

MMBT3904

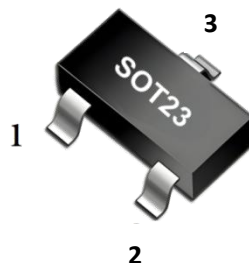
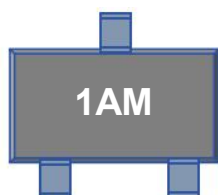
NPN SILICON TRANSISTOR

FEATURES

- *Collector-Emitter Voltage: $V_{CEO}=40V$.
- *Complementary to MMBT3906.

MARKING

Type Code: Marking: 1AM



1. BASE
2. EMITTER
3. COLLECTOR

ABSOLUTE MAXIMUM RATINGS (TC=25°C, unless otherwise specified)

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
T_j	Junction Temperature	150	°C
T_{stg}	Storage Temperature	-55~150	°C
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	625	°C/W

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

ELECTRICAL CHARACTERISTICS (Tc=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	60		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu A, I_C=0$	6		V
Collector cutoff current	I_{CEX}	$V_{CB}=30V, I_E=0$		50	nA
Collector cut-off current	I_{CBO}	$V_{CE}=60V, I_B=0$		100	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=5V, I_C=0$		100	nA
DC Current Gain	h_{FE1}	$V_{CE}=1V, I_C=10mA$	100	300	
	h_{FE2}	$V_{CE}=1V, I_C=50mA$	60		
	h_{FE2}	$V_{CE}=1V, I_C=100mA$	30		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=50mA, I_B=5mA$		0.3	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=50mA, I_B=5mA$		0.95	V
Transition frequency	f_T	$V_{CE}=20V, I_C=10mA, f=100MHz$	300		MHz

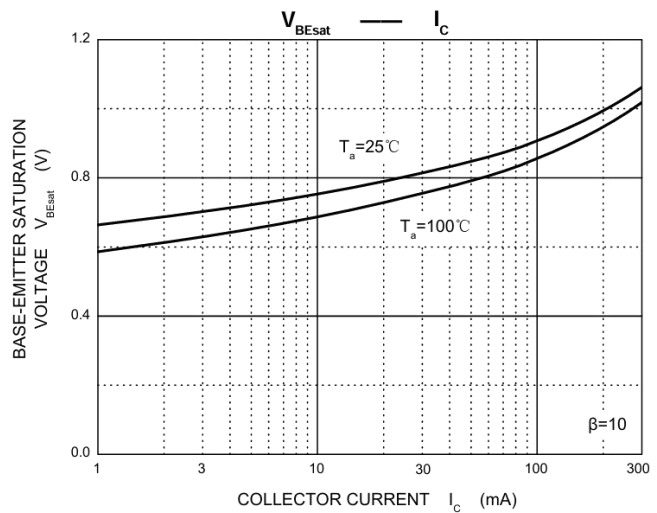
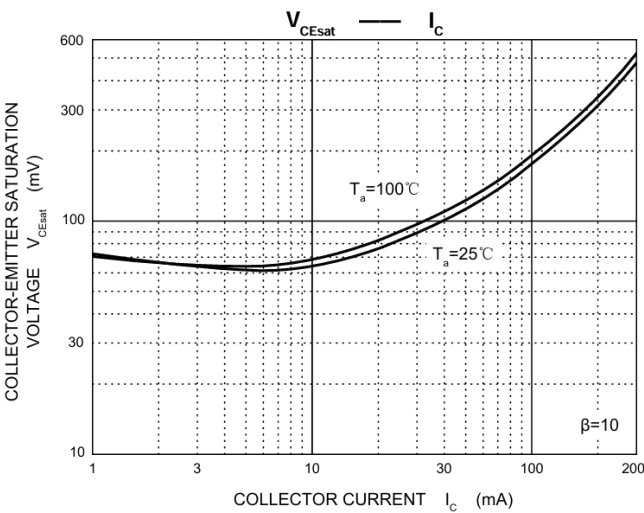
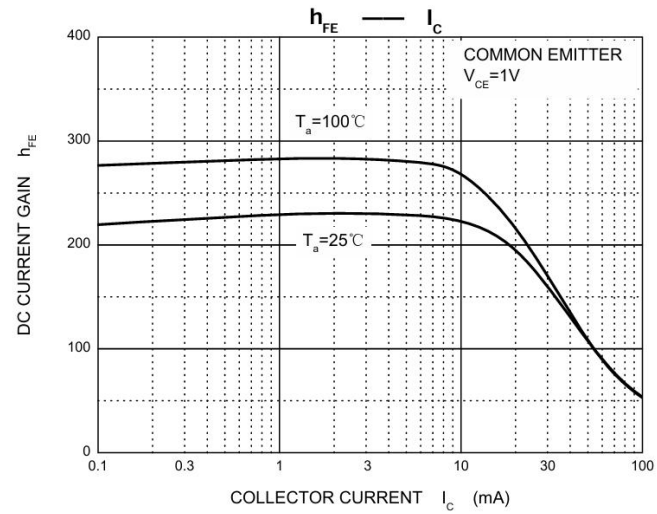
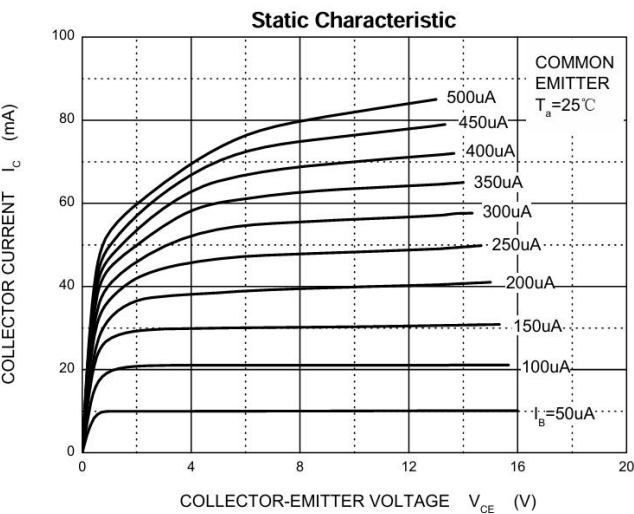


