

Descriptions

This is NPN Type Bipolar Transistor in a SOT-723 Plastic Package.

Features

- Low profile package
- Ideal for automated placement
- Complementary to MMBT3906S9 (PNP)
- Power Dissipation of 200mW
- High Stability and High Reliability
- RoHS Compliant

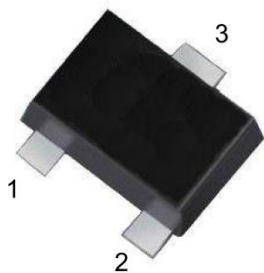
Mechanical Data

- Package: SOT-723
- Lead Finish: Matte Tin
- Case Material: "Green " Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Tape Reel :8000pcs

Applications

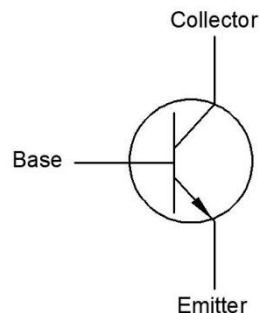
- Amplifying signal
- Electronic switch
- Oscillating circuit
- Variable resistance

Appearance & Symbol



Package: SOT-723

- 1: Base
- 2: Emitter
- 3: Collector



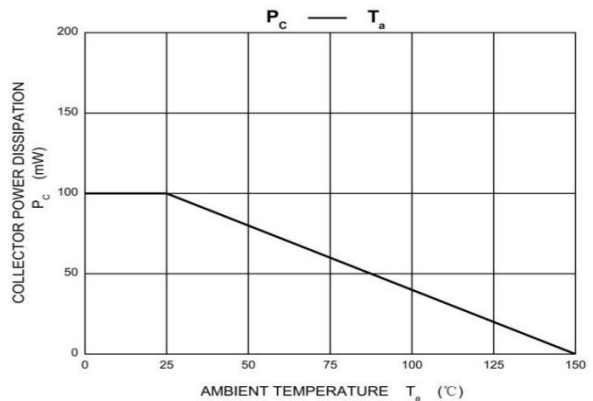
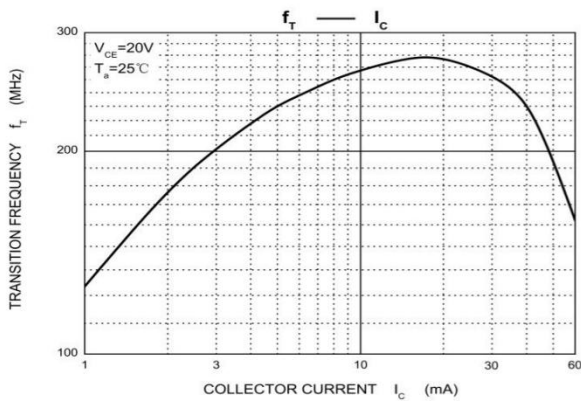
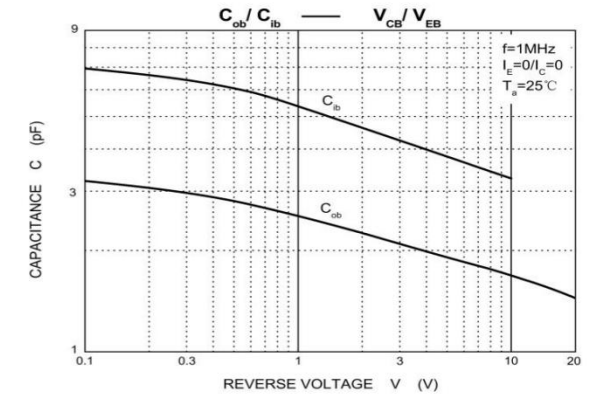
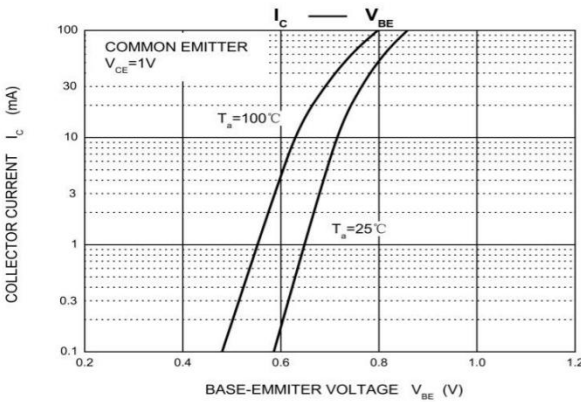
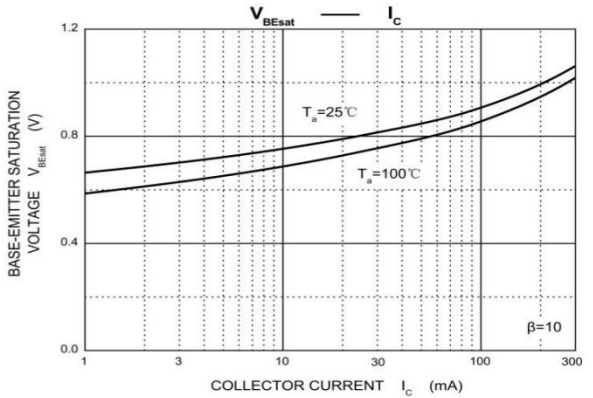
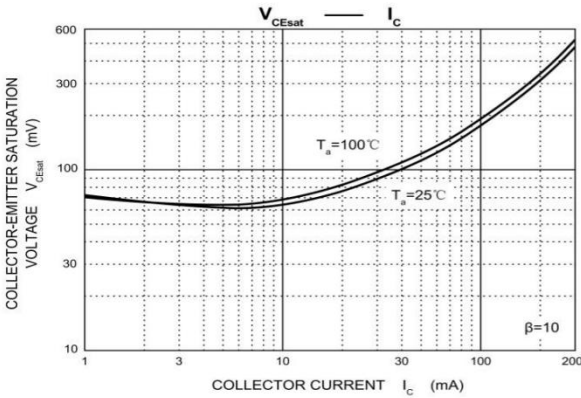
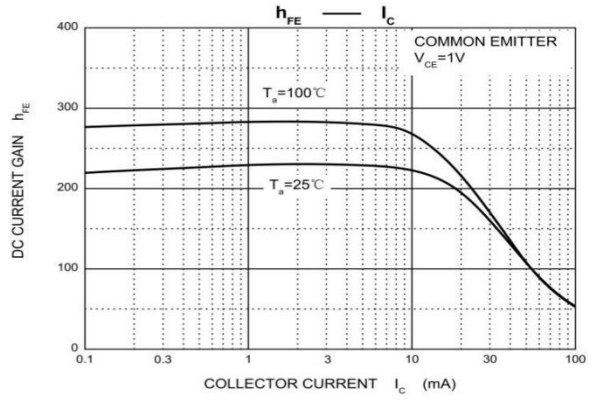
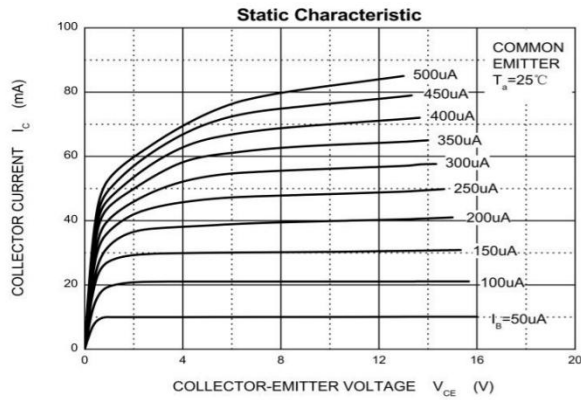
Absolute Maximum Ratings (T=25°C unless otherwise noted)

