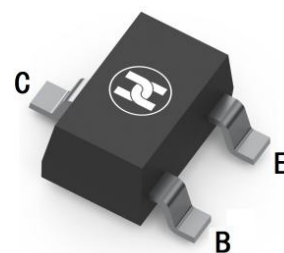
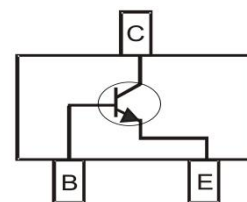


BIPOLAR TRANSISTOR (NPN)
FEATURES

- Complementary to 2SB1218A
- High DC Current Gain
- Low Collector-emitter saturation voltage
- For General Purpose Amplification
- Surface Mount device


SOT-323

MECHANICAL DATA

- Case: SOT-323
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Weight: 0.008 grams (approximate)

MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V _{CB0}	60	V
Collector-Emitter Voltage	V _{CEO}	50	V
Emitter-Base Voltage	V _{EBO}	7	V
Collector Current	I _C	100	mA
Collector Power Dissipation	P _C	150	mW
Thermal Resistance From Junction To Ambient	R _{θJA}	833	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55 ~+150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Collector-base breakdown voltage	V _{(BR)CBO}	60			V	I _C =10uA, I _E =0
Collector-emitter breakdown voltage	V _{(BR)CEO}	50			V	I _C =2mA, I _B =0
Emitter-base breakdown voltage	V _{(BR)EBO}	7			V	I _E =10uA, I _C =0
Collector cut-off current	I _{CB0}			0.1	uA	V _{CB} =20V, I _E =0
Collector cut-off current	I _{CEO}			100	uA	V _{CE} =10V, I _B =0
Emitter cut-off current	I _{EBO}			0.1	uA	V _{EB} =7V, I _C =0
DC current gain	h _{FE1}	160		460		V _{CE} =10V, I _C =2mA
	h _{FE2}	90				V _{CE} =2V, I _C =0.1A
Collector-emitter saturation voltage	V _{CE(sat)}			0.3	V	I _C =100mA, I _B =10mA
Transition frequency	f _T		150		MHz	V _{CE} =10V, I _C =2mA, f=200MHz
Collector output capacitance	C _{ob}		3.5		pF	V _{CE} =10V, I _E =0, f=1MHz

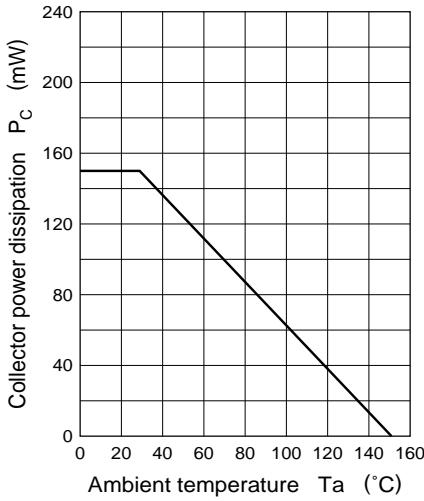
CLASSIFICATION OF h_{FE}

Rank	Q	R	S
Range	160-260	210-340	290-460
Marking	ZQ	ZR	ZS

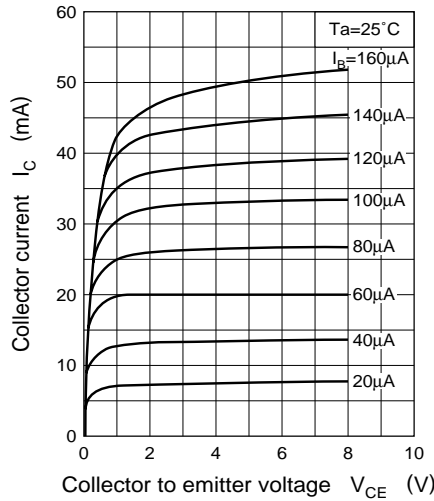
BIPOLAR TRANSISTOR (NPN)

