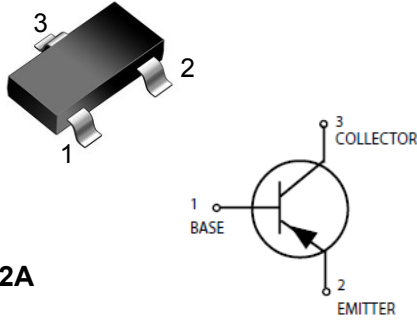


SOT-23



MARKING: 2A

Features

- As complementary type the NPN transistor MMBT3904 is recommended
- Epitaxial planar die construction
- Halogen free and RoHS compliant

Mechanical Data

SOT-23 Small Outline Plastic Package
Epoxy UL: 94V-0

Summary of Packing Options

Package	Packing Description	Packing Quantity	Industry Standard
SOT-23	Tape/Reel, 7" reel	3000	EIA-481-1

Maximum Ratings & Thermal Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified.)

Symbol	Parameter	Value	Units
V _{CBO}	Collector-Base Voltage	-40	V
V _{CEO}	Collector-Emitter Voltage	-40	V
V _{EBO}	Emitter-Base Voltage	-5	V
I _C	Collector Current -Continuous	-200	mA
P _C	Total Device Dissipation	200	mW
R _{θJA}	Thermal Resistance Junction to Ambient	625	°C/W
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55 to +150	°C

