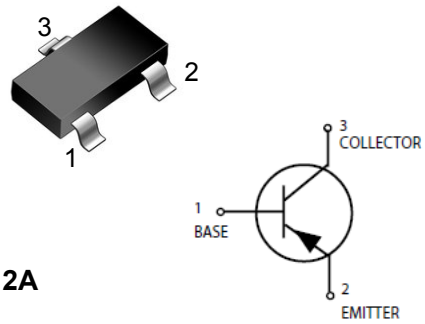
SOT-23



MARKING: 2A

Features

As complementary type the NPN transistor PMBT3904 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℃ 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
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	625	℃/W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55 to +150	℃

Electrical Characteristics

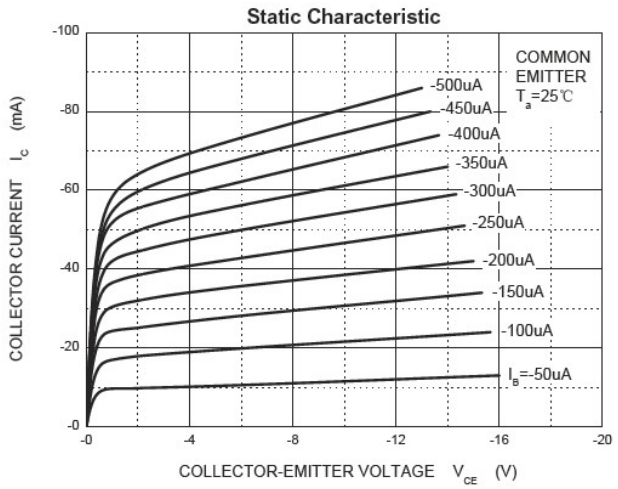
(Ratings at 25℃ ambient temperature unless otherwise specified).

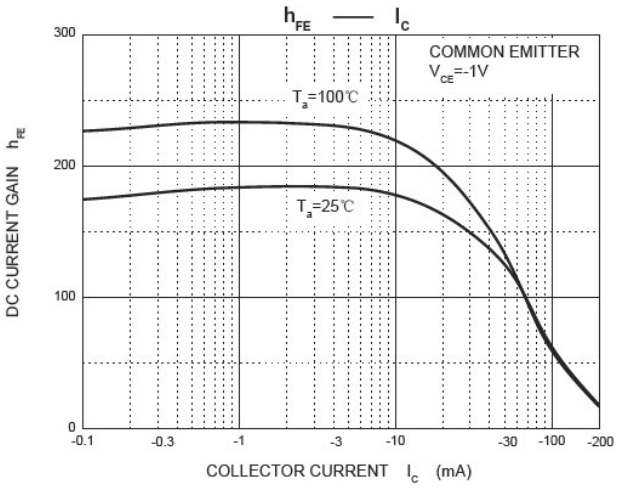
Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	V_{CBO}	I_C=-10μA, I_E=0	-40		V
Collector-emitter breakdown voltage	V_{CEO}	I_C=-1mA, I_B=0	-40		V
Emitter-base breakdown voltage	V_{EBO}	I_E=-10μA, I_C=0	-5		V
Collector cut-off current	I_{CBO}	V_{CB}=-40V, I_E=0		-0.1	μA
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	td	V_{CC}=-3V,V_{BE}=-0.5V		35	nS
Rise Time	tr	I_C=-10mA, I_{B1}=-I_{B2}=-1mA		35	nS
Storage Time	ts	V_{CC}=-3V,I_C=-10mA,		225	nS
Fall Time	tf	I_{B1}=-I_{B2}=-1mA		75	nS

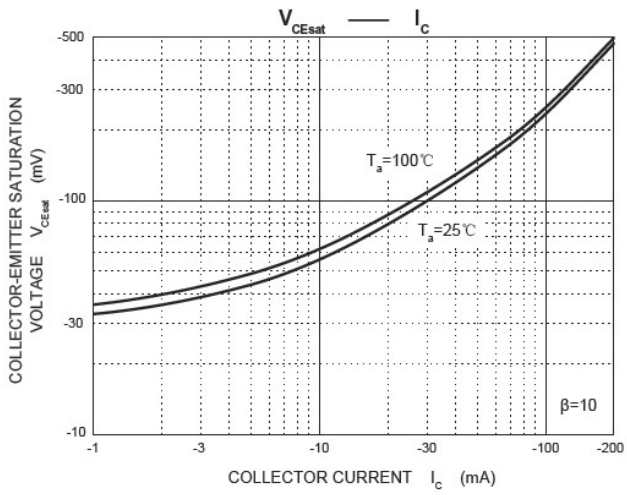
CLASSIFICATION OF $h_{FE(1)}$

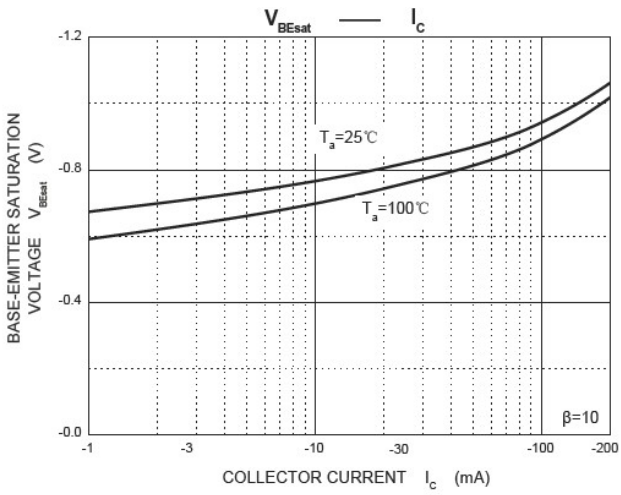
HFE	100-300	
RANK	L	H
RANGE	100-200	200-300

