

SINLOON®

SOT-23 塑封式晶體管

NPN MMBT3904

Plastic-Encapsulate Transistors SOT-23

FEATURE:

- ◆ Unitary to make use of ...
- ◆ Complementary to PNP MMBT3906

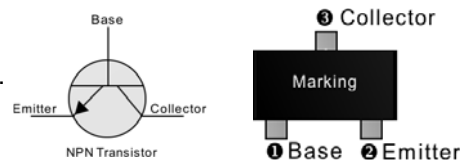
MECHANICAL CHARACTERISTICS:

- ◆ Case: SOT-23 Molded Plastic
- ◆ Weight: 0.01 Grams (approx)
- ◆ Marking: Body top (1AM)
- ◆ Terminals: Plated leads solderable per MIL-STD-202, Method 208.
- ◆ Mounting: Position any

Figure

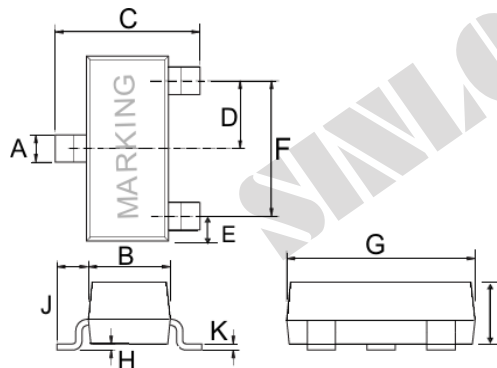


NPN MMBT3904 Top View



DIMENSION: mm

SOT-23		
Dim	Min	Max
A	0.30	0.50
B	1.19	1.40
C	2.10	2.50
D	0.89	1.05
E	0.45	0.61
F	1.78	2.05
G	2.65	3.05
H	0.01	0.15
I	0.89	1.10
J	0.45	0.61
K	0.08	0.18



Maximum Ratings @T_A=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}	6.0	V
Collector Current - Continuous	I _C	200	mA
Collector Power Dissipation	P _C	200	mW
Thermal Resistance From Junction to Ambient	T _{θJA}	625	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{stg}	-55~150	°C
Operating Temperature	T _{OPR}	0 ~ +70	°C

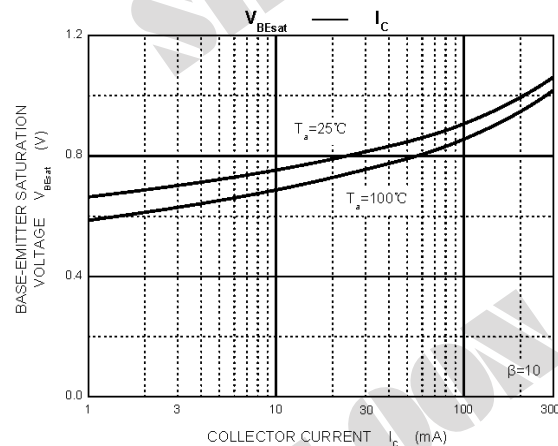
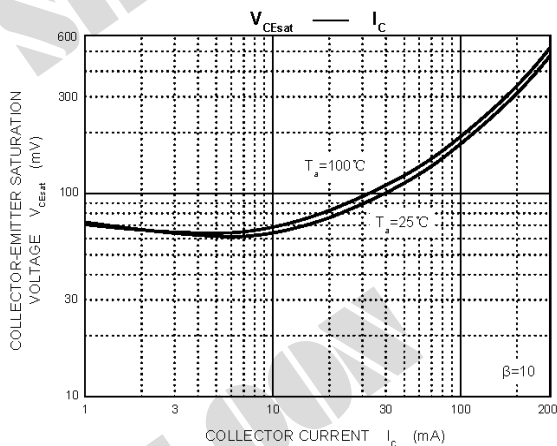
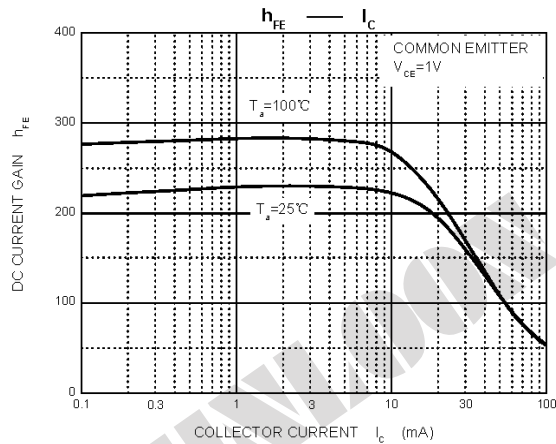
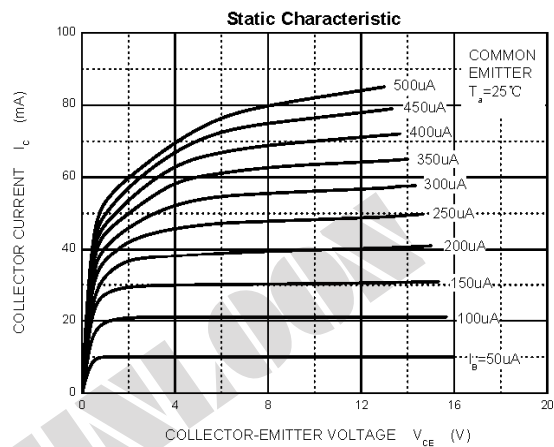
Classification of h_{FE(1)}

