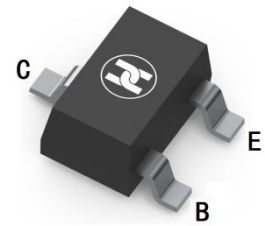
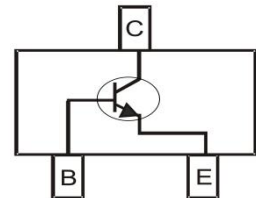


**BIPOLAR TRANSISTOR (NPN)**
**FEATURES**

- Complementary to 2SA1579
- High Breakdown Voltage
- Surface Mount device


**SOT-323**
**MECHANICAL DATA**

- Case: SOT-323
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.008 grams (approximate)


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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CB0</sub>	120	V
Collector-Emitter Voltage	V <sub>CEO</sub>	120	V
Emitter-Base Voltage	V <sub>EBO</sub>	5	V
Collector Current	I <sub>C</sub>	50	mA
Collector Power Dissipation	P <sub>C</sub>	200	mW
Thermal Resistance From Junction To Ambient	R <sub>θJA</sub>	625	°C/W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55 ~+150	°C

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

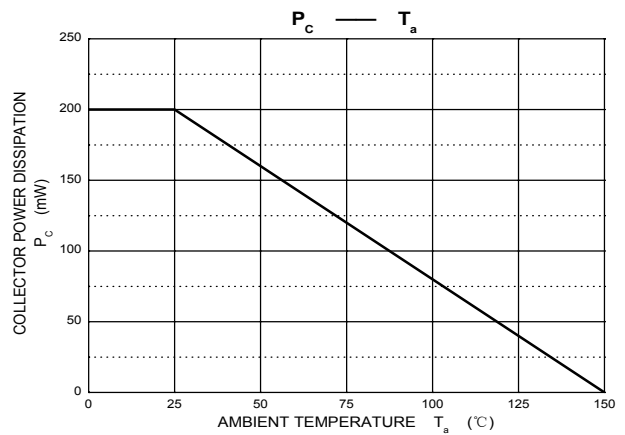
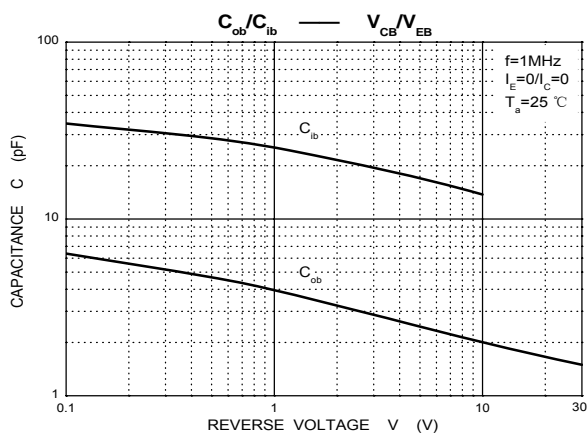
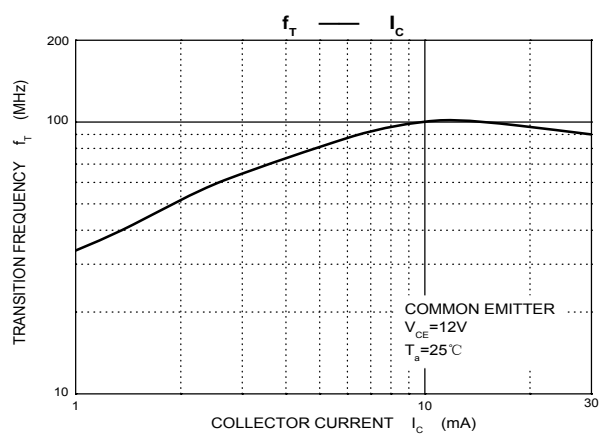
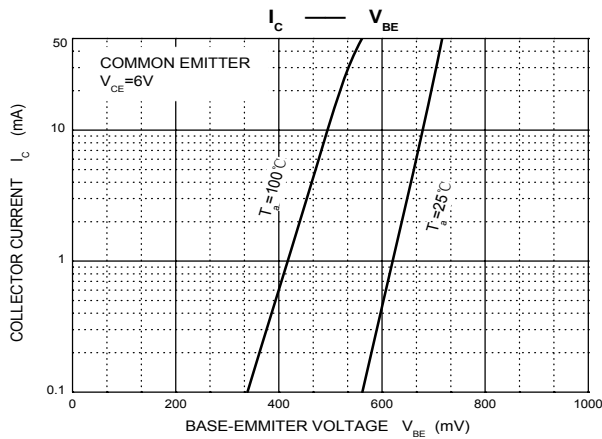
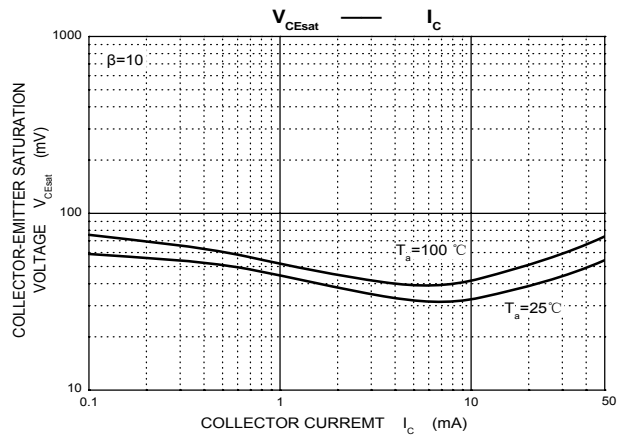
