



# HE9013

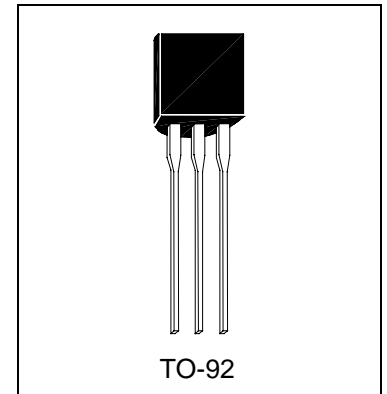
NPN EPITAXIAL PLANAR TRANSISTOR

## Description

The HE9013 is designed for use in 1W output amplifier of portable radios in class B push-pull operation.

## Features

- High Total Power Dissipation (PT: 625mW)
- High Collector Current (IC: 500mA)
- Complementary to HE9012
- Excellent linearity



## Absolute Maximum Ratings

- Maximum Temperatures  
Storage Temperature ..... -55 ~ +150 °C  
Junction Temperature ..... +150 °C Maximum
- Maximum Power Dissipation  
Total Power Dissipation (Ta=25°C)..... 625 mW
- Maximum Voltages and Currents (Ta=25°C)  
VCBO Collector to Base Voltage..... 40V  
VCEO Collector to Emitter Voltage ..... 20V  
VEBO Emitter to Base Voltage..... 5V  
IC Collector Current..... 500 mA  
Icp Base Current..... 100 mA

## Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BVCBO	40	-	-	V	IC=100uA, IE=0
BVCEO	20	-	-	V	IC=1mA, IB=0
BVEBO	5	-	-	V	IE=100uA, IC=0
ICBO	-	-	100	nA	VCE=25V, IE=0
IEBO	-	-	100	nA	VEB=3V, IC=0
*VCE(sat)	-	-	0.6	V	IC=500mA, IB=50mA
*VBE(sat)	-	-	1.2	V	IC=500mA, IB=50mA
VBE(on)	-	-	0.9	V	VCE=1V, IC=10mA
*hFE1	112	180	300		VCE=1V, IC=50mA
*hFE2	40	-	-		VCE=1V, IC=500mA
Cob	-	-	8	pF	VCB=10V, f=1MHz
fT	100	-	-	MHz	VCE=1V, IC=10mA, f=100MHz