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PARAMETER	SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
Delay time	td	$V_{CC}=3V, V_{BE(off)}=-0.5V, I_C=10mA, I_{B1}=1mA$		35	ns
Rise time	tr	$V_{CC}=3V, V_{BE(off)}=-0.5V, I_C=10mA, I_{B1}=1mA$		35	ns
Storage time	ts	$V_{CC}=3V, I_C=10mA, I_{B1}=I_{B2}=1mA$		200	ns
Fall time	tf	$V_{CC}=3V, I_C=10mA, I_{B1}=I_{B2}=1mA$		50	ns

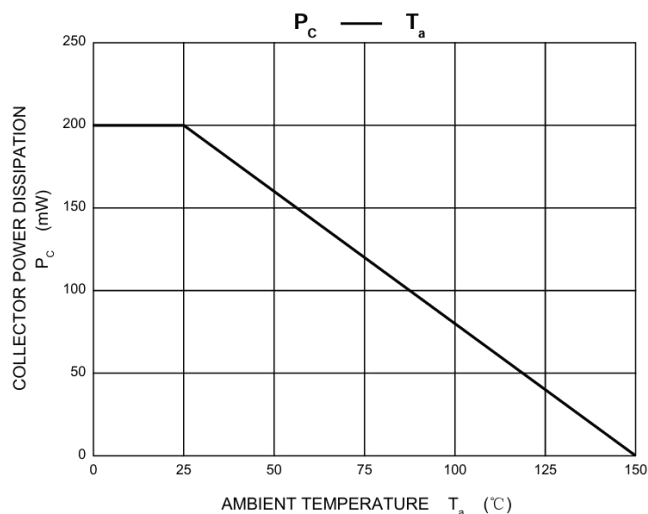
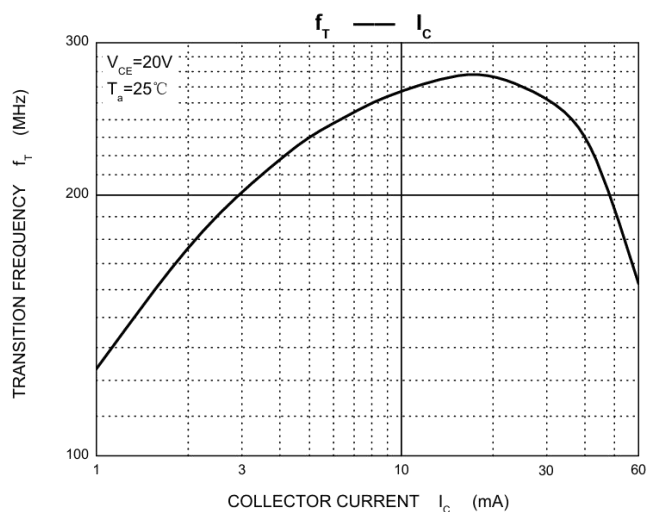
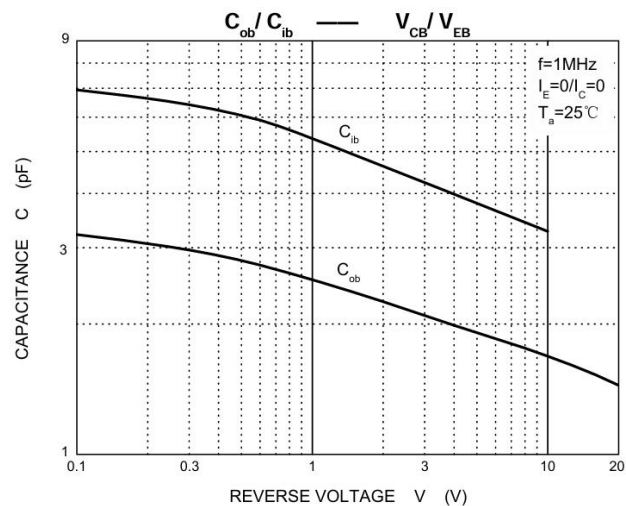
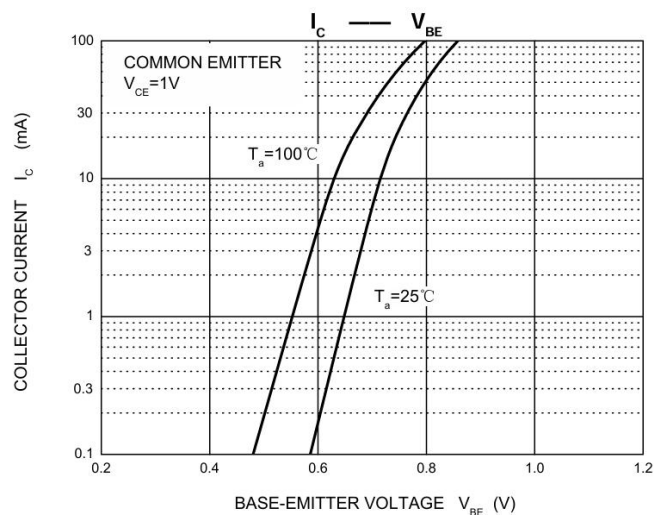
TYPICAL CHARACTERISTICS



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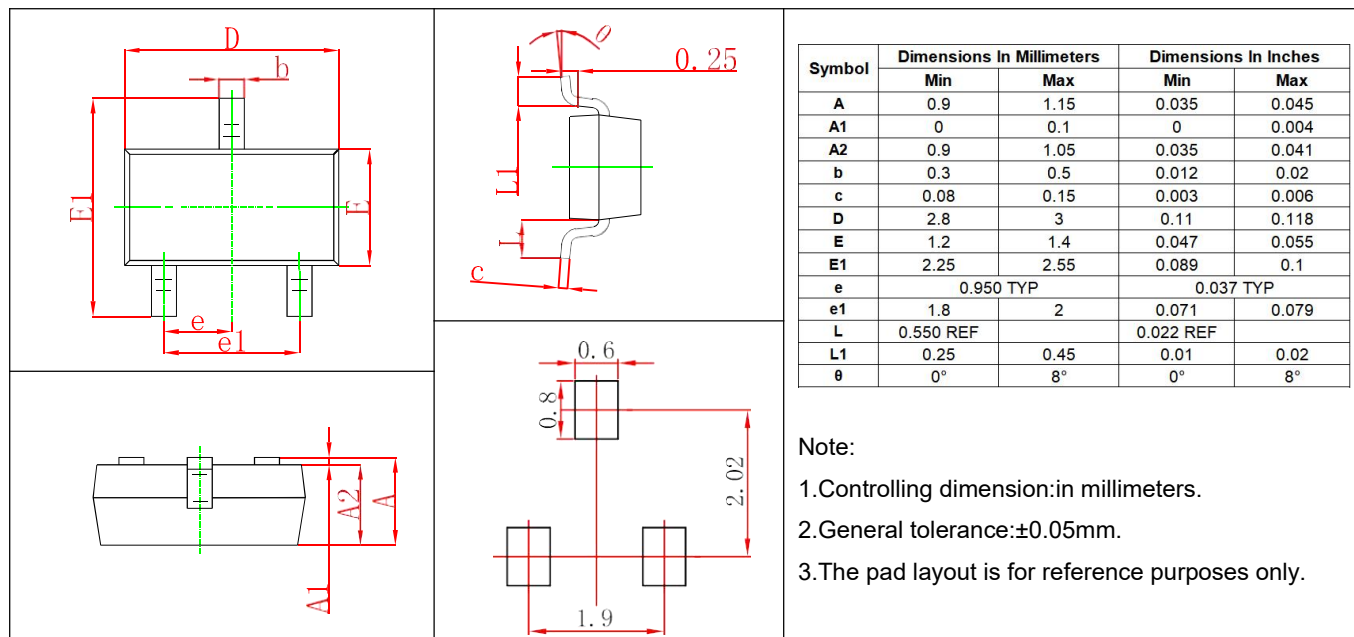
■ TYPICAL CHARACTERISTICS(Con.t)