Typical Characteristics

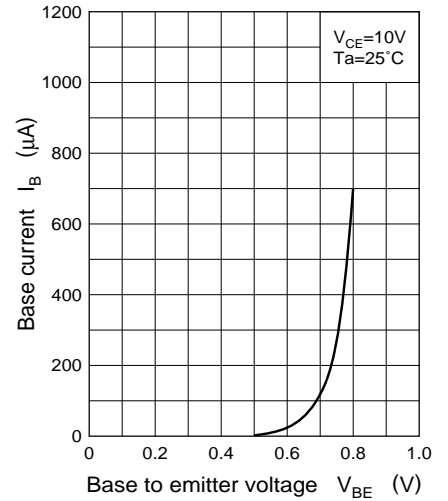
$P_C - T_a$



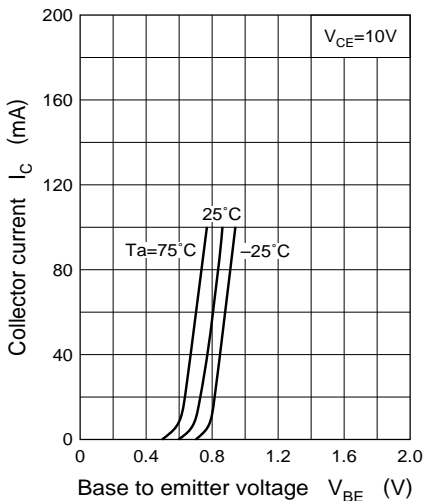
$I_C - V_{CE}$



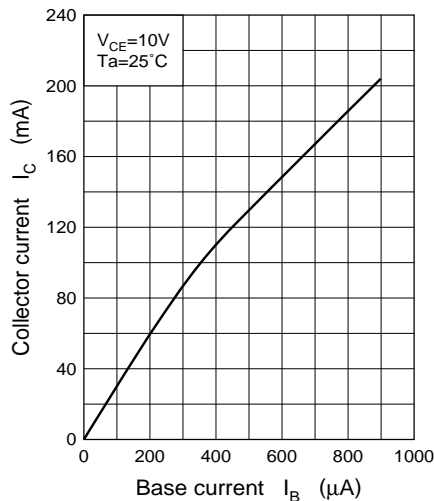
$I_B - V_{BE}$



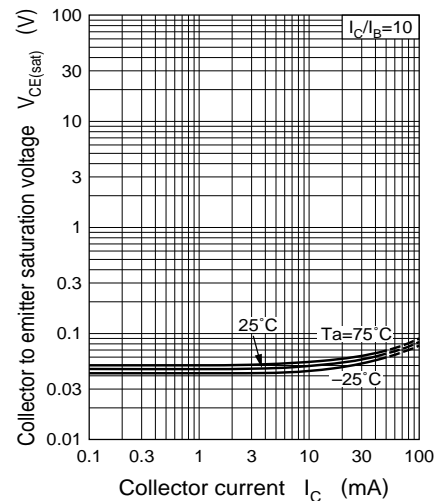
$I_C - V_{BE}$