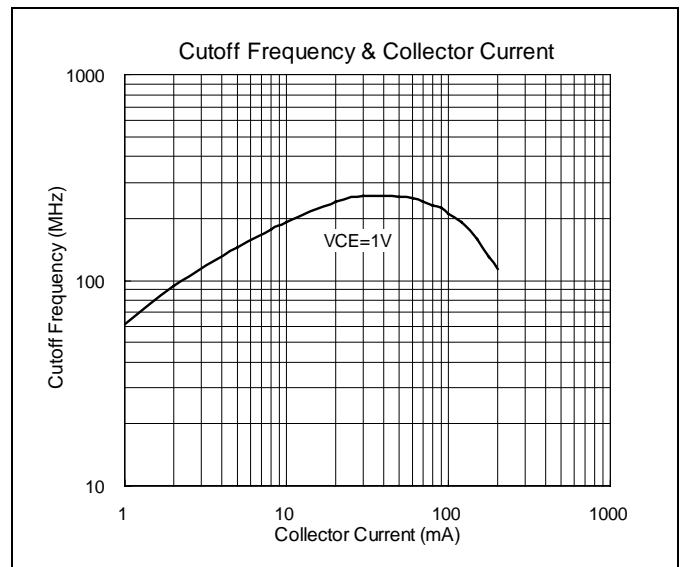
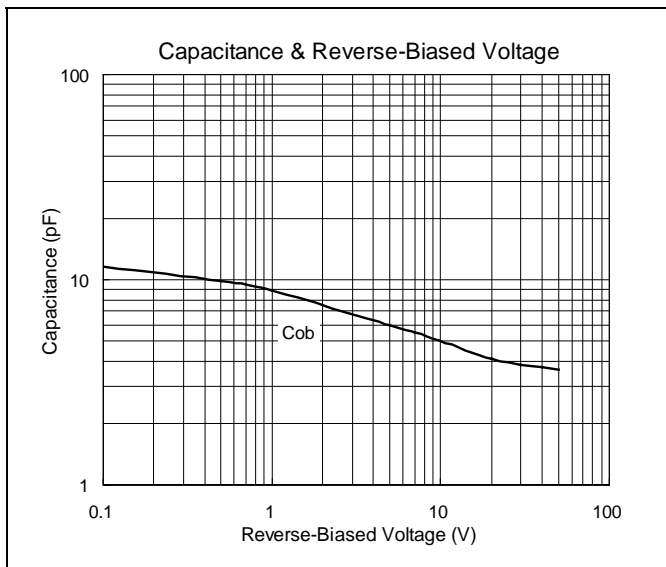
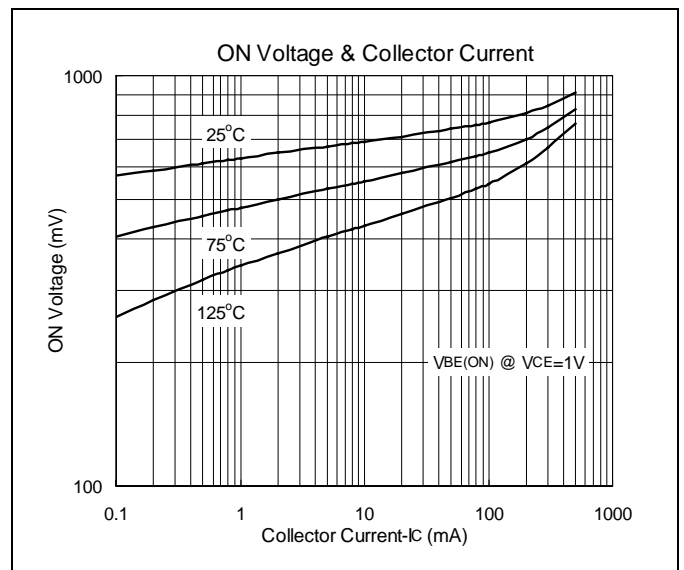
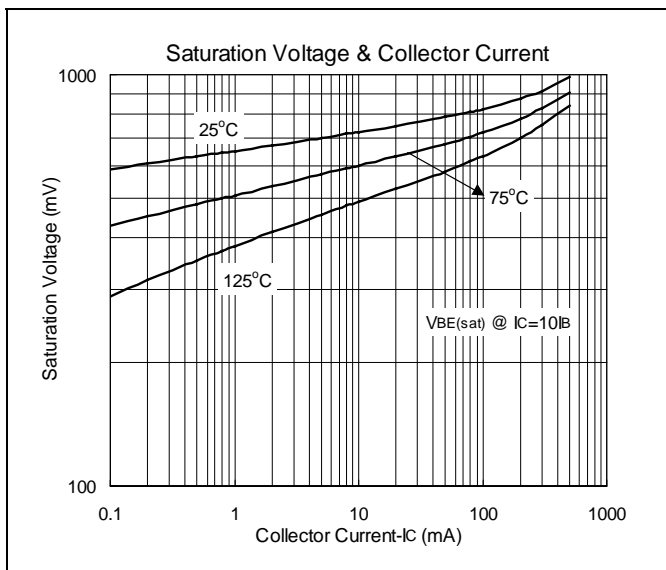
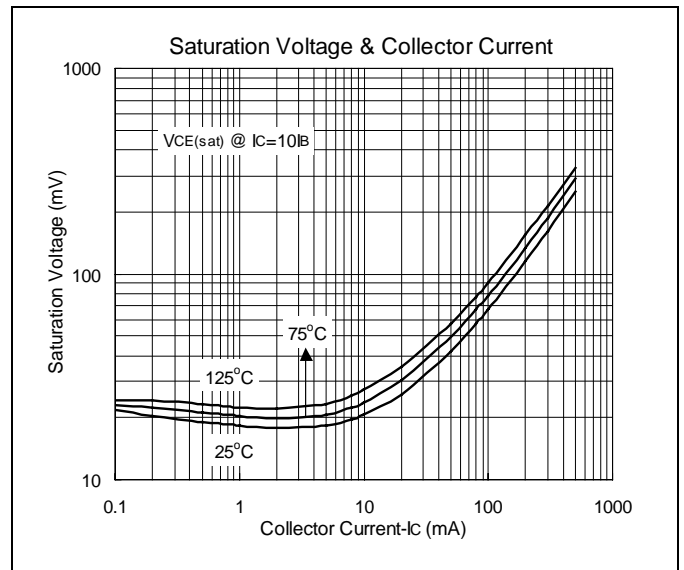
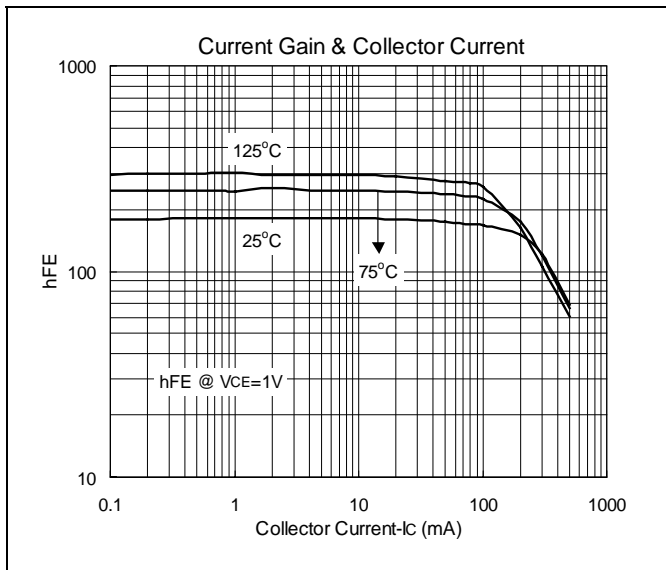
\*Pulse Test: Pulse Width ≤380us, Duty Cycle≤2%

