

## NPN Plastic-Encapsulate Transistors

### FEATURES

- High DC Current Gain
- Complementary to 2SA1611
- High Voltage

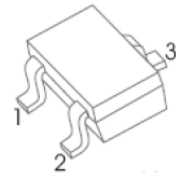
### APPLICATIONS

- General Purpose Amplification

### MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	60	V
V <sub>CE0</sub>	Collector-Emitter Voltage	50	V
V <sub>EB0</sub>	Emitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current	100	mA
P <sub>C</sub>	Collector Power Dissipation	150	mW
R <sub>θJA</sub>	Thermal Resistance From Junction To Ambient	833	°C/W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55 ~ +150	°C

SOT - 323



1. BASE
2. EMITTER
3. COLLECTOR

### ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

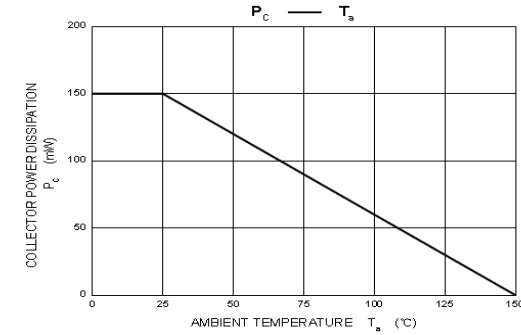
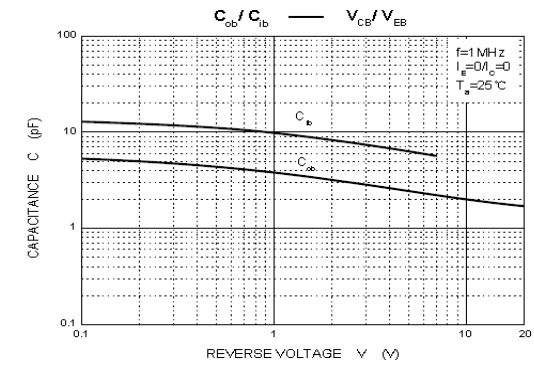
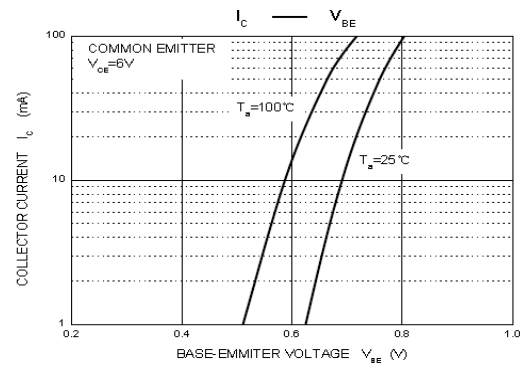
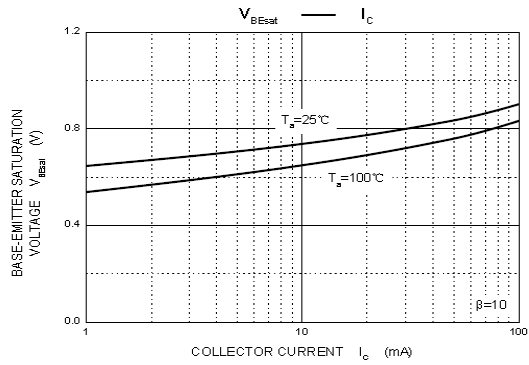
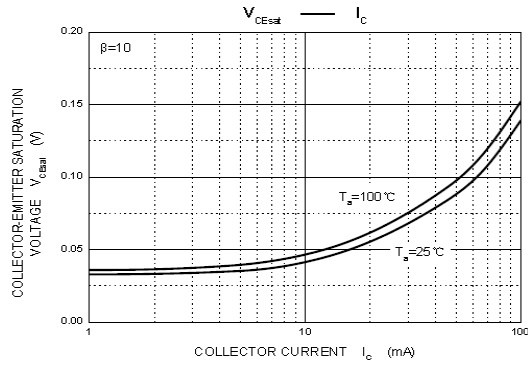
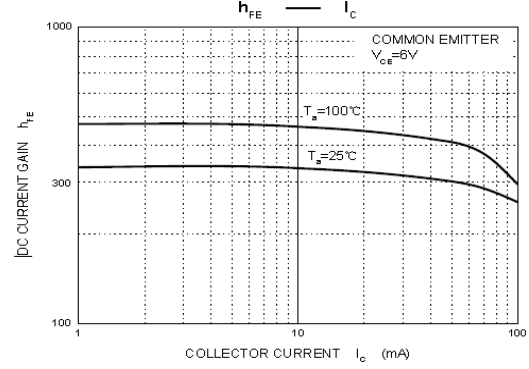
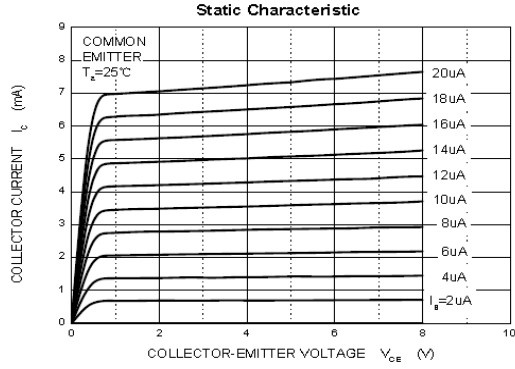
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =100μA, I <sub>E</sub> =0	60			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	50			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =100μA, I <sub>C</sub> =0	5			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =60V, I <sub>E</sub> =0			100	nA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0			100	nA
DC current gain	h <sub>FE</sub> *	V <sub>CE</sub> =6V, I <sub>C</sub> =1mA	90		600	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =10mA			0.3	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =10mA			1	V
Base-emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> =6V, I <sub>C</sub> =1mA	0.55		0.65	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =6V, I <sub>C</sub> =10mA		250		MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =6V, I <sub>E</sub> =0, f=1MHz		3		pF

