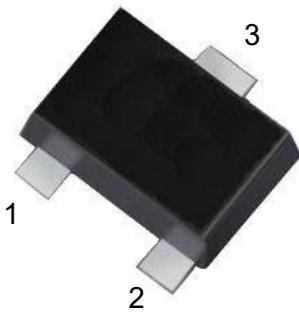


Features

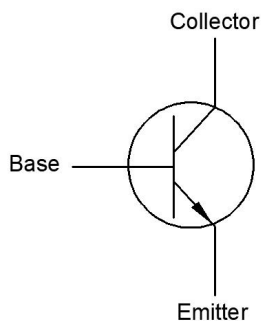
- Low profile package
- Ideal for automated placement
- Complementary to MMBT3906M(PNP).
- Power Dissipation of 200mW
- High Stability and High Reliability
- RoHS Compliant

Appearance & Symbol



Package: SOT-723

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



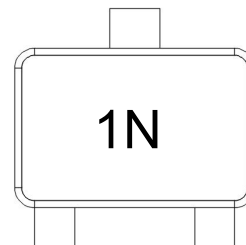
Mechanical Data

- 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

Marking Information



1N= Marking Code

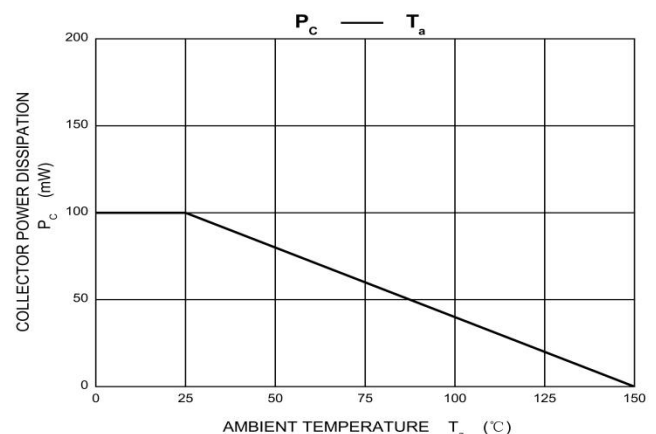
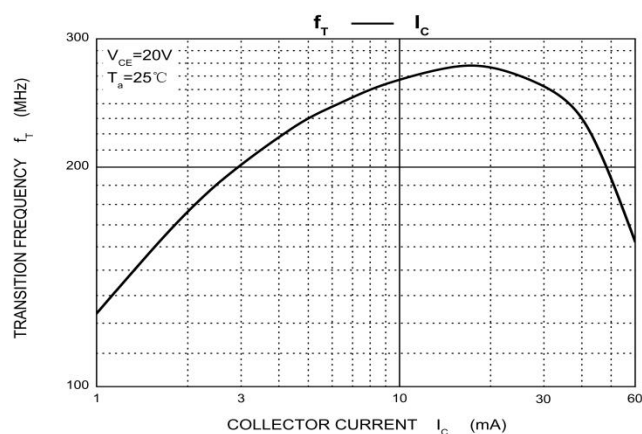
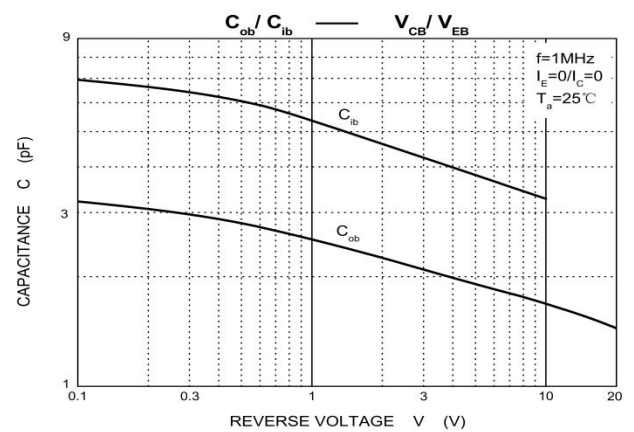
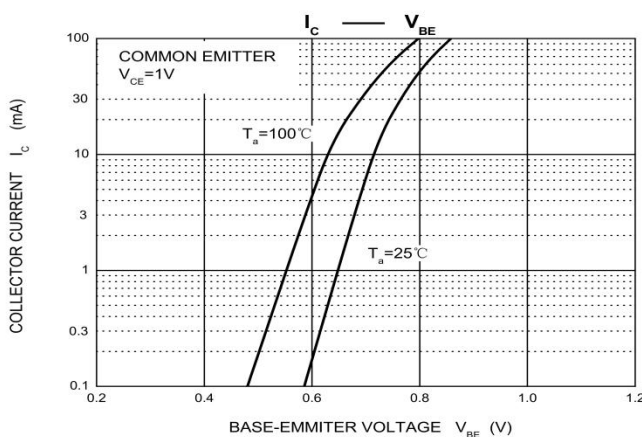
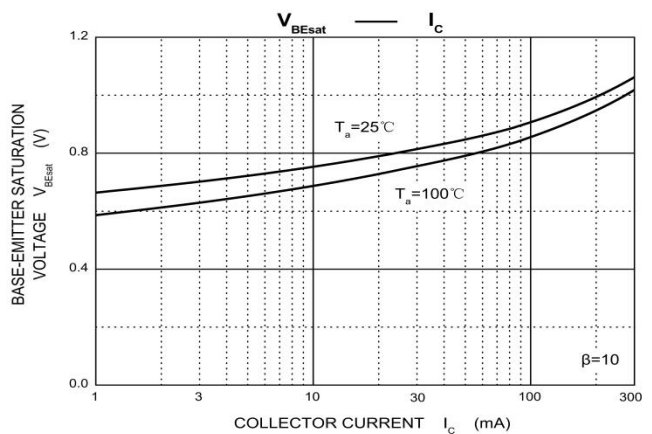
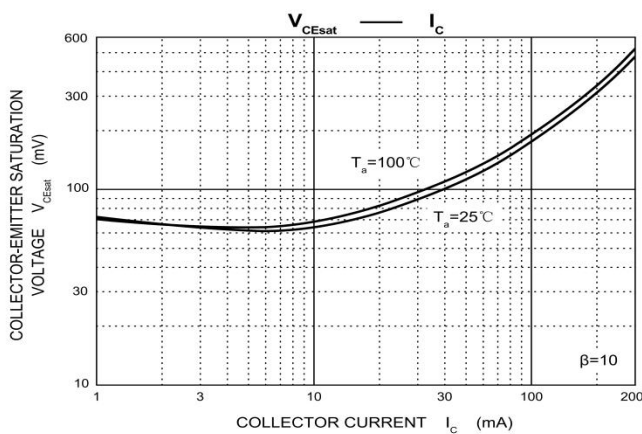
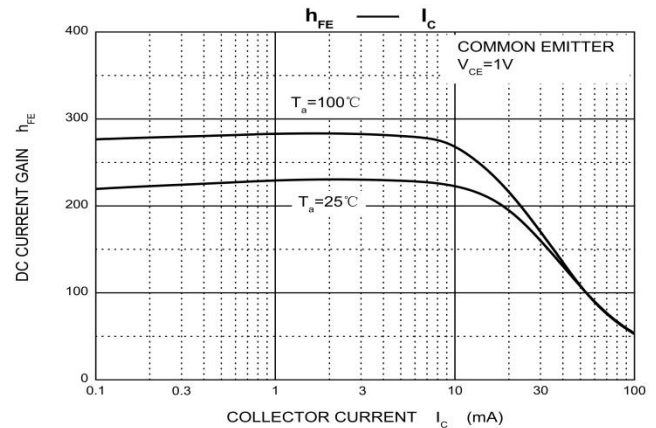
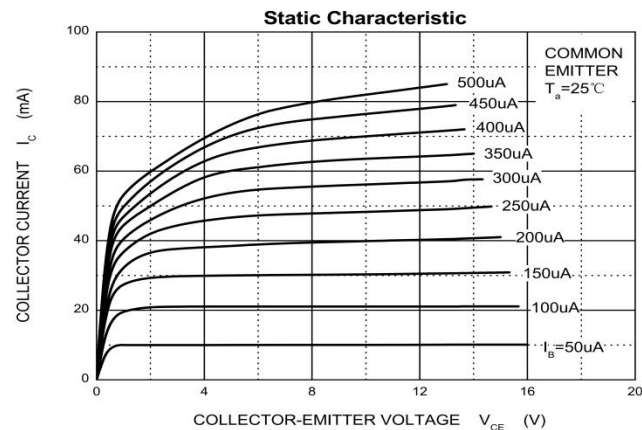
Absolute Maximum Ratings (T=25°C unless otherwise noted)

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	$R_{\theta JA}$	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)

