

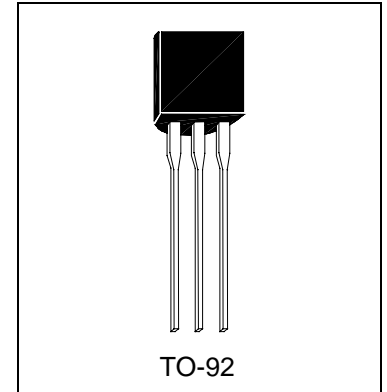


# HSD1609S

NPN EPITAXIAL PLANAR TRANSISTOR

## Description

The HSD1609S is designed for low frequency high voltage amplifier applications, complementary pair with HSB1109S.



## Absolute Maximum Ratings

- Maximum Temperatures  
Storage Temperature ..... -50 ~ +150 °C  
Junction Temperature ..... 150 °C Maximum
- Maximum Power Dissipation  
Total Power Dissipation (Ta=25°C) ..... 900 mW
- Maximum Voltages and Currents (Ta=25°C)  
VCBO Collector to Base Voltage ..... 160 V  
VCEO Collector to Emitter Voltage ..... 160 V  
VEBO Emitter to Base Voltage ..... 5 V  
IC Collector Current ..... 100 mA

## Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BVCBO	160	-	-	V	IC=10uA, IE=0
BVCEO	160	-	-	V	IC=1mA, IB=0
BVEBO	5	-	-	V	IE=10uA, IC=0
ICBO	-	-	10	uA	VCB=140V, IE=0
*VCE(sat)	-	-	2	V	IC=30mA, IB=3mA
VBE(on)	-	-	1.5	V	VCE=5V, IC=10mA
*hFE1	60	-	320		VCE=5V, IC=10mA
*hFE2	30	-	-		VCE=5V, IC=1mA
fT	-	140	-	MHz	VCE=5V, IC=10mA
Cob	-	3.8	-	pF	IE=0, VCB=10V, f=1MHZ

