

## Plastic-Encapsulate Transistors

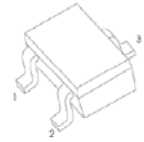
TRANSISTOR (NPN)

### FEATURES

- Low Cob:Cob=2.0pF(Typ)

SOT-523

1. BASE
2. EMITTER
3. COLLECTOR



### MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	60	V
V <sub>CEO</sub>	Collector-Emitter Voltage	50	V
V <sub>EBO</sub>	Emitter-Base Voltage	7	V
I <sub>C</sub>	Collector Current -Continuous	150	mA
P <sub>C</sub>	Collector Power Dissipation	150	mW
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55-150	°C

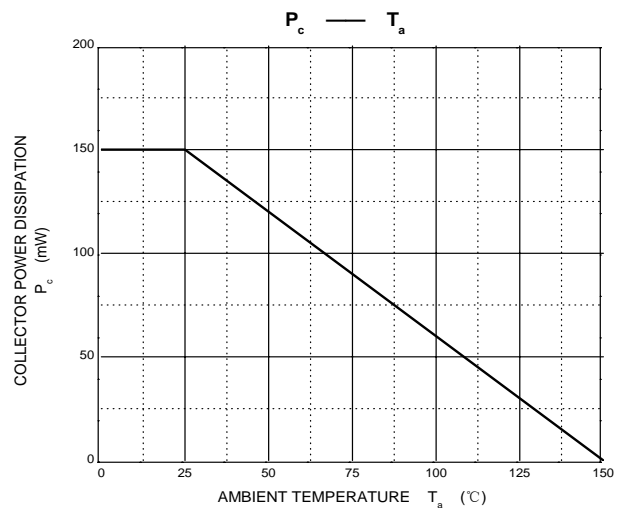
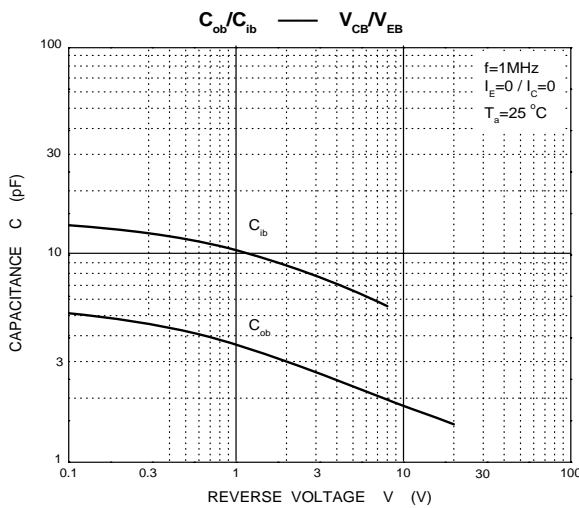
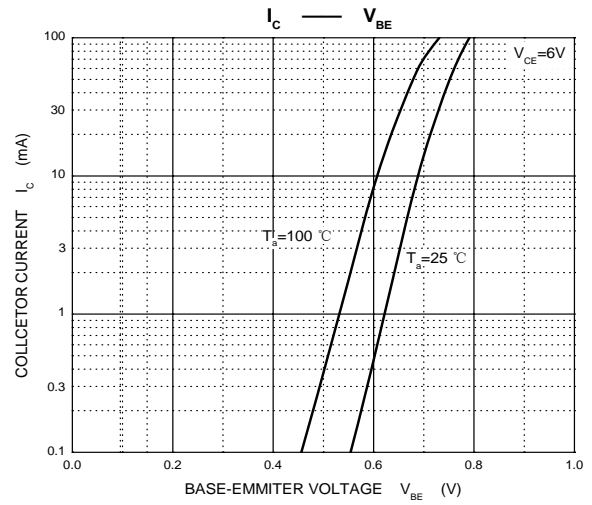
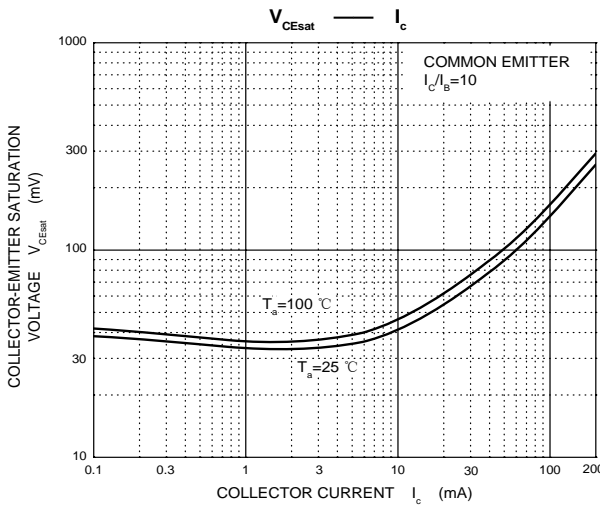
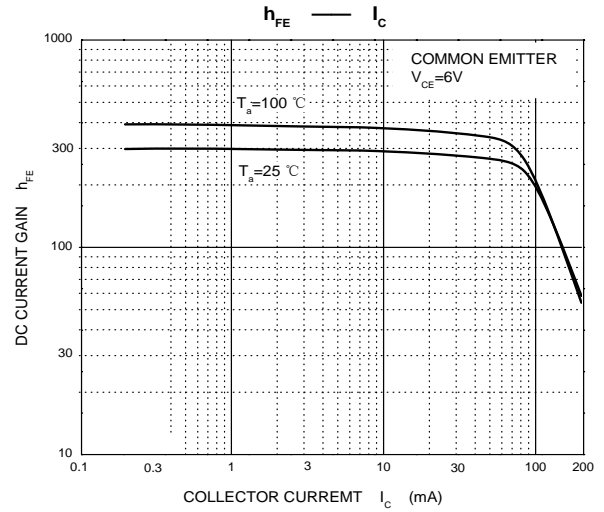
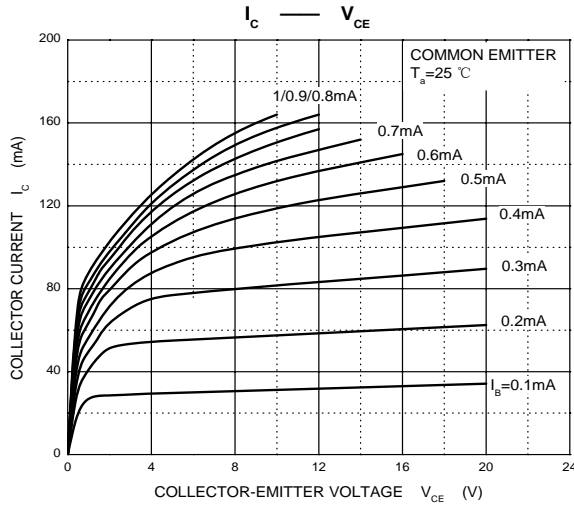
### ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =50μA, I <sub>E</sub> =0	60			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	50			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =50μA, I <sub>C</sub> =0	7			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =60V, I <sub>E</sub> =0			0.1	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =7V, I <sub>C</sub> =0			0.1	μA
DC current gain	h <sub>FE</sub>	V <sub>CE</sub> =6V, I <sub>C</sub> =1mA	120		560	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =50mA, I <sub>B</sub> =5mA			0.4	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =12V, I <sub>C</sub> =2mA, f=100MHz		180		MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =12V, I <sub>E</sub> =0, f=1MHz			3.5	pF