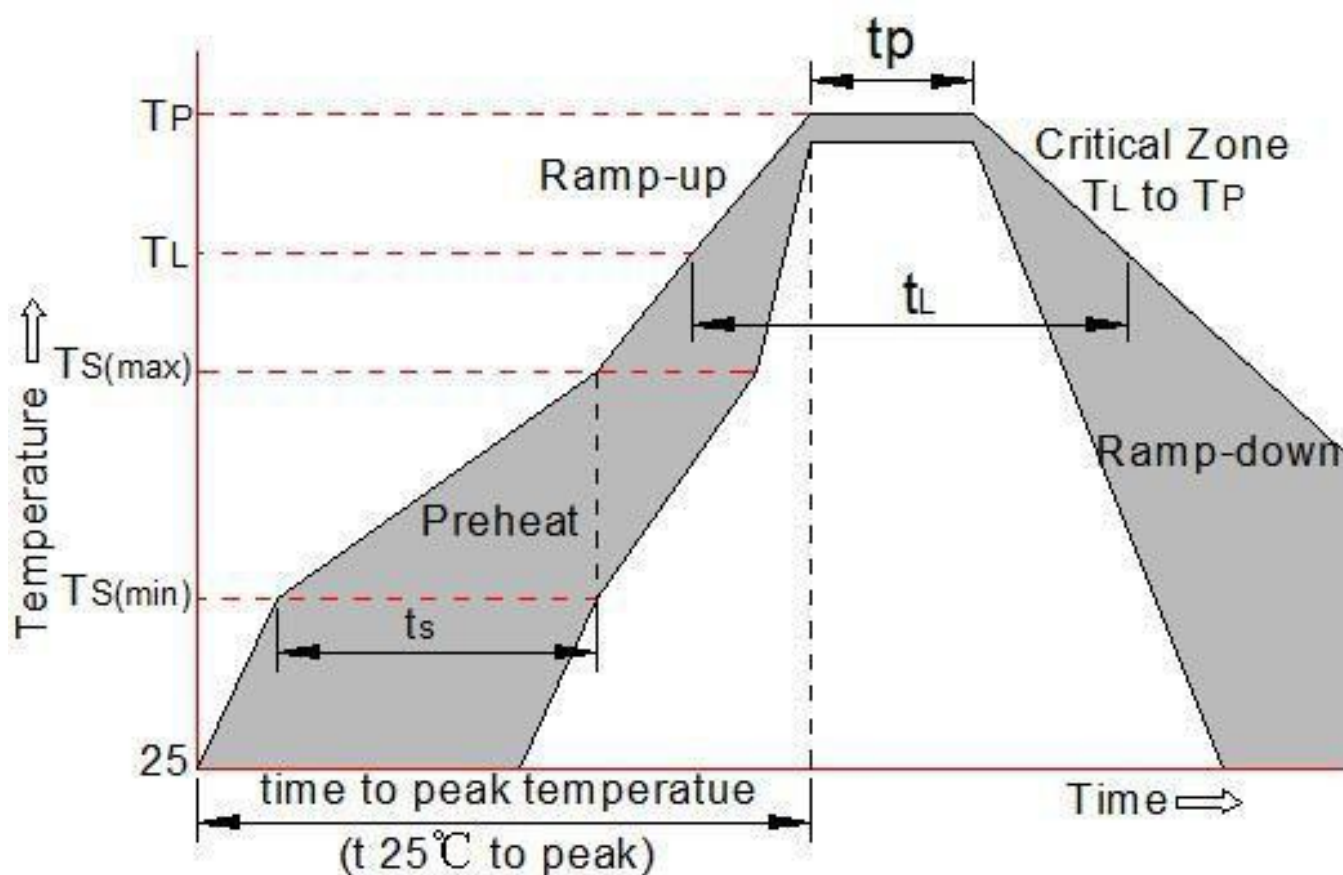
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	6			V
Collector cut-off current	I_{CEX}	$V_{CE}=30V, V_{EB(off)}=3V$			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	$V_{CE}=5V, I_C=0.1mA, f=1MHz, R_s=1K\Omega$			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

