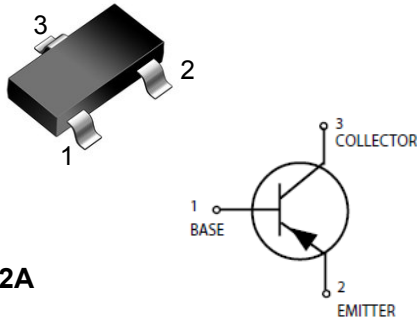


SOT-23

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°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
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	625	°C/W
T_J	Junction Temperature	150	°C
T_{stg}	Storage Temperature	-55 to +150	°C

Electrical Characteristics

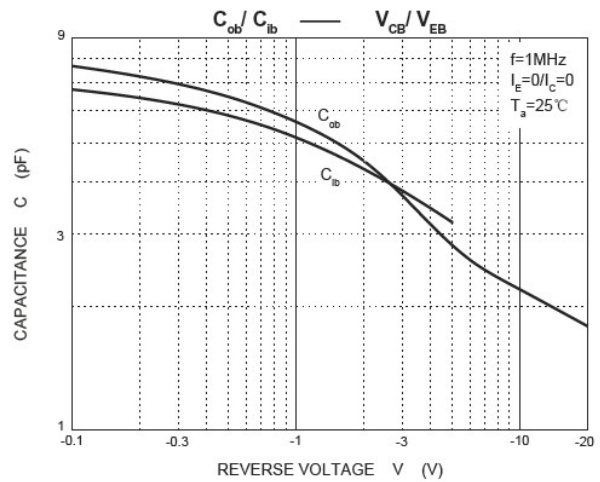
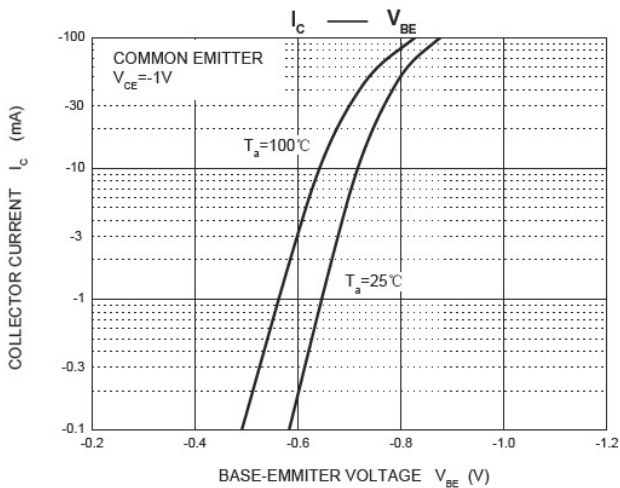
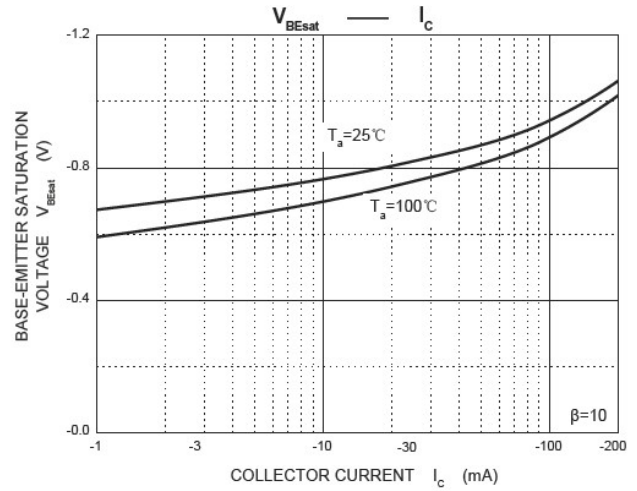
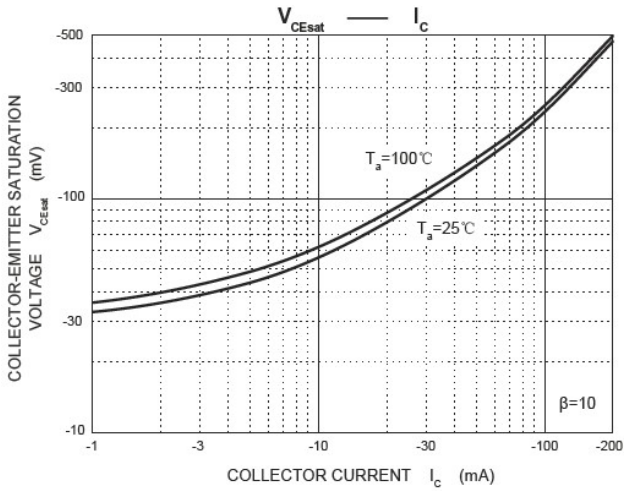
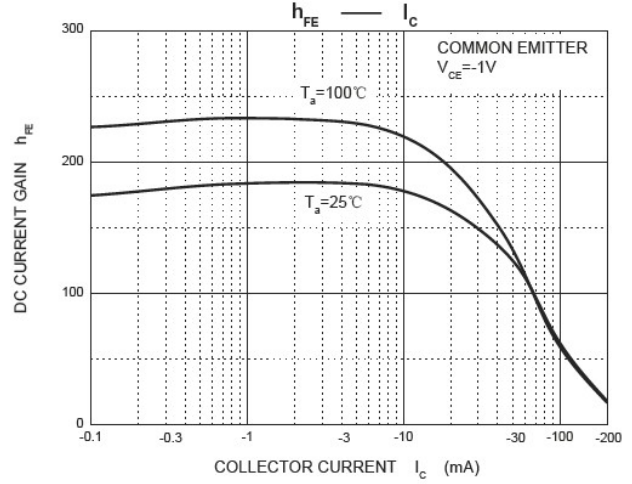
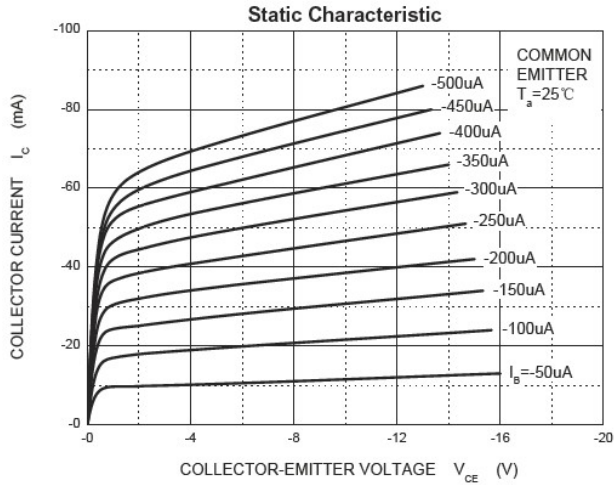
(Ratings at