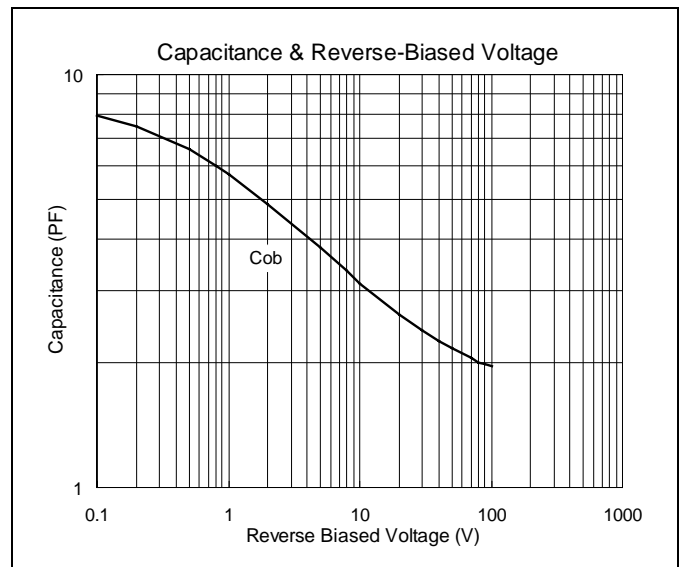
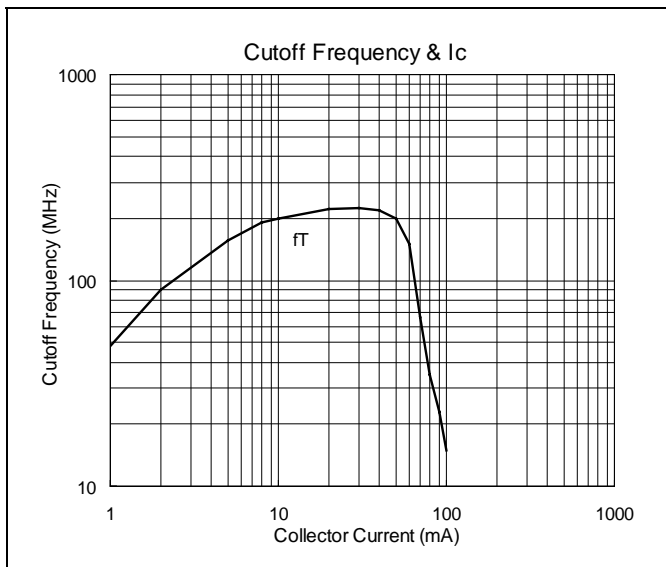
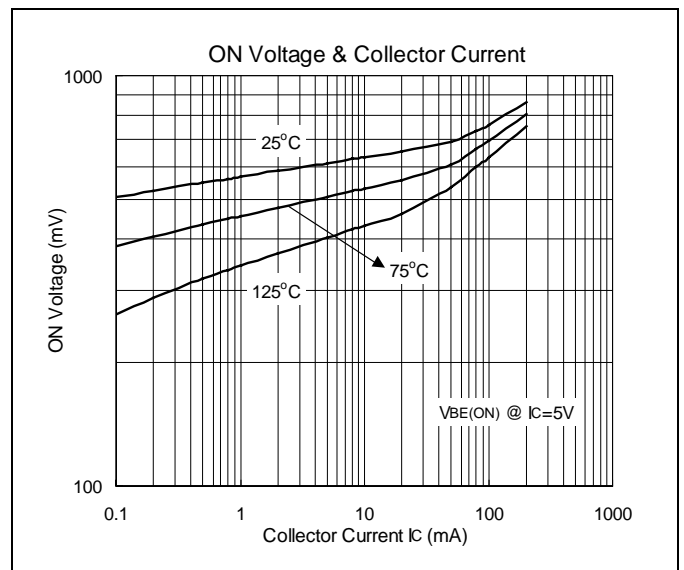
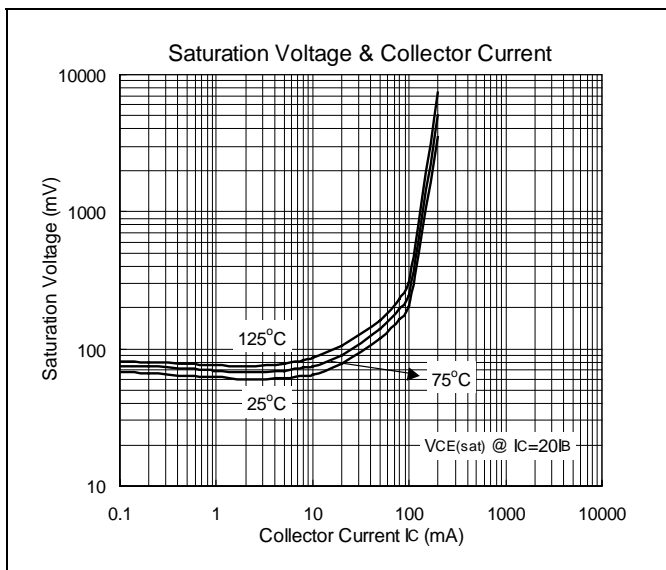
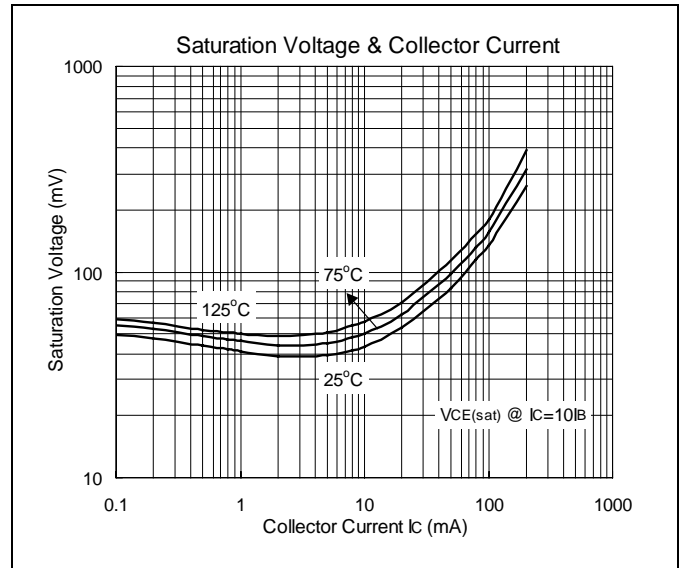
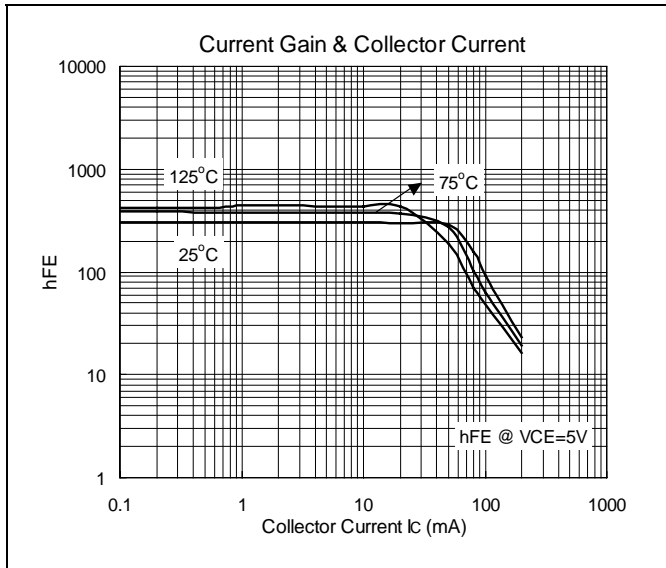
\*Pulse Test : Pulse Width ≤380us, Duty Cycle≤2%

