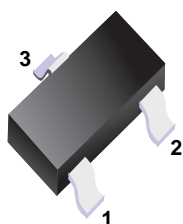


## ■ NPN Transistors

### ■ Marking

Marking	J3Y
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- 1.Base
- 2.Emmitter
- 3.Collector

### ■ Simplified outline(SOT-523)

### ■ Absolute Maximum Ratings Ta = 25°C

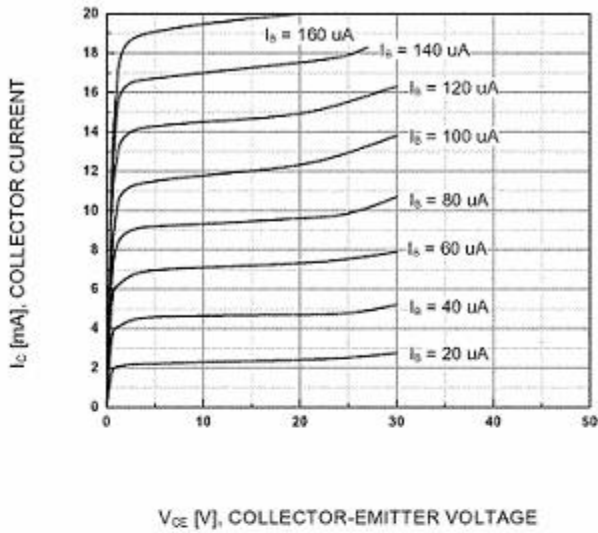
Symbol	Parameter	Value	Units
V <sub>CBO</sub>	Collector-Base Voltage	40	V
V <sub>CEO</sub>	Collector-Emmitter Voltage	25	V
V <sub>EBO</sub>	Emmitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current -Continuous	0.5	A
P <sub>C</sub>	Collector Dissipation	0.2	W
T <sub>j</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55-150	°C

### ■ Electrical Characteristics Ta = 25°C

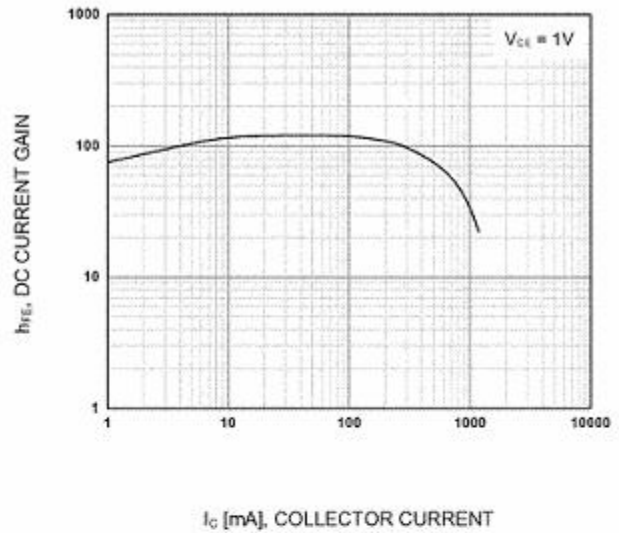
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 100μA, I <sub>E</sub> =0	40			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	25			V
Emmitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =100μA, I <sub>C</sub> =0	5			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =40 V, I <sub>E</sub> =0			0.1	μA
Collector cut-off current	I <sub>CEO</sub>	V <sub>CB</sub> =20V, I <sub>E</sub> =0			0.1	μA
Emmitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = 5V, I <sub>C</sub> =0			0.1	μA
DC current gain	H <sub>FE(1)</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> = 50mA	120		400	
	H <sub>FE(2)</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> = 500mA	50			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =500 mA, I <sub>B</sub> = 50mA			0.6	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =500 mA, I <sub>B</sub> = 50mA			1.2	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =6V, I <sub>C</sub> = 20mA f=30MHz	150			MHz

### ■ Classification of hfe

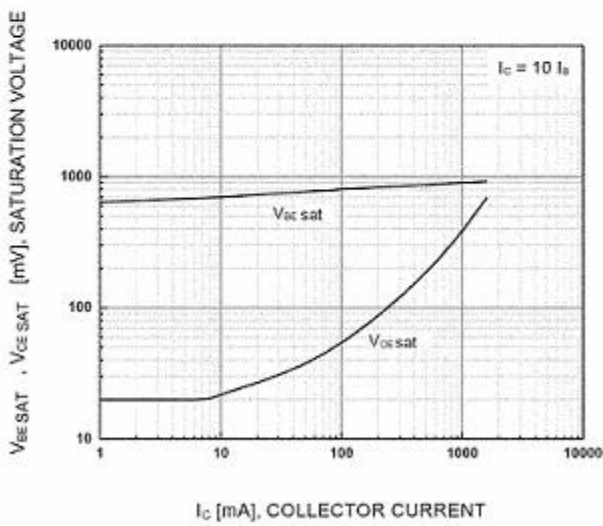
Rank	L	H	J
Range	120-200	200-350	300-400