Electrical Characteristics

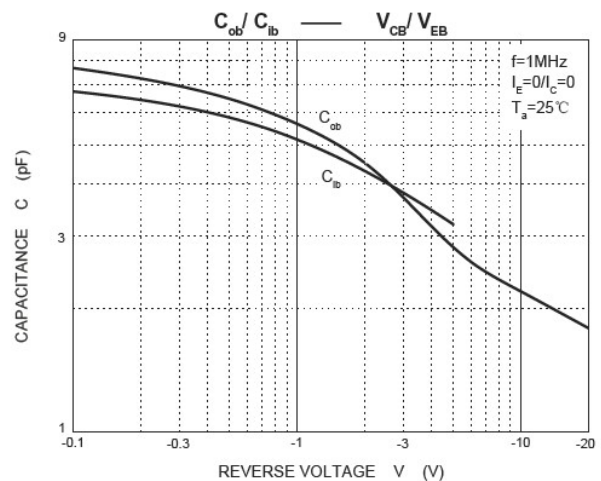
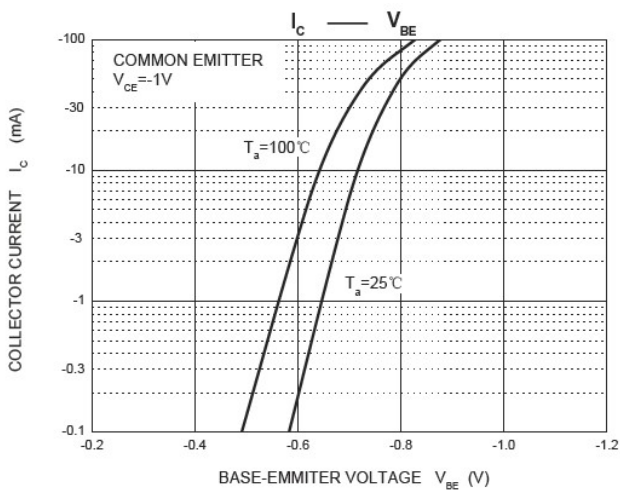
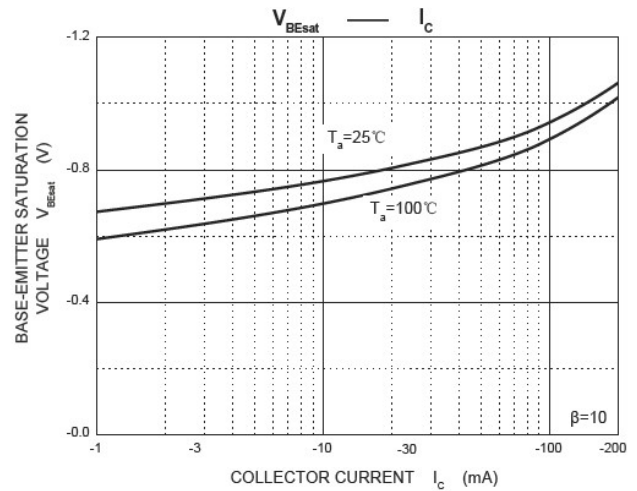
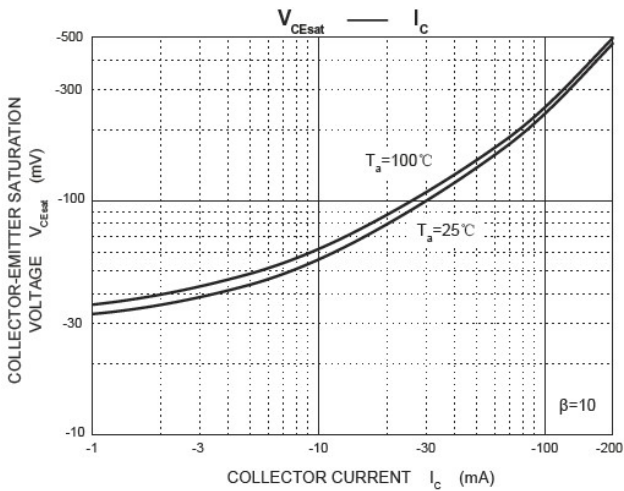
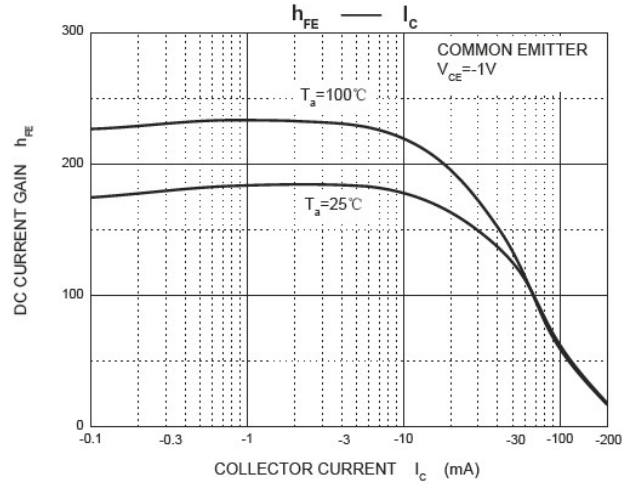
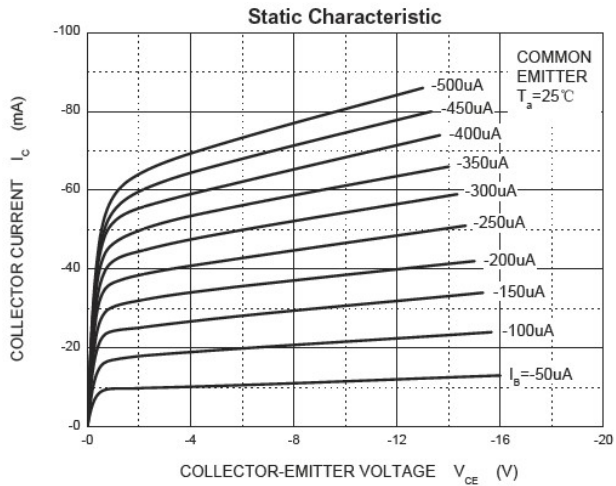
(Ratings at 25°C ambient temperature unless otherwise specified).