Parameter	Symbol	Value	Units
Collector-Base Voltage	V _{CBO}	60	V
Collector-Emitter Voltage	V _{CEO}	40	V
Emitter-Base Voltage	V _{EBO}	6	V
Collector Current - Continuous	I _c	200	mA
Collector Power Dissipation	P _c	100	mW
Thermal Resistance From Junction to Ambient	R _{θJA}	1250	°C/W
Operating Temperature Range	T _J	-55 to +150	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

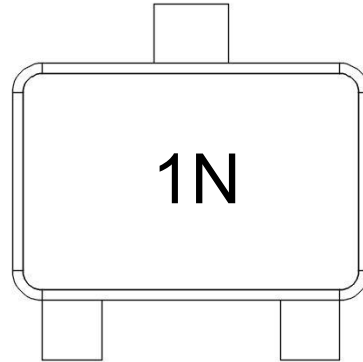
Electrical Characteristics (T=25°C unless otherwise noted)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _c =10μA, I _E =0	60			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _c =1mA, I _B =0	40			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =10μA, I _c =0	6			V
Collector cut-off current	I _{CEX}	V _{CE} =30V, V _{EB(off)} =3V			50	nA
Emitter cut-off current	I _{EBO}	V _{EB} =5V, I _c =0			100	nA
DC current gain	h _{FE}	V _{CE} =1V, I _c =0.1mA	40		300	
		V _{CE} =1V, I _c =1mA	70			
		V _{CE} =1V, I _c =10mA	100		300	
		V _{CE} =1V, I _c =50mA	60			
Collector-emitter saturation voltage	V _{CE(sat)}	I _c =10mA, I _B =1mA			0.2	V
		I _c =50mA, I _B =5mA			0.3	V
Base -emitter saturation voltage	V _{BE(sat)}	I _c =10mA, I _B =1mA	0.65		0.85	V
		I _c =50mA, I _B =5mA			0.95	V
Transition frequency	f _T	V _{CE} =20V, I _c =10mA, f=100MHz	300			MHz
Output capacitance	C _{ob}	V _{CB} =5V, I _E =0, f=1MHz			4	pF
Input capacitance	C _{ib}	V _{EB} =0.5V, I _c =0, f=1MHz			8	pF
Noise figure	NF	V _{CE} =5V, I _c =0.1mA, f=1MHz, R _s =1KΩ			5	dB
Delay time	t _d	V _{CC} =3V, V _{BE(off)} =0.5V, I _c =10mA, I _{B1} =1mA			35	ns
Rise time	t _r				35	ns
Storage time	t _s	V _{CC} =3V, I _c =10mA, I _{B1} =I _{B2} =1mA			200	ns
Fall time	t _f				50	ns