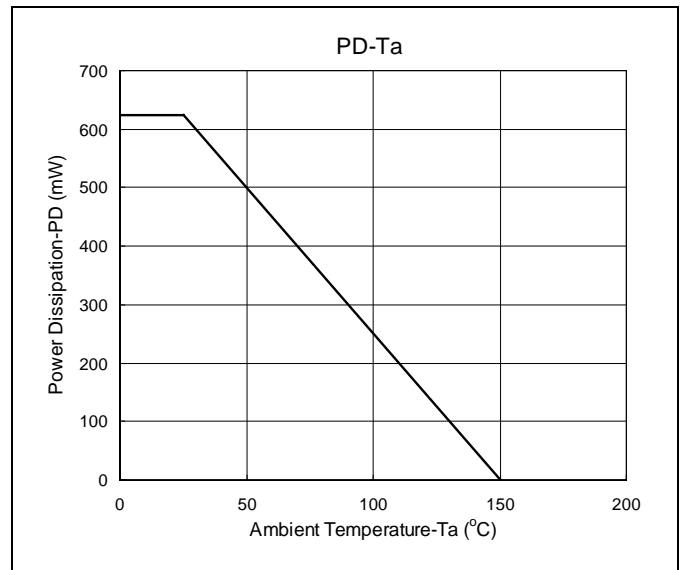
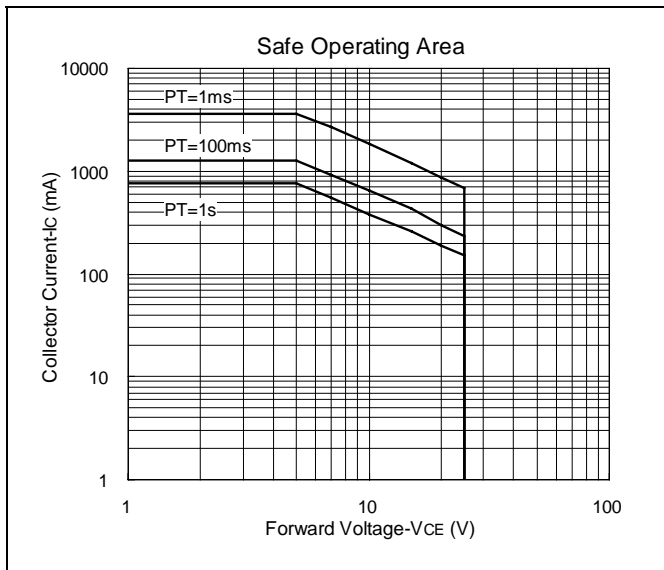
## Classification on hFE1