### CLASSIFICATION OF h<sub>FE</sub>

Rank	Q	R	S
Range	120-270	180-390	270-560
Marking	BQ	BR	BS

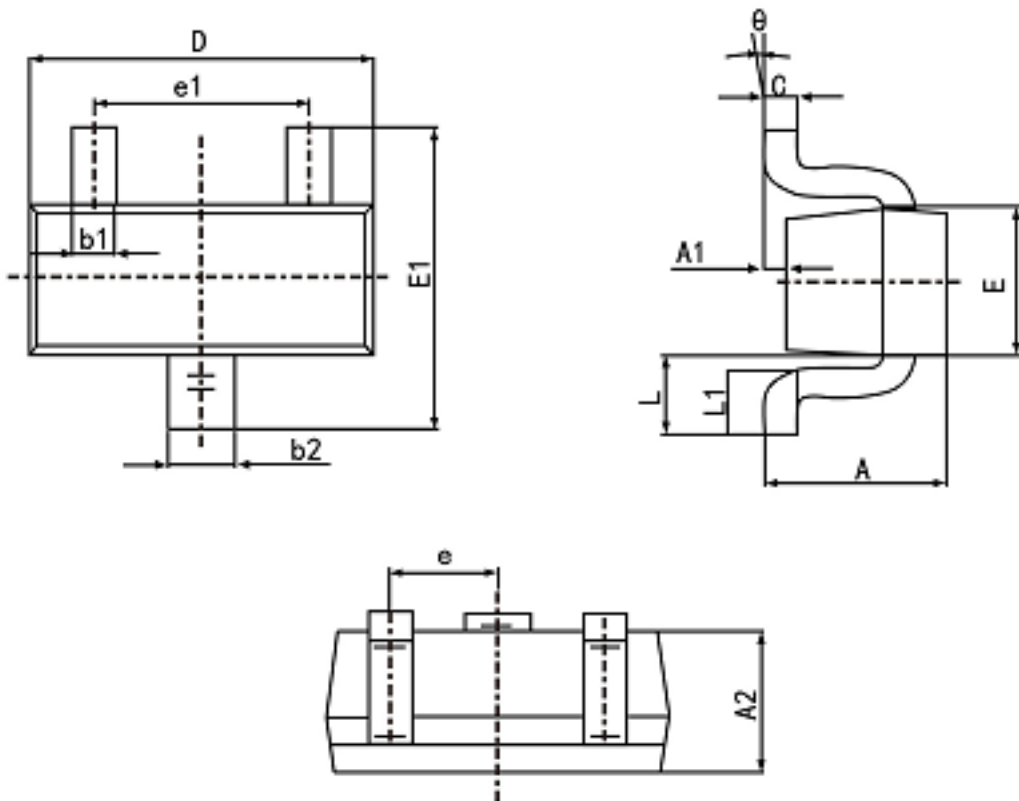
# Typical Characteristics



**PACKAGE OUTLINE**

Plastic surface mounted package; 3 leads

SOT-523



Symbol	Dimension in Millimeters	
	Min	Max
A	0.700	0.900
A1	0.000	0.100
A2	0.700	0.800
b1	0.150	0.250
b2	0.250	0.350
c	0.100	0.200
D	1.500	1.700
E	0.700	0.900
E1	1.450	1.750
e	0.500	TYP.
e1	0.900	1.100
L	0.400 REF.	
L1	0.260	0.460
$\theta$	0°	8°