

SOT-23 Plastic-Encapsulate Transistors

Features:

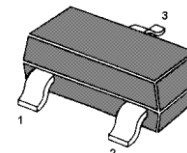
- Complementary to MMBT3906

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)



1AM= Device code

SOT-23



- BASE
- EMITTER
- COLLECTOR

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	200	mA
P_C	Collector Power Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance From Junction to Ambient	625	$^{\circ}\text{C}/\text{W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55 ~ +150	$^{\circ}\text{C}$

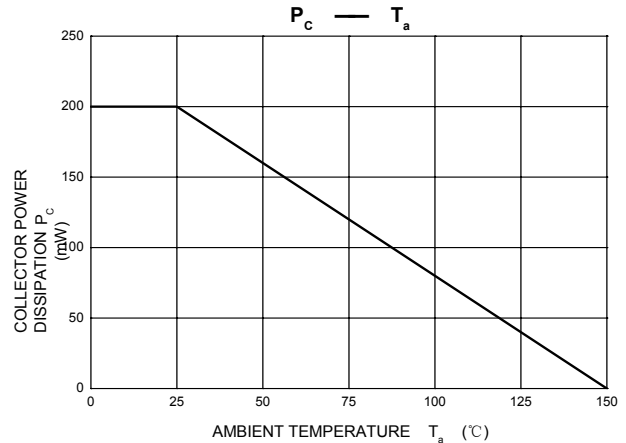
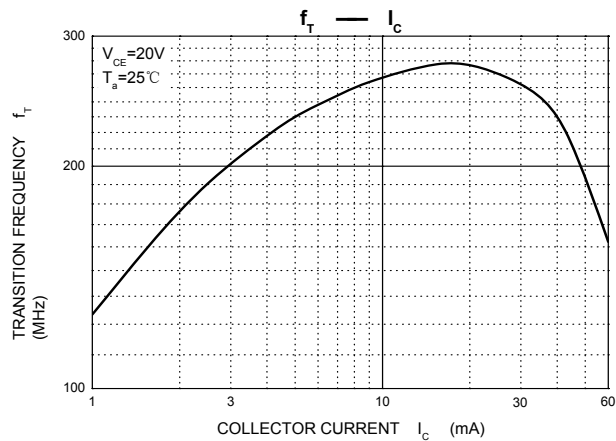
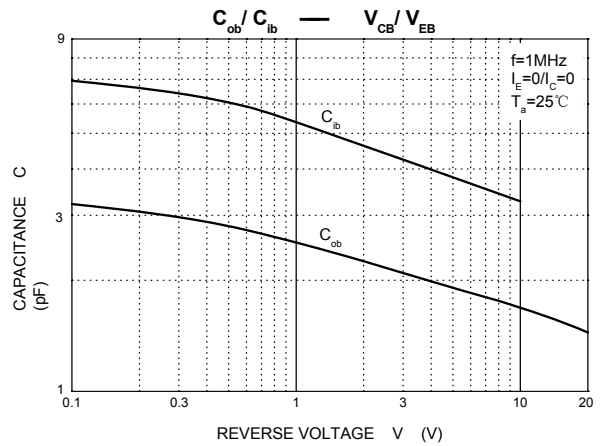
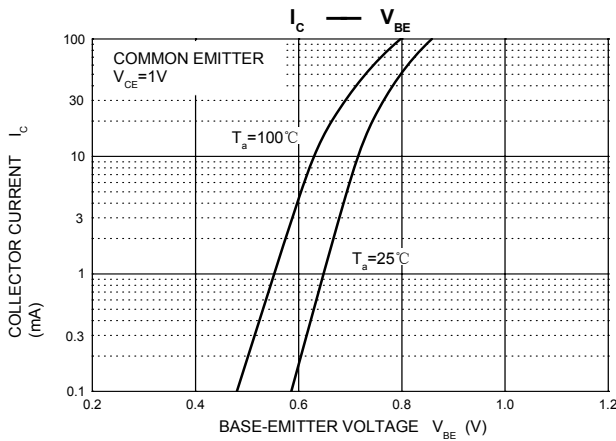
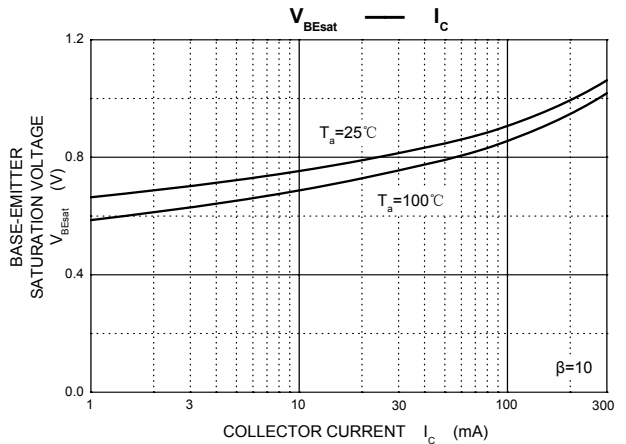
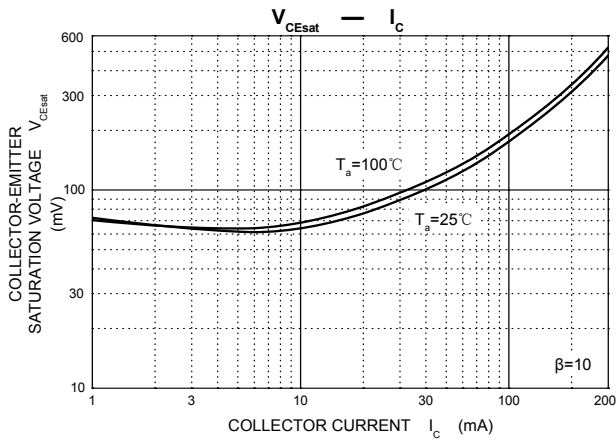
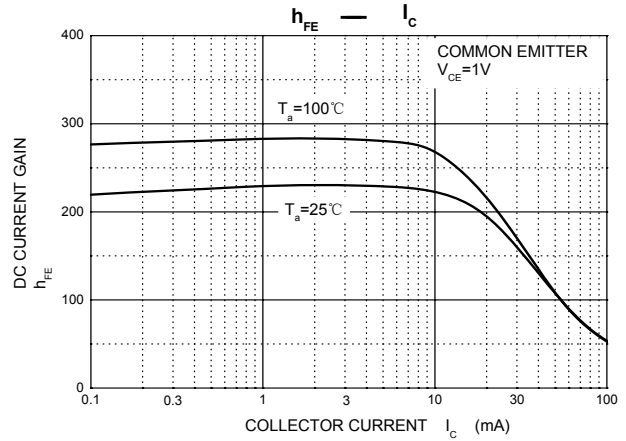
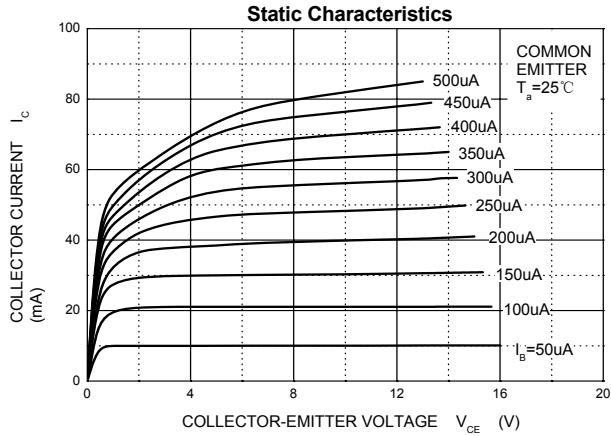
ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	60		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	6		V
Collector cut-off current	I_{CEX}	$V_{CE}=30\text{V}, V_{BE(off)}=3\text{V}$		50	μA
Collector cut-off current	I_{CBO}	$V_{CB}=60\text{V}, I_E=0$		0.1	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$		0.1	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=1\text{V}, I_C=10\text{mA}$	100	300	
	$h_{FE(2)}$	$V_{CE}=1\text{V}, I_C=50\text{mA}$	60		
	$h_{FE(3)}$	$V_{CE}=1\text{V}, I_C=100\text{mA}$	30		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=50\text{mA}, I_B=5\text{mA}$		0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=50\text{mA}, I_B=5\text{mA}$		0.95	V
Transition frequency	f_T	$V_{CE}=20\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	300		MHz
Delay Time	t_d	$V_{CC}=3\text{V}, V_{BE}=-0.5\text{V}$		35	nS
Rise Time	t_r	$I_C=10\text{mA}, I_{B1}=-I_{B2}=1.0\text{mA}$		35	nS
Storage Time	t_s	$V_{CC}=3\text{V}, I_C=10\text{mA},$		200	nS
Fall Time	t_f	$I_{B1}=-I_{B2}=1\text{mA}$		50	nS

