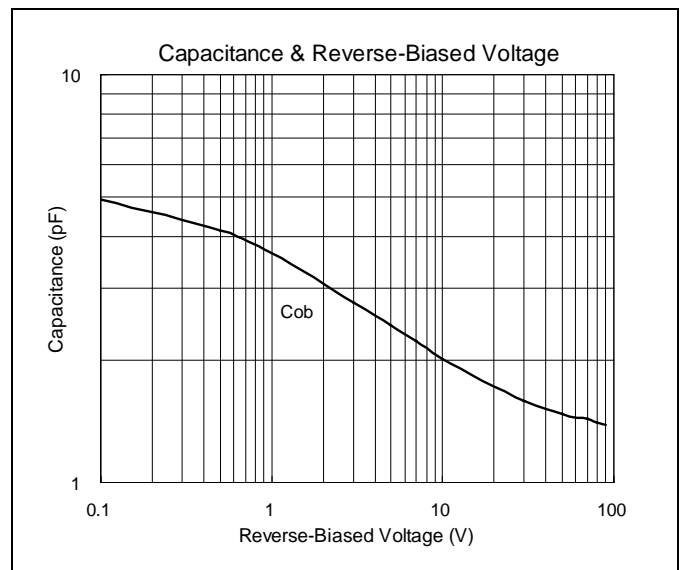
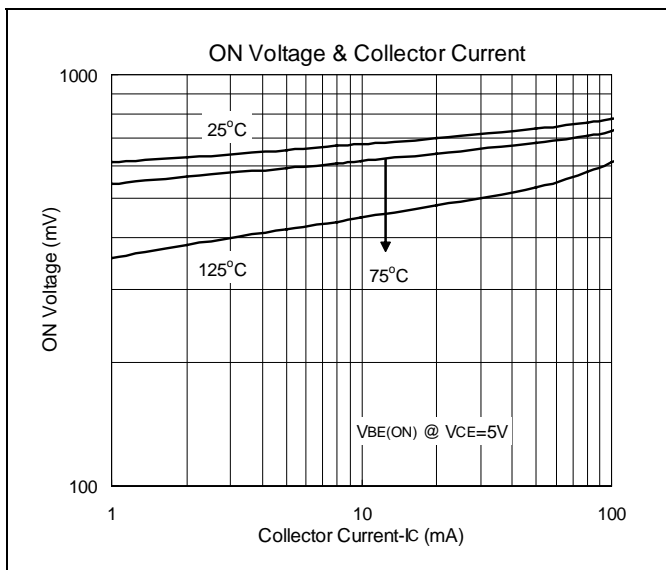
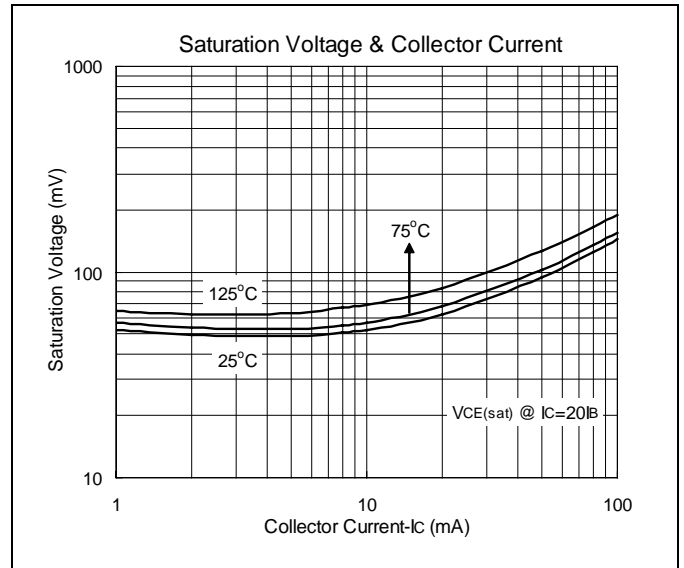
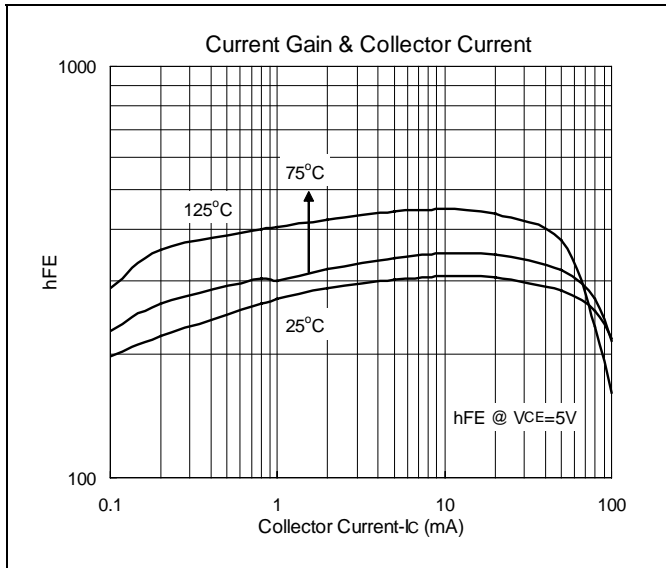
\*Pulse Test: Pulse Width  $\leq 380\mu\text{s}$ , Duty Cycle  $\leq 2\%$