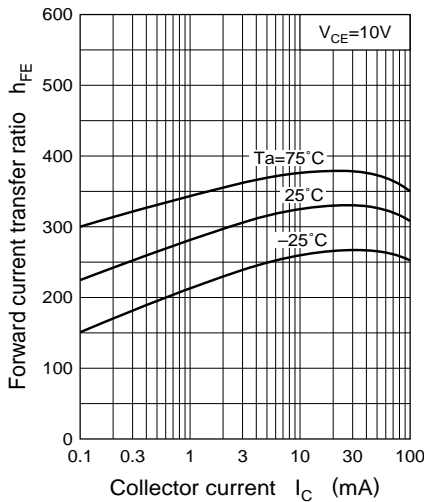
$I_C - I_B$



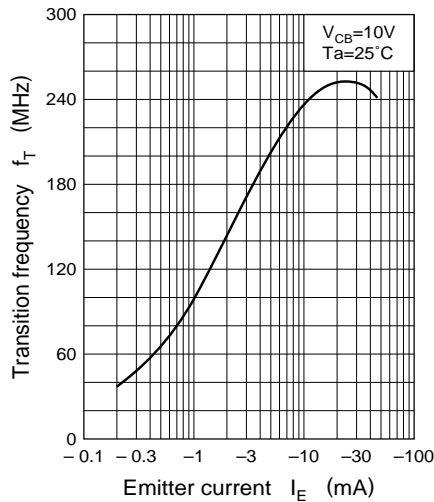
$V_{CE(sat)} - I_C$



$h_{FE} - I_C$

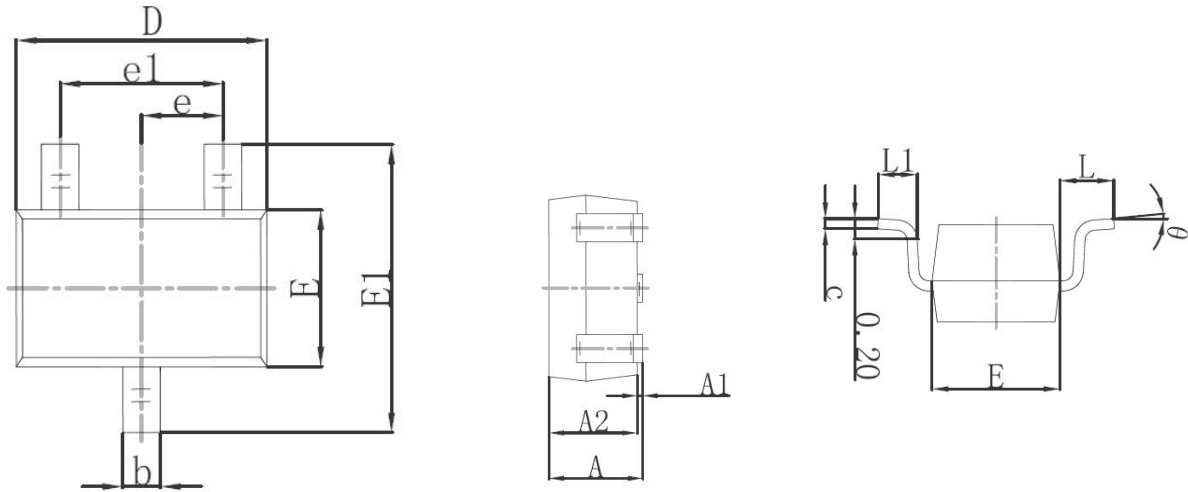


$f_T - I_E$



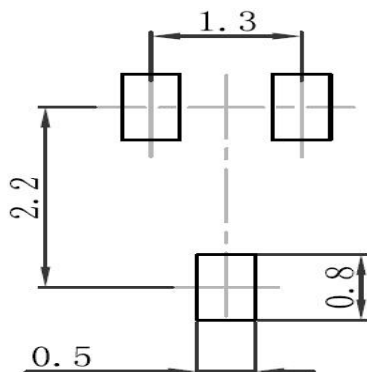
BIPOLAR TRANSISTOR (NPN)