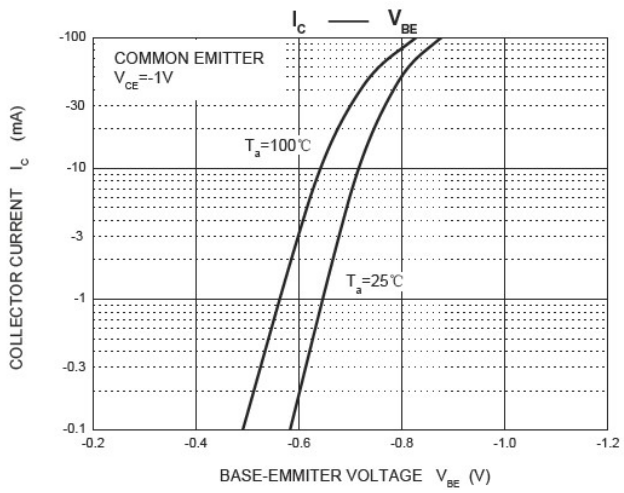
Ratings and Characteristic Curves

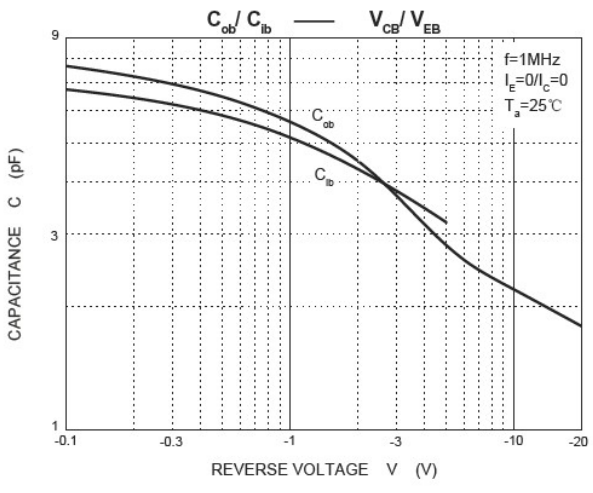


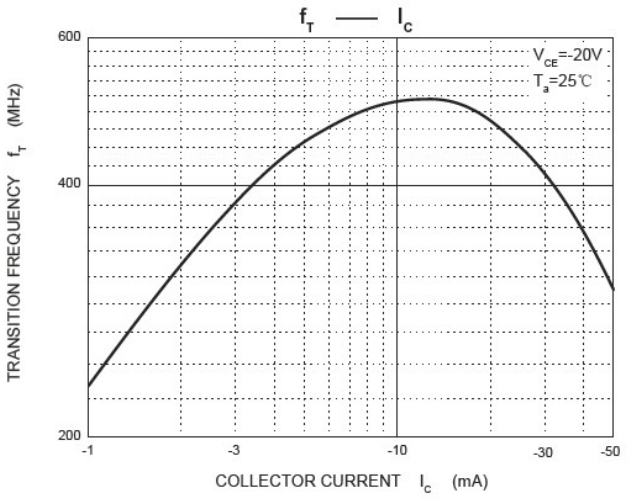


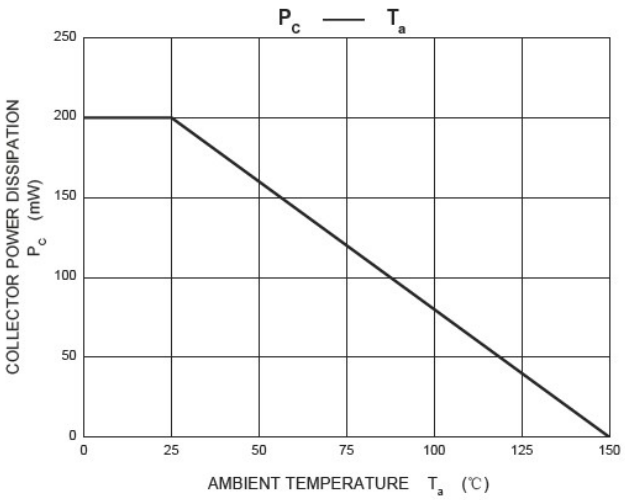




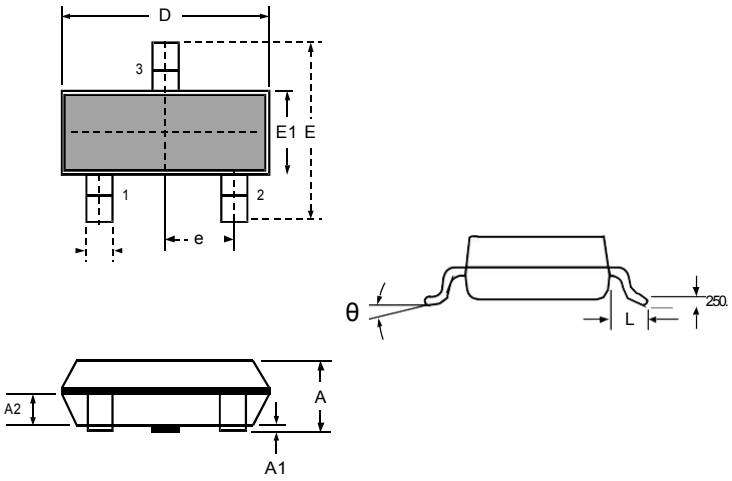








Package Outline Dimensions: SOT-23



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°

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