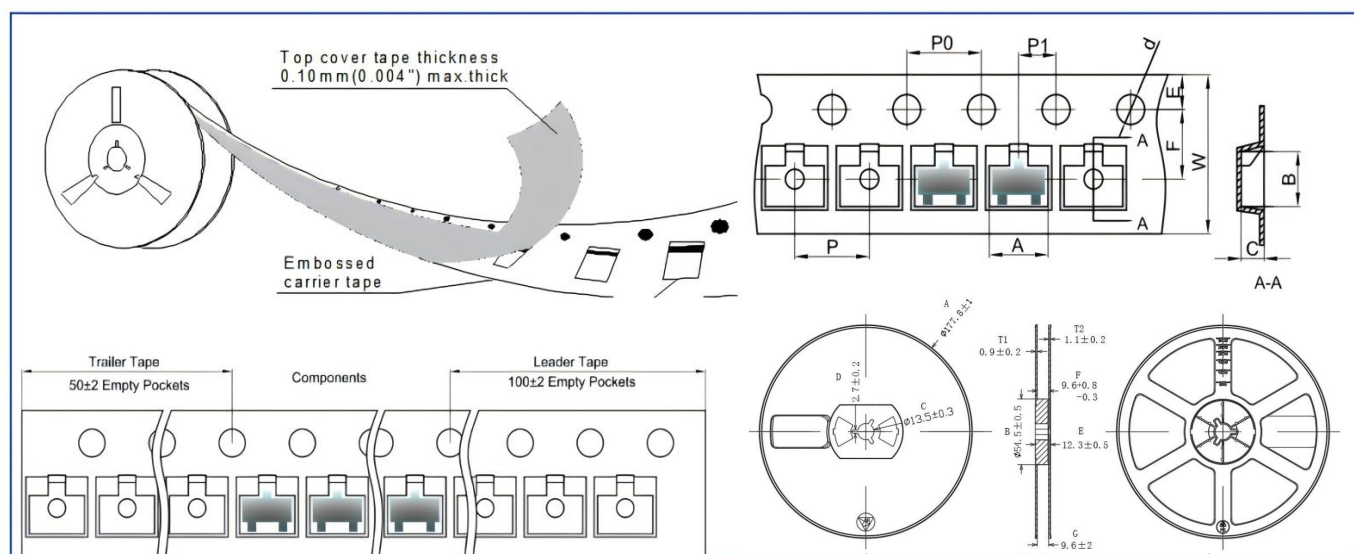
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SOT23 PACKAGE OUTLINE DIMENSIONS



REEL PACKING



Dimensions are in millimeter										
PKG TYPE	A	B	C	d	E	F	Po	P	P1	W
SOT-23	3.17	2.77	1.22	Φ1.55	1.75	3.50	4.00	4.00	2.00	8.00
Reel Option	A	B	C	D	E	F	G	T1	T2	Q.TY PER REEL
7" Dia	Φ177.8	Φ54.5	Φ13.5	2.7	12.3	9.6	9.6	0.9	1.1	3000PCS