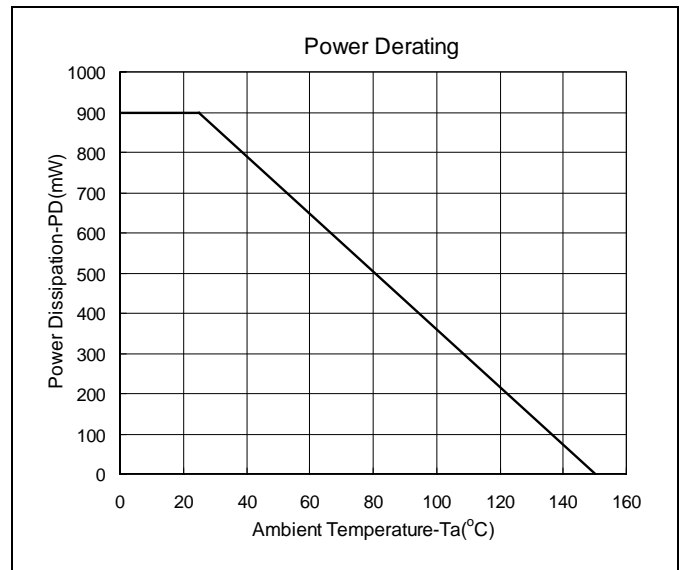
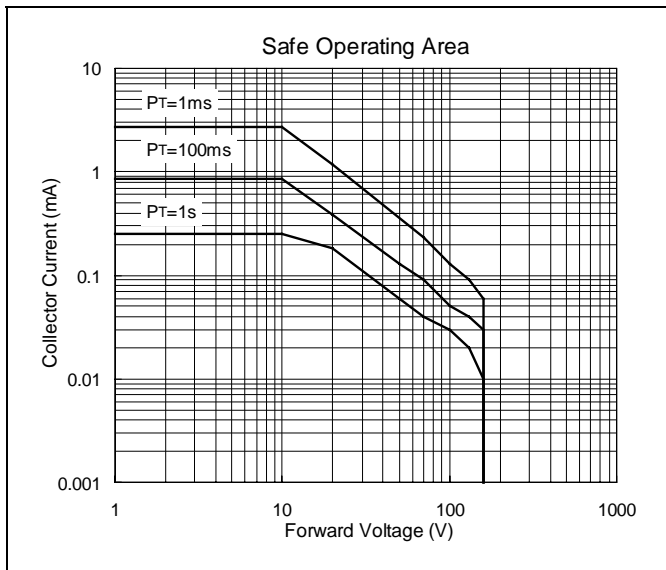
## Classification of hFE1