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

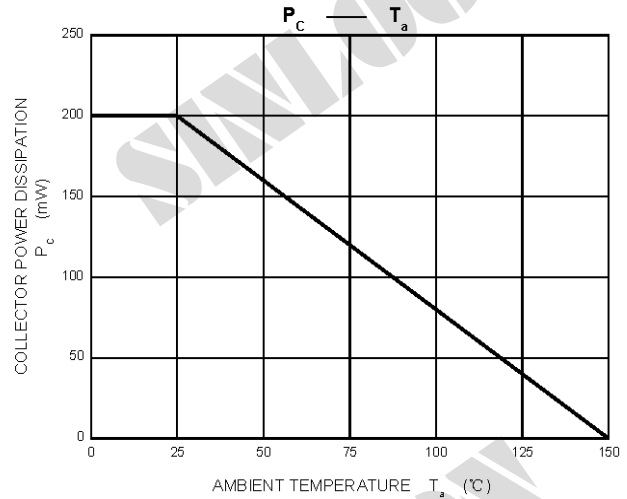
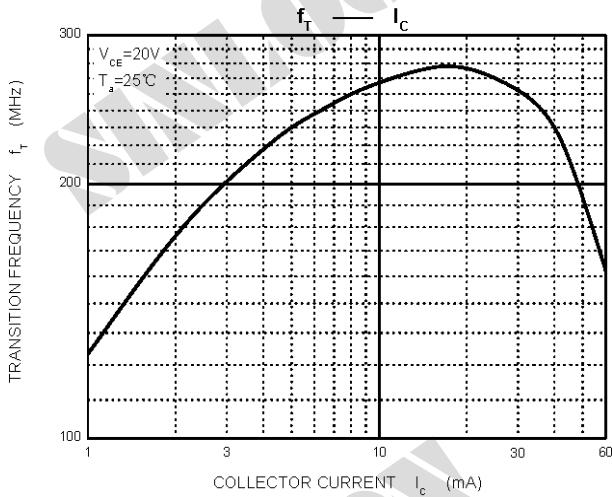
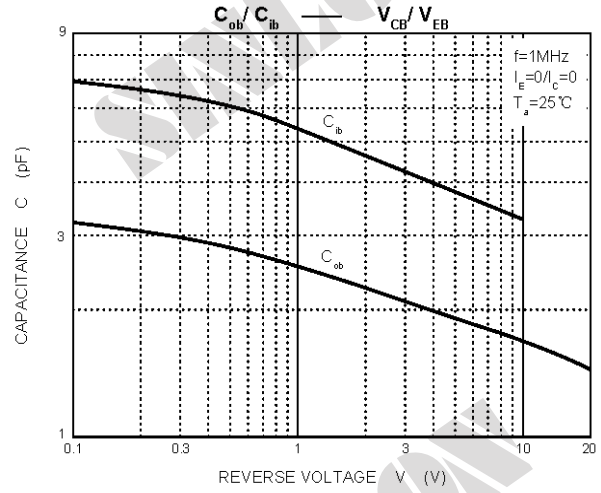
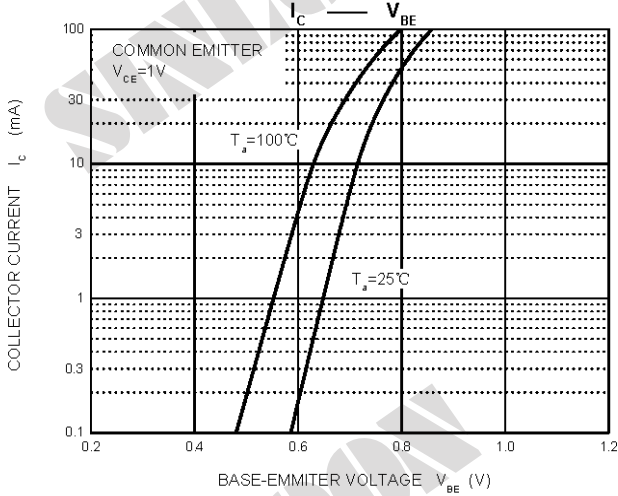
□ Electrical Characteristics $T_{amb}=25^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Collector-Base Breakdown voltage	$V(\text{BR})_{\text{CBO}}$	$I_{\text{C}}=10\mu\text{A}, I_{\text{E}}=0$	60	---	V
Collector-Emitter Breakdown voltage	$V(\text{BR})_{\text{CEO}^*}$	$I_{\text{C}}=1\text{mA}, I_{\text{B}}=0$	40	---	V
Emitter-Base Breakdown voltage	$V(\text{BR})_{\text{EBO}}$	$I_{\text{E}}=10\mu\text{A}, I_{\text{C}}=0$	5	---	V
Collector cut-off current	I_{CEX}	$V_{\text{CE}}=30\text{V}, V_{\text{EB(off)}}=3\text{V}$	---	50	nA
	I_{CBO}	$V_{\text{CB}}=60\text{V}, I_{\text{E}}=0$	---	100	nA
Emitter cut-off current	I_{EBO}	$V_{\text{EB}}=5\text{V}, I_{\text{C}}=0$	---	100	nA
DC Current gain	$h_{\text{FE}(1)}$	$V_{\text{CE}}=1\text{V}, I_{\text{C}}=10\text{mA}$	100	300	---
	$h_{\text{FE}(2)}$	$V_{\text{CE}}=1\text{V}, I_{\text{C}}=50\text{mA}$	60	---	---
	$h_{\text{FE}(3)}$	$V_{\text{CE}}=1\text{V}, I_{\text{C}}=100\text{mA}$	30	---	---
Collector-emitter saturation voltage	$V_{\text{CE(sat)}}$	$I_{\text{C}}=50\text{mA}, I_{\text{B}}=5\text{mA}$	---	0.3	V
Base-emitter saturation voltage	$V_{\text{BE(sat)}}$	$I_{\text{C}}=50\text{mA}, I_{\text{B}}=5\text{mA}$	---	0.95	V
Transition frequency	f_{T}	$V_{\text{CE}}=20\text{V}, I_{\text{C}}=10\text{mA}, f=100\text{MHZ}$	300	---	MHZ
Delay time	t_{d}	$V_{\text{CC}}=3\text{V}, V_{\text{BE(off)}}=-0.5\text{V}$ $I_{\text{C}}=10\text{mA}, I_{\text{B1}}=1\text{mA}$	---	35	ns
Rise time	t_{r}				
Storage time	t_{s}	$V_{\text{CC}}=3\text{V}, I_{\text{C}}=10\text{mA}, I_{\text{B1}}=I_{\text{B2}}=1\text{mA}$	---	200	ns
Fall time	t_{f}		---		