CLASSIFICATION OF $h_{FE(1)}$

HFE	100-300	
RANK	L	H
RANGE	100 - 200	200 - 300

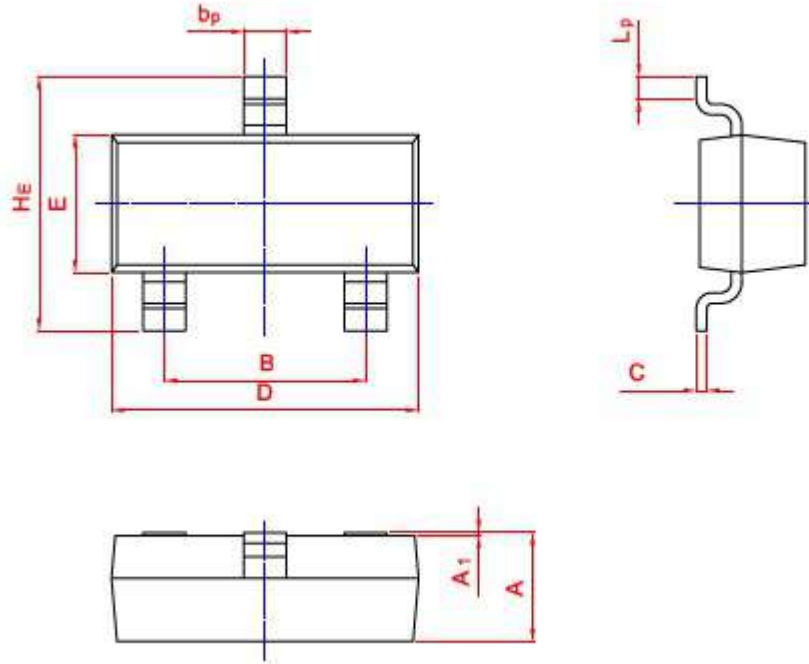
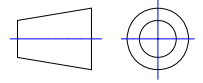
Typical Characteristics