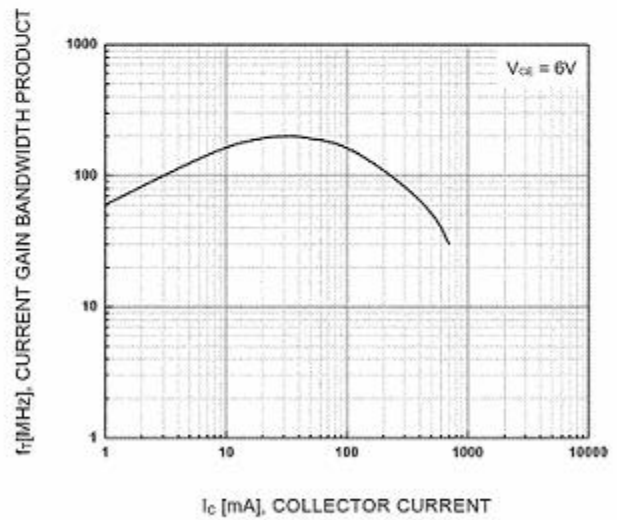
**Static Characteristic**



**DC current Gain**

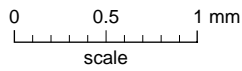
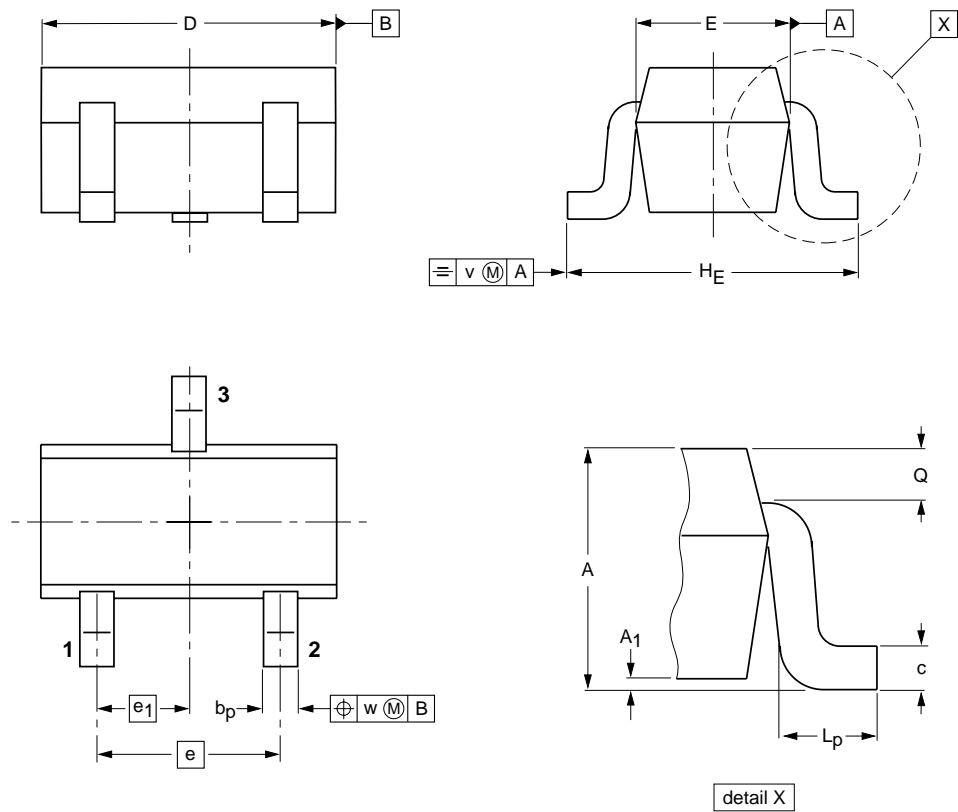


**Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage**



**Current Gain Bandwidth Product**

## ■ SOT-523



**DIMENSIONS (mm are the original dimensions)**

UNIT	A	A <sub>1</sub> max	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	Q	v	w
mm	0.95 0.60	0.1	0.30 0.15	0.25 0.10	1.8 1.4	0.9 0.7	1	0.5	1.75 1.45	0.45 0.15	0.23 0.13	0.2	0.2