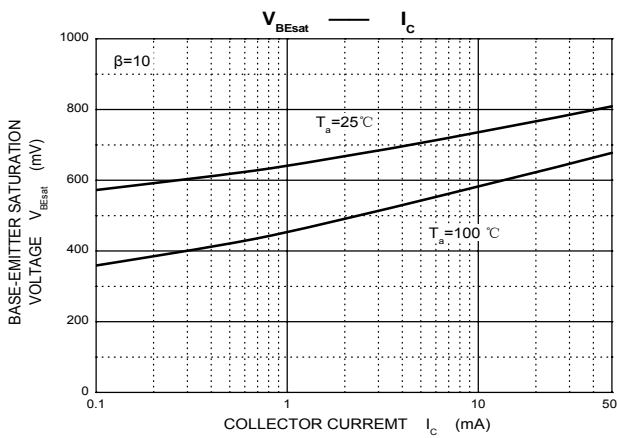
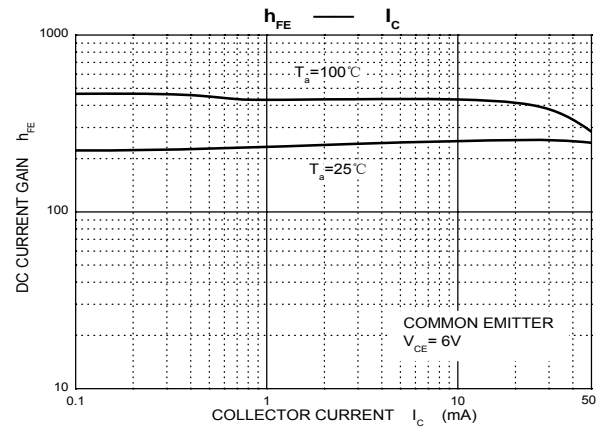
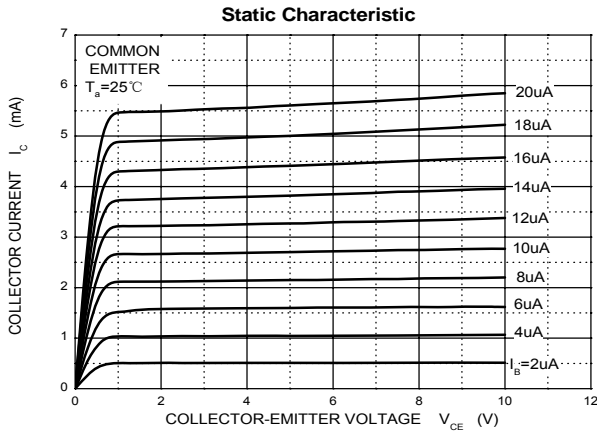
Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	120			V	I <sub>C</sub> =50uA, I <sub>E</sub> =0
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	120			V	I <sub>C</sub> =1mA, I <sub>B</sub> =0
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	5			V	I <sub>E</sub> =50uA, I <sub>C</sub> =0
Collector cut-off current	I <sub>CBO</sub>			0.5	uA	V <sub>CB</sub> =100V, I <sub>E</sub> =0
Emitter cut-off current	I <sub>EBO</sub>			0.5	uA	V <sub>EB</sub> =4V, I <sub>C</sub> =0
DC current gain	h <sub>FE</sub>	180		560		V <sub>CE</sub> =6V, I <sub>C</sub> =2mA
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>			0.3	V	I <sub>C</sub> =10mA, I <sub>B</sub> =1mA
Transition frequency	f <sub>T</sub>		140		MHz	V <sub>CE</sub> =12V, I <sub>C</sub> =2mA, f=100MHz
Collector output capacitance	C <sub>ob</sub>		2.5		pF	V <sub>CB</sub> =12V, I <sub>E</sub> =0, f=1MHz