\*Pulse test: pulse width ≤350μs, duty cycle ≤2.0%.

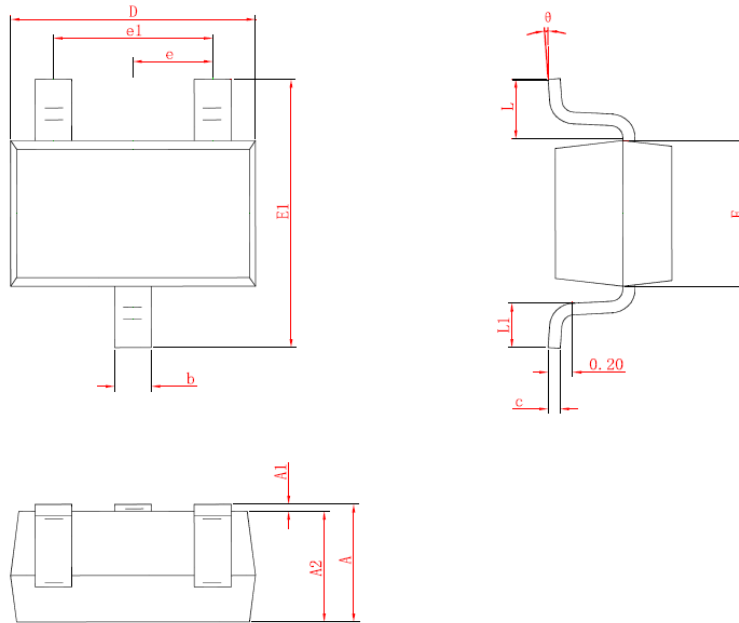
### CLASSIFICATION OF h<sub>FE</sub>

RANK	L4	L5	L6	L7
RANGE	90 - 180	135 - 270	200 - 400	300 - 600
MARKING	L4	L5	L6	L7

## Typical Characteristics



## SOT-323 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP.		0.026 TYP.	
e1	1.200	1.400	0.047	0.055
L	0.525 REF.		0.021 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°