## Classification of hFE

Rank	A	B	C
Range	110-220	200-450	420-800

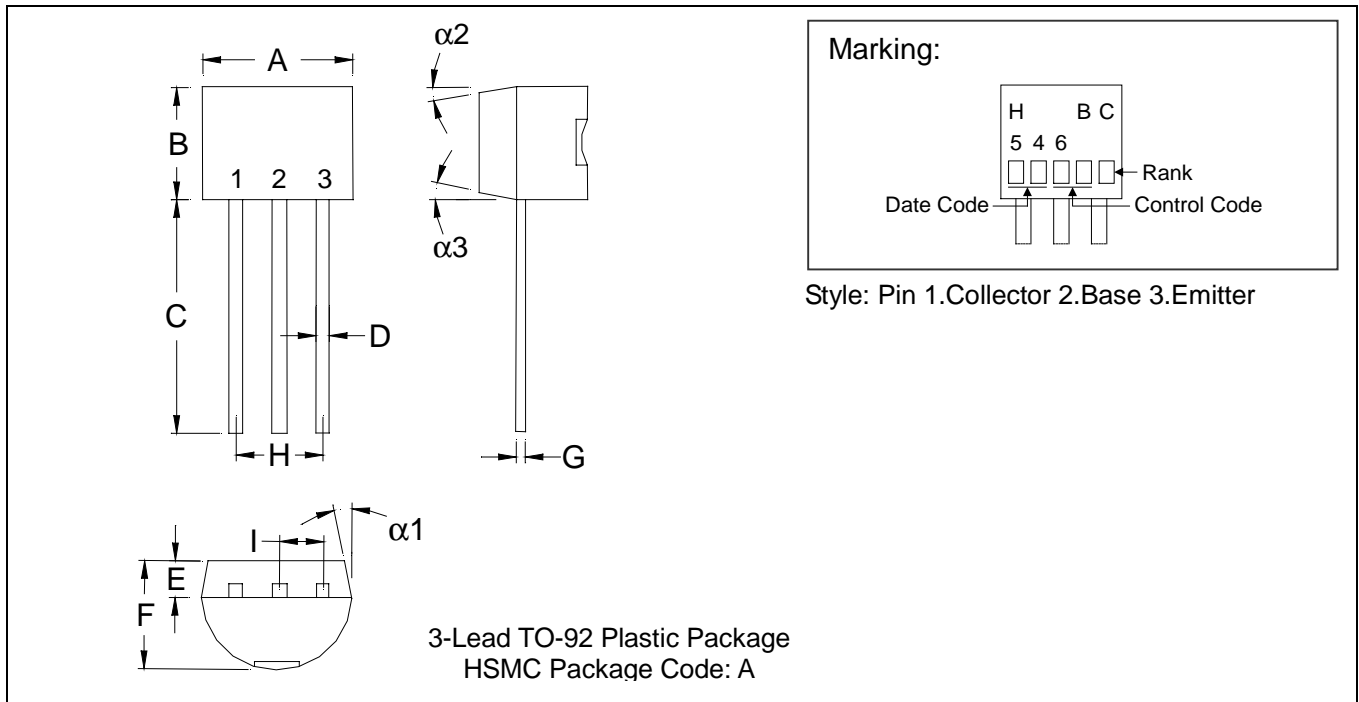


### Characteristics Curve





### TO-92 Dimension



\*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1704	0.1902	4.33	4.83	G	0.0142	0.0220	0.36	0.56
B	0.1704	0.1902	4.33	4.83	H	-	*0.1000	-	*2.54
C	0.5000	-	12.70	-	I	-	*0.0500	-	*1.27
D	0.0142	0.0220	0.36	0.56	$\alpha 1$	-	*5°	-	*5°
E	-	*0.0500	-	*1.27	$\alpha 2$	-	*2°	-	*2°
F	0.1323	0.1480	3.36	3.76	$\alpha 3$	-	*2°	-	*2°

- Notes:**
- 1.Dimension and tolerance based on our Spec. dated Apr. 25,1996.
  - 2.Controlling dimension: millimeters.
  - 3.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
  - 4.If there is any question with packing specification or packing method, please contact your local HSMC sales office.

**Material:**

- Lead: 42 Alloy; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

**Important Notice:**

- All rights are reserved. Reproduction in whole or in part is prohibited without the prior written approval of HSMC.
- HSMC reserves the right to make changes to its products without notice.
- **HSMC semiconductor products are not warranted to be suitable for use in Life-Support Applications, or systems.**
- HSMC assumes no liability for any consequence of customer product design, infringement of patents, or application assistance.

**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