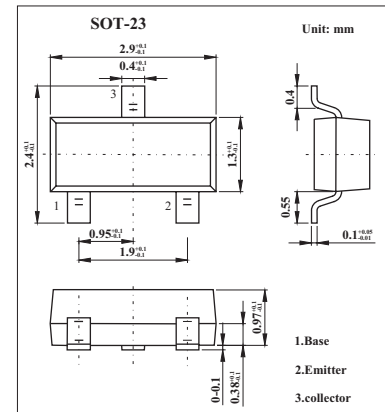


## NPN Transistors

### KST9013

#### ■ Features

- Excellent hFE linearity
- Collector Current : $I_c=0.5A$



#### ■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	$V_{CB0}$	40	V
Collector - Emitter Voltage	$V_{CE0}$	25	V
Emitter - Base Voltage	$V_{EB0}$	5	V
Collector Current - Continuous	$I_c$	500	mA
Collector Power Dissipation	$P_c$	300	mW
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55 to 150	$^\circ C$

#### ■ Electrical Characteristics $T_a = 25^\circ C$

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector - base breakdown voltage	$V_{CB0}$	$I_c = 100 \mu A, I_E = 0$	40			V
Collector - emitter breakdown voltage	$V_{CE0}$	$I_c = 0.1 mA, I_B = 0$	25			V
Emitter - base breakdown voltage	$V_{EB0}$	$I_E = 100 \mu A, I_c = 0$	5			V
Collector cut - off current	$I_{CBO}$	$V_{CB} = 40 V, I_E = 0$			0.1	$\mu A$
Collector cut - off current	$I_{CEO}$	$V_{CE} = 20 V, I_B = 0$			0.1	$\mu A$
Emitter cut - off current	$I_{EBO}$	$V_{EB} = 5 V, I_c = 0$			0.1	$\mu A$
DC current gain	hFE	$V_{CE} = 1V, I_c = 50mA$	120		400	
		$V_{CE} = 1V, I_c = 500mA$	40			
Collector - emitter saturation voltage	$V_{CE(sat)}$	$I_c = 500 mA, I_B = 50mA$			0.6	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_c = 500 mA, I_B = 50mA$			1.2	V
Transition frequency	$f_T$	$V_{CE} = 6V, I_c = 20mA, f = 30MHz$	150			MHz

#### ■ hFE Classification

Marking	J3		
Rank	L	H	J
hFE	120 to 200	200 to 350	300 to 400

# KST9013

■ Typical Characteristics

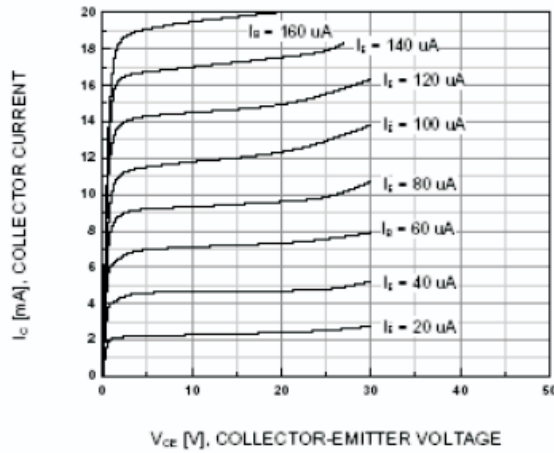


Fig.1 Static Characteristic

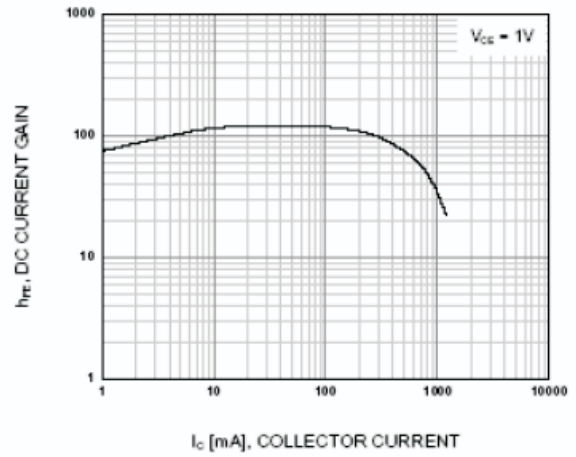


Fig.2 DC Current Gain

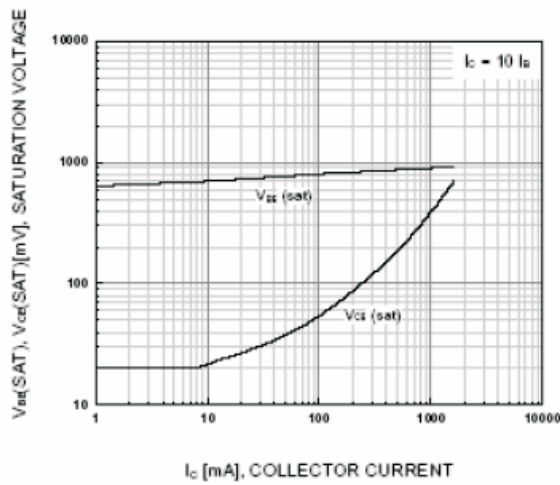


Fig.3 Base Emitter Saturation Voltage  
Collector Emitter Saturation Voltage

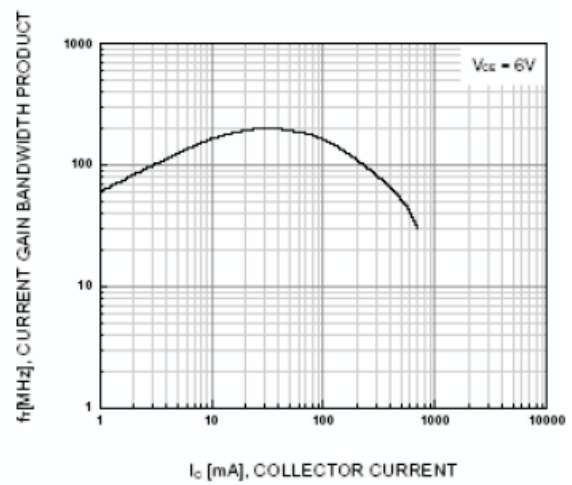


Fig.4 Current Gain Bandwidth Product