Rank	B	C	D
Range	60-120	100-200	160-320



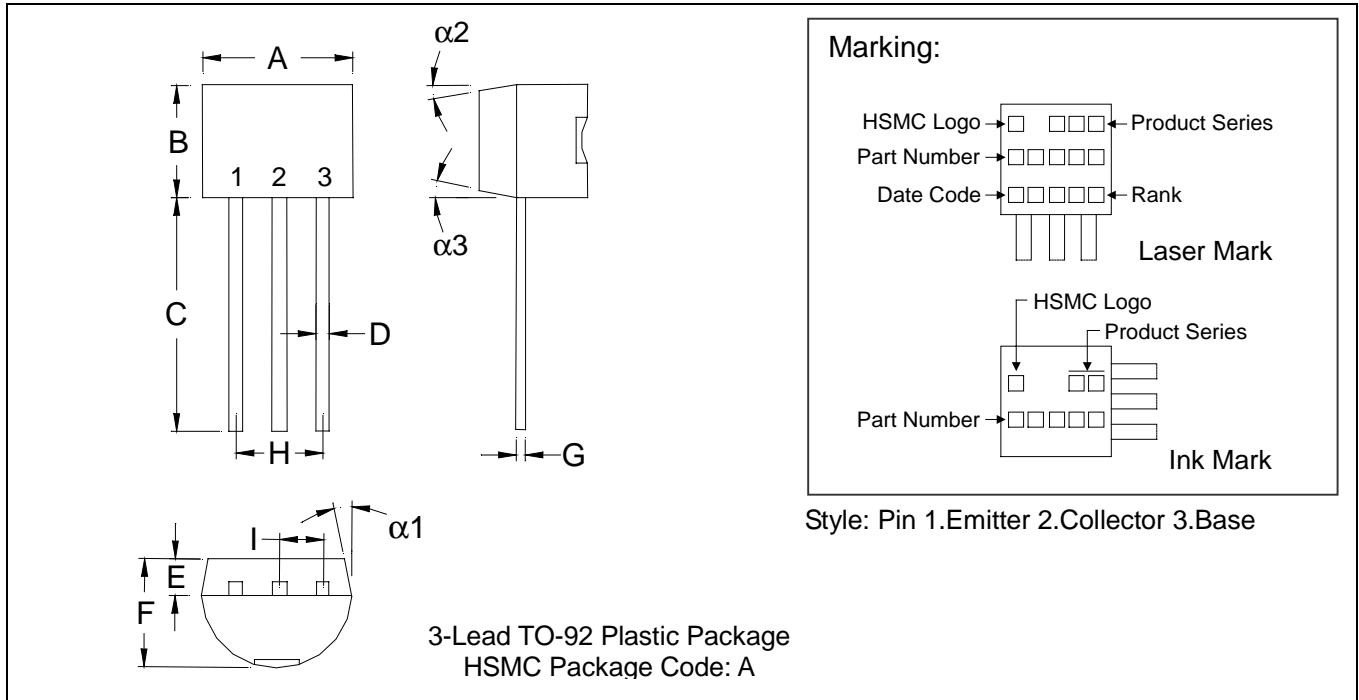
### Characteristics Curve







## 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