Rank	G	H	I1	I2
Range	112-166	144-202	176-246	214-300



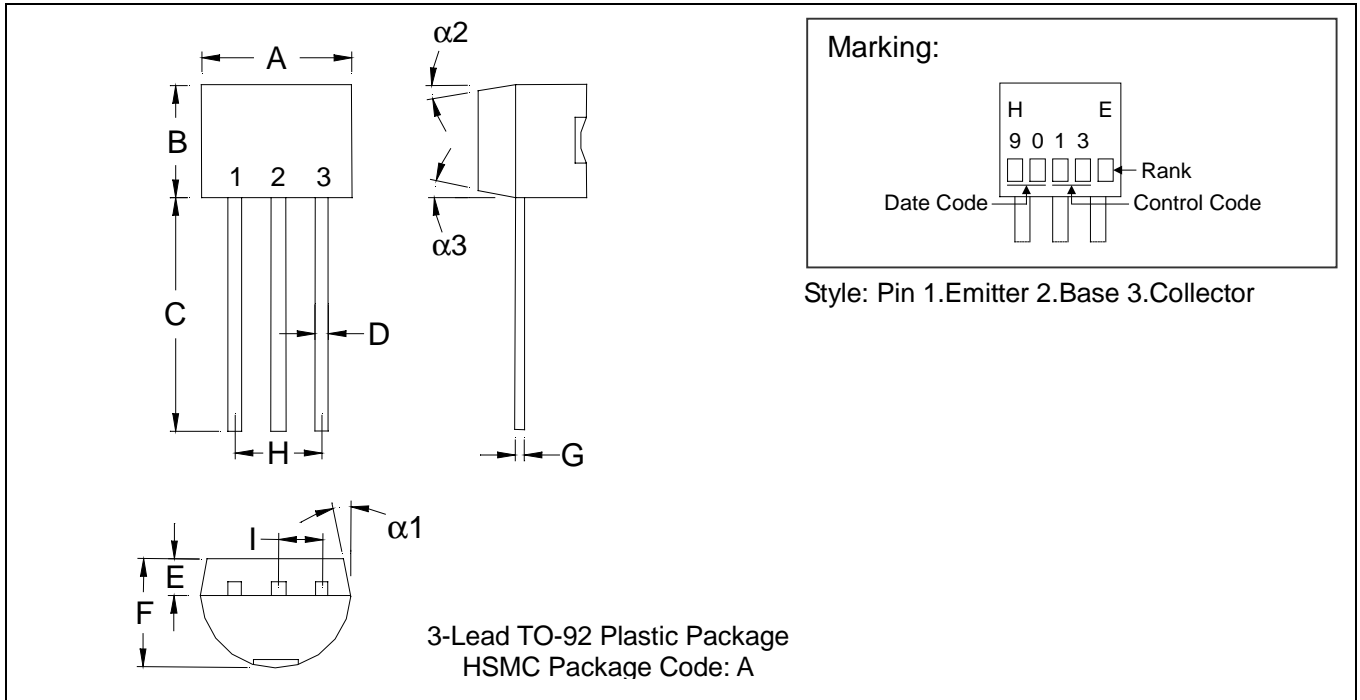
### Characteristics Curve







### 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	α1	-	*5°	-	*5°
E	-	*0.0500	-	*1.27	α2	-	*2°	-	*2°
F	0.1323	0.1480	3.36	3.76	α3	-	*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

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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