Typical Characteristics

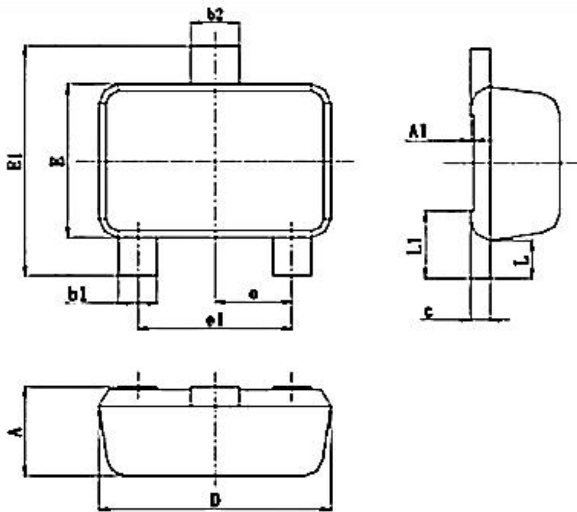


Marking Information



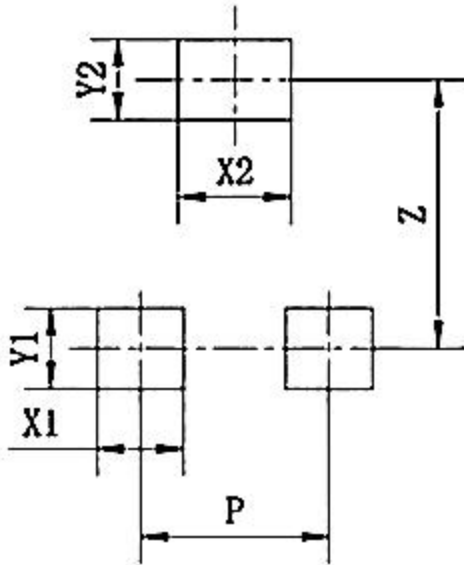
1N= Marking Code

Package mechanical data



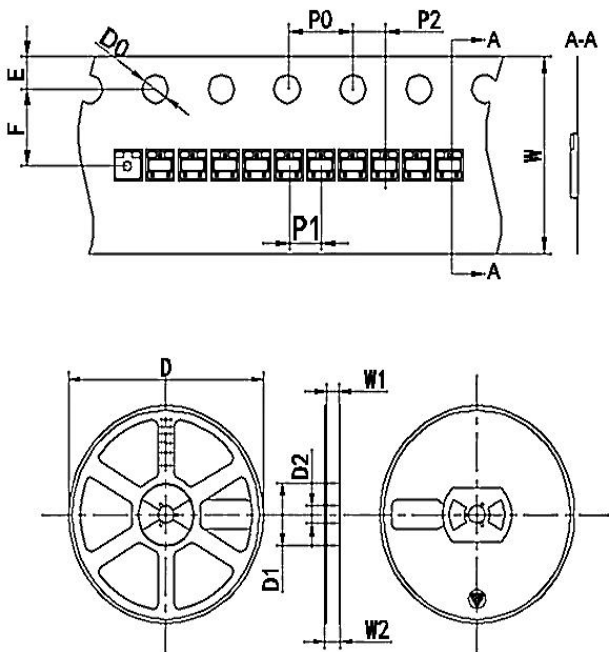
Symbol	Dimension in Millimeters	
	min	max
A	0.43	0.5
A1	0	0.05
D	1.15	1.25
E	0.75	0.85
E1	1.15	1.25
e	(0.4)	
e1	0.7	0.9
b1	0.15	0.25
b2	0.25	0.35
c	0.08	0.15
L	0.12	0.28
L1	(0.3)	

Suggested Land Pattern



Symbol	Dimension in Millimeters
	typ
X1	(0.4)
X2	(0.45)
Y1	(0.4)
Y2	(0.4)
P	(0.8)
Z	(1.1)

Tape & reel specification - SOT-723



Symbol	Dimension in Millimeters
Tape	
D0	1.50+0.10/-0.00
E	1.75±0.10
F	3.50±0.10
P0	4.00±0.10
P1	2.00±0.10
P2	2.00±0.10
W	8.00+0.3/-0.1
Reel	
D	178.0±2.00
D1	54.40±1.00
D2	13.00±1.00
W1	9.50±1.00
W2	12.30±1.00