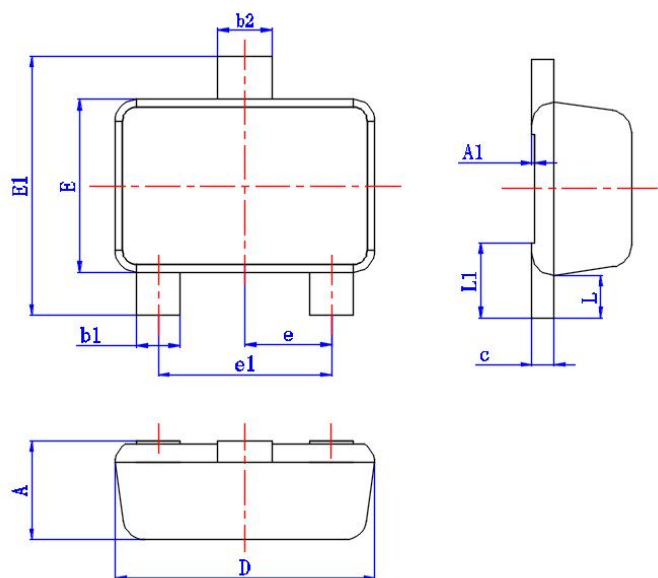


Soldering parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L) (Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C

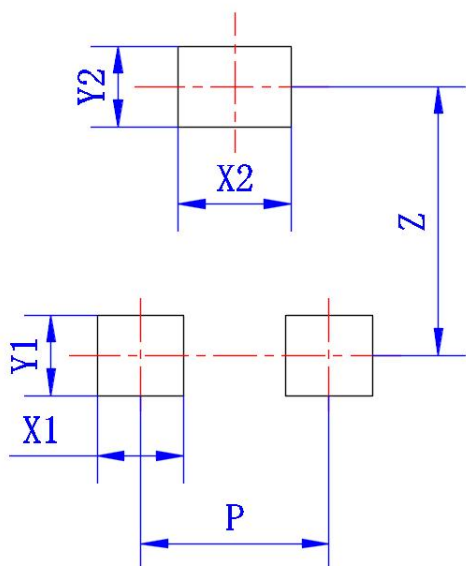


Package mechanical data



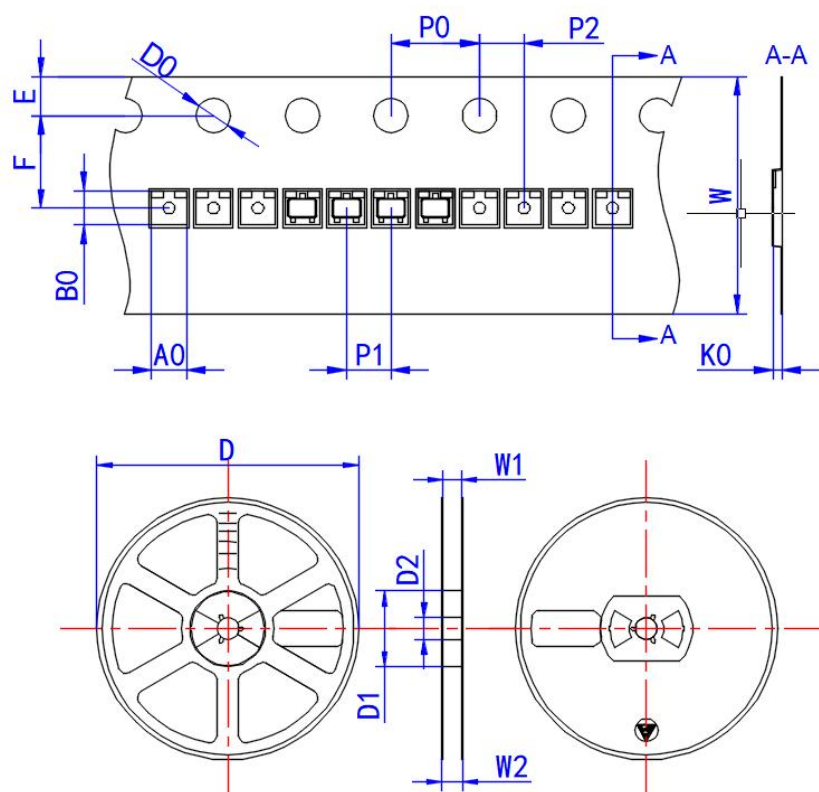
Symbol	Dimension in Millimeters	
	min	max
A	0.43	0.55
A1	0	0.05
D	1.15	1.25
E	0.75	0.85
E1	1.15	1.25
e	(0.4)	
e1	0.7	0.9
b1	0.15	0.25
b2	0.22	0.35
c	0.08	0.15
L	0.15	0.25
L1	(0.3)	

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	
A0	1.38±0.03
B0	1.45±0.05
K0	0.61±0.05
D0	1.55±0.05
E	1.75±0.10
F	3.50±0.05
P0	4.00±0.10
P1	2.00±0.05
P2	2.00±0.05
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