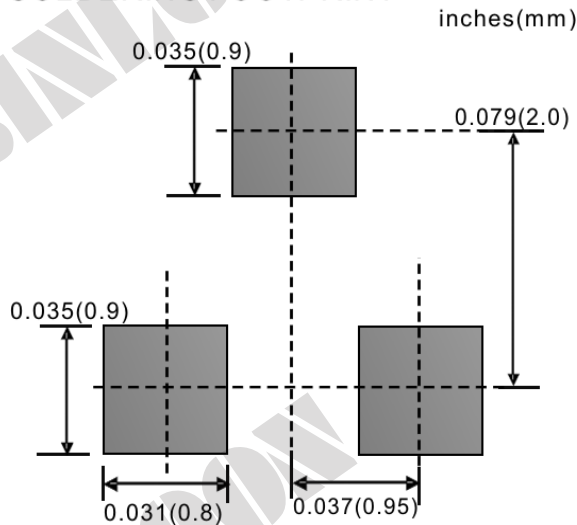
□ Typical Characteristics



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SOLDERING FOOTPRINT



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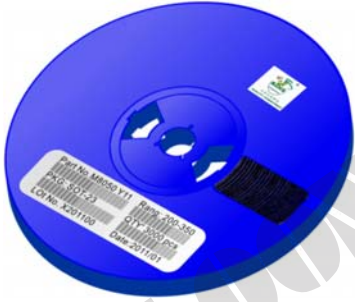
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COMMON PACKING INFORMATION:

Product Number:	Package Type	Packing Quantity	Carton Quantity	Apporx Gross Weight
MMBT3904	SOT-23	3000 Tape & Reel	180,000 Ctn	8.45Kg

Reel Diameter (Inch)	Quantity (Pcs)	Inner Box Size (mm)	Quantity	Carton Size (mm)	Quantity
7"	3000	L: 203 x W:203 x H:195	45,000 pcs	L:439 x W:438 x H:220	180,000pcs

Plastic Reel : Fig-1



Reel Qty: 3000 Reel

Inner Box: Fig-2



Inner Box Qty: 45,000 PCS

Carton Pack Fig-3



Carton Qty: 180,000 PCS

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Mayloon characteristic parameters of electronic product specification changes or updates without prior notice。