PACKAGE OUTLINE

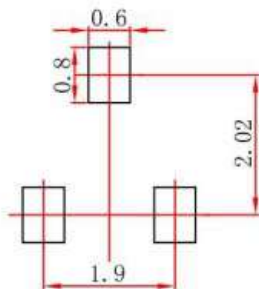
Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20

SOT-23 SUGGESTED PAD LAYOUT

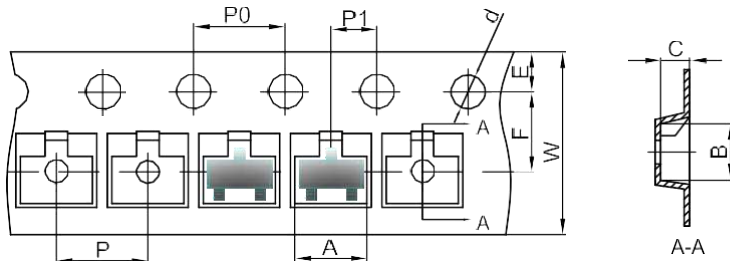


Note:

1. Controlling dimension in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purpose only.

SOT-23 Tape and Reel

SOT-23 Embossed Carrier Tape

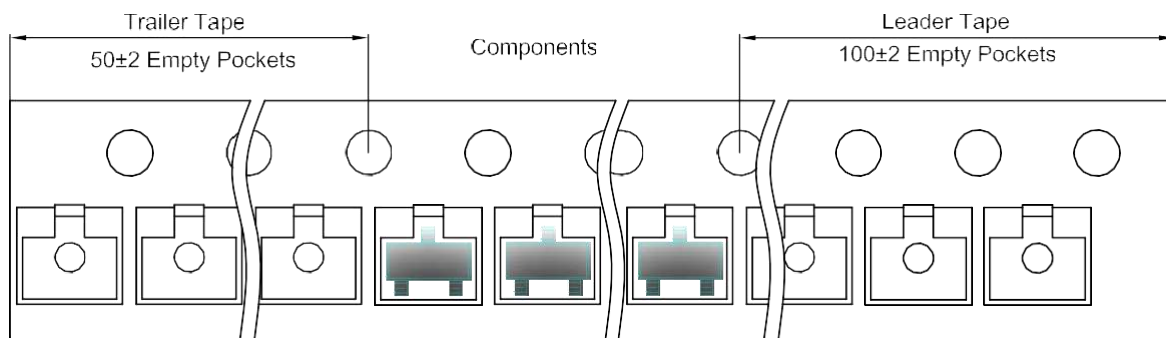


Packaging Description:

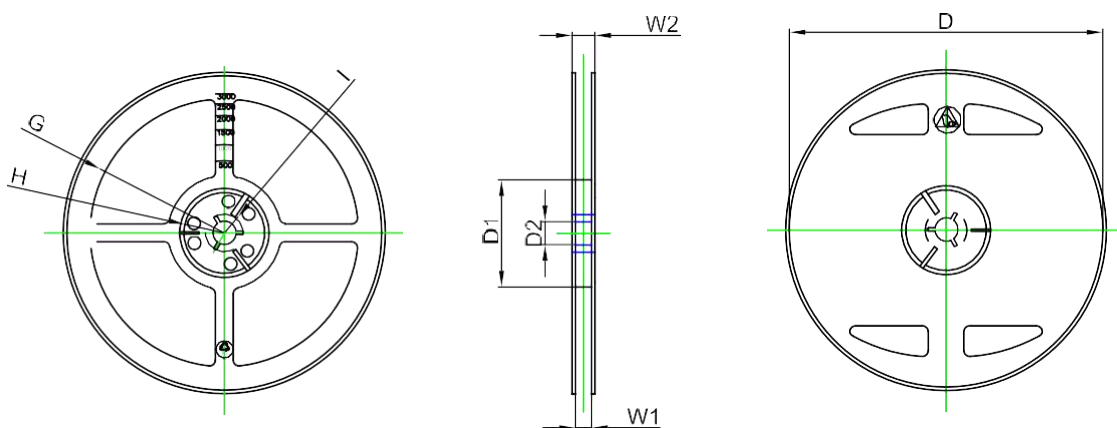
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer



SOT-23 Reel(S)



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R9.35	9.50	12.00

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	