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



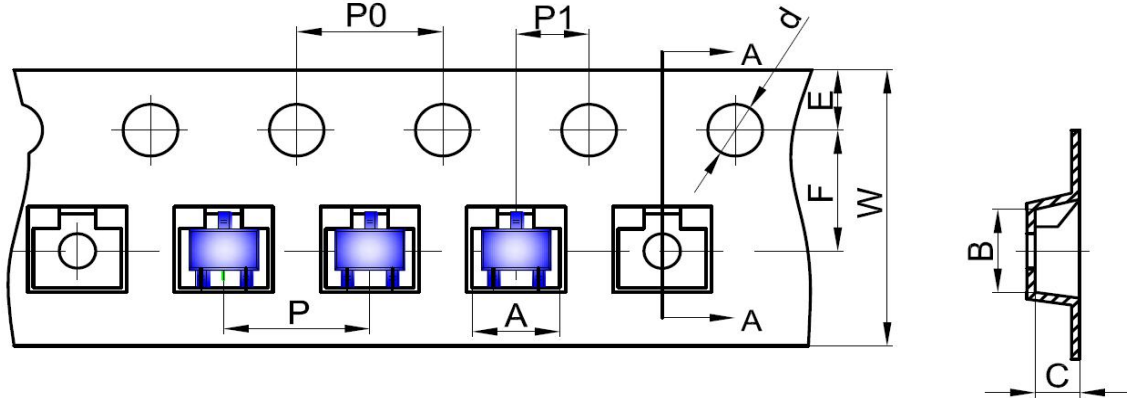
Note:

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

BIPOLAR TRANSISTOR (NPN)

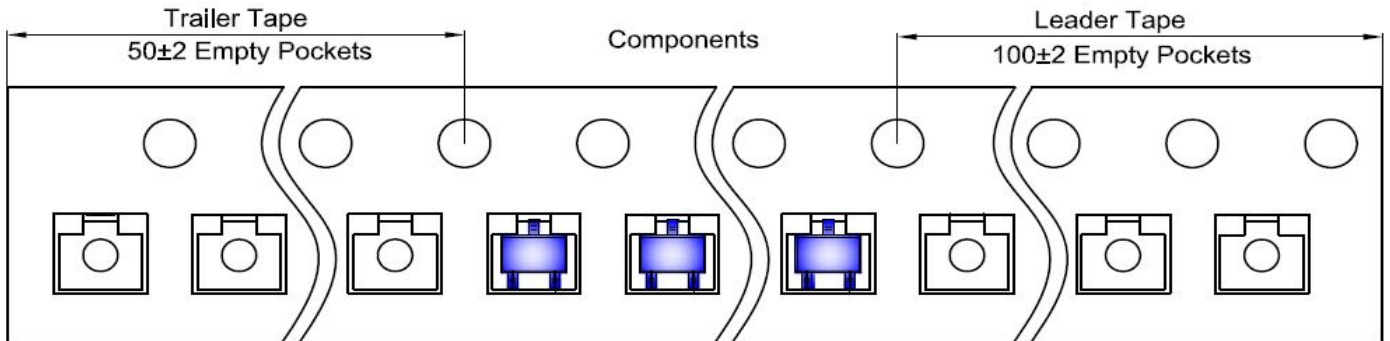
SOT-323 Tape and Reel

SOT-323 Embossed Carrier Tape

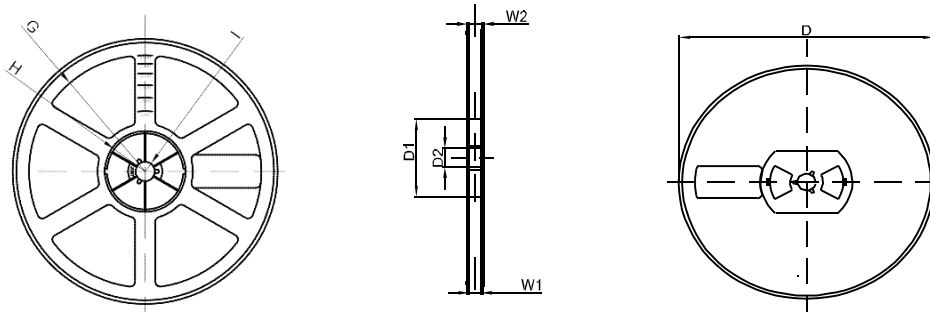


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-323	2.25	2.55	1.19	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

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