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

Rank	R	S
Range	180-390	270-560
Marking	TR	TS

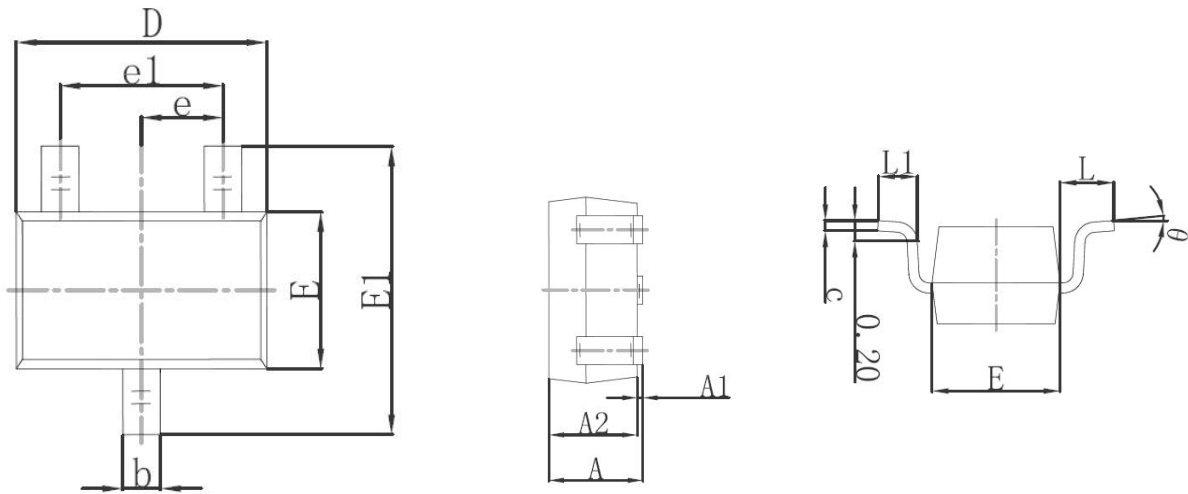
**BIPOLAR TRANSISTOR (NPN)**

**Typical Characteristics**



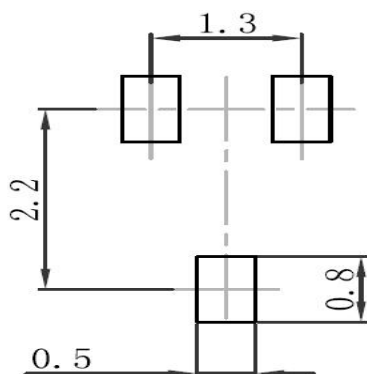
**BIPOLAR TRANSISTOR (NPN)**

**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	0.650TYP		0.026TYP	
e1	1.200	1.400	0.047	0.055
L	0.525REF		0.021REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