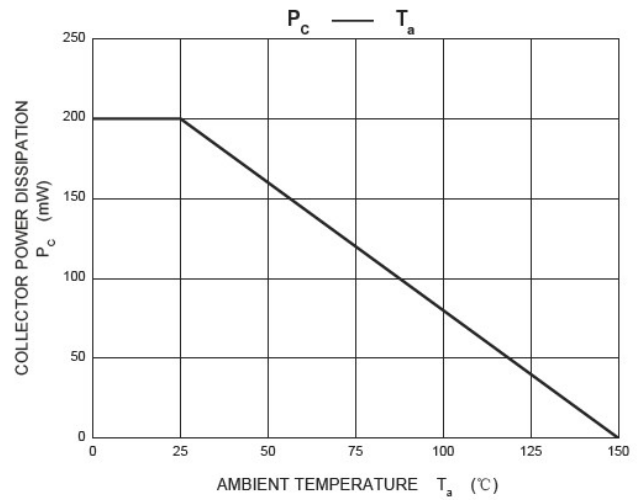
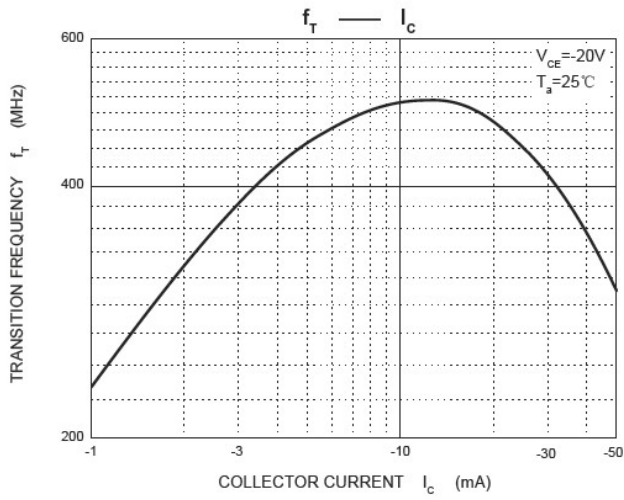
Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	V _{CBO}	I _C =-10μA, I _E =0	-40		V
Collector-emitter breakdown voltage	V _{CEO}	I _C =-1mA, I _B =0	-40		V
Emitter-base breakdown voltage	V _{EBO}	I _E =-10μA, I _C =0	-5		V
Collector cut-off current	I _{CB0}	V _{CB} =-40V, I _E =0		-0.1	μA
Collector cut-off current	I _{CEx}	V _{CE} =-30V, V _{BE(off)} =-3V		-50	nA
Emitter cut-off current	I _{EBO}	V _{EB} =-5V, I _C =0		-0.1	μA
DC current gain	h _{FE(1)}	V _{CE} =-1V, I _C =-10mA	100	300	
	h _{FE(2)}	V _{CE} =-1V, I _C =-50mA	60		
	h _{FE(3)}	V _{CE} =-1V, I _C =-100mA	30		
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =-50mA, I _B =-5mA		-0.4	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
Delay Time	t _d	V _{CC} =-3V, V _{BE} =-0.5V		35	nS
Rise Time	t _r	I _C =-10mA, I _{B1} =-I _{B2} =-1mA		35	nS
Storage Time	t _s	V _{CC} =-3V, I _C =-10mA,		225	nS
Fall Time	t _f	I _{B1} =-I _{B2} =-1mA		75	nS

CLASSIFICATION OF $h_{FE(1)}$

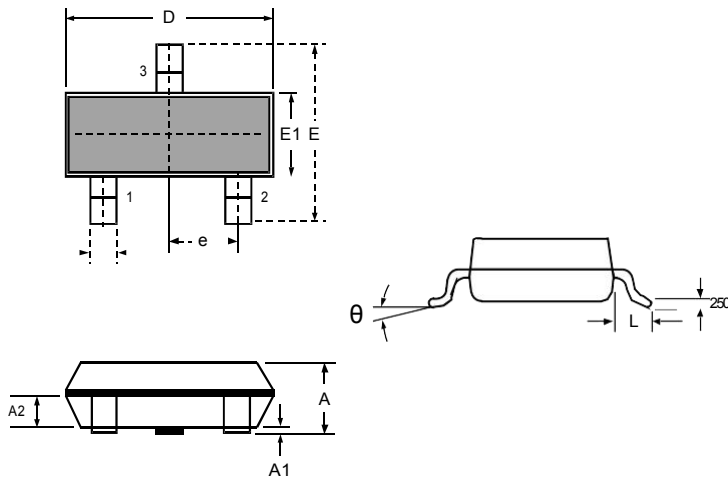
HFE	100-300	
RANK	L	H
RANGE	100-200	200-300

Ratings and Characteristic Curves





Package Outline Dimensions: SOT-23



DIMENSIONS

SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
D	2.800	3.000	0.110	0.118
b	0.300	0.500	0.012	0.020
E	2.250	2.550	0.089	0.100
E1	1.200	1.400	0.047	0.055
e	0.950 BSC		0.037 BSC	
L	0.300	0.500	0.012	0.020
θ	0	8°	0	8°