**SOT-323 Suggested Pad Layout**



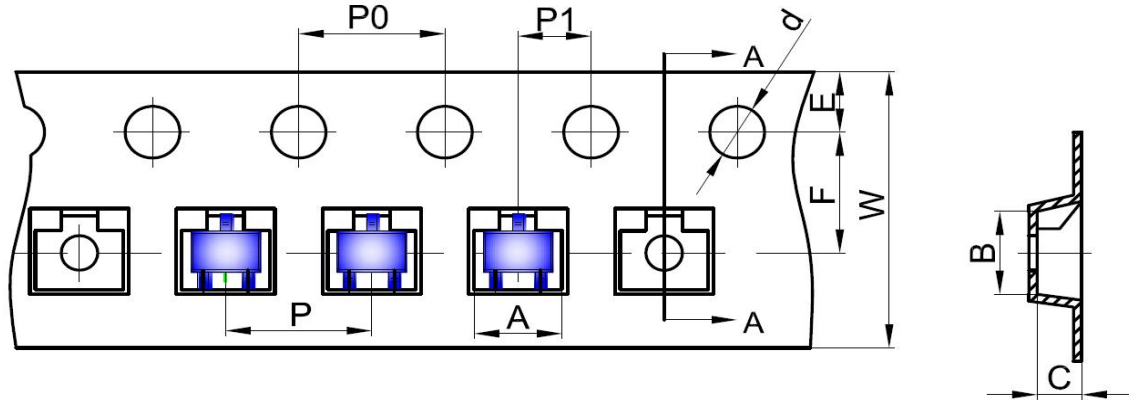
**Note:**

1. Controlling dimension: in millimeters
2. General tolerance: ±0.05mm
3. The pad layout is for reference purposes only

**BIPOLAR TRANSISTOR (NPN)**

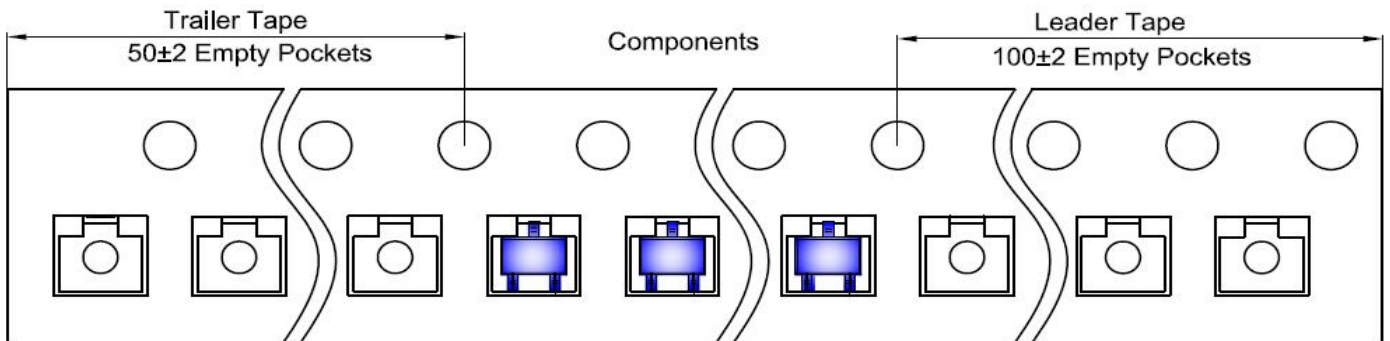
**SOT-323 Tape and Reel**

**SOT-323 Embossed Carrier Tape**

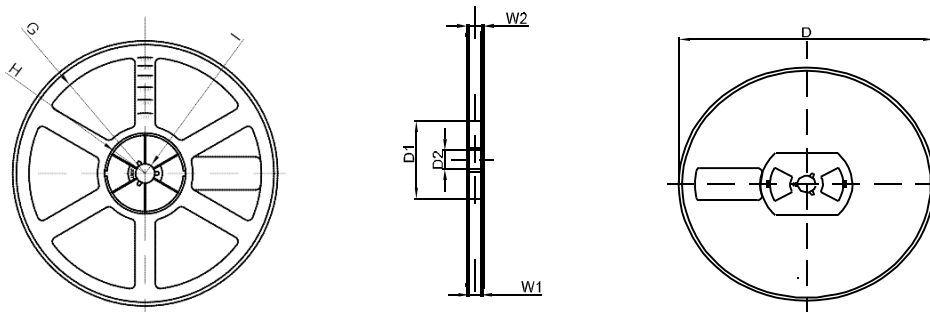


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-323	2.25	2.55	1.19	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

**SOT-323 Tape Leader and Trailer**



**SOT-323 Reel**



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7" DIA	Ø178	54.40	13.00	R78	R25.60	R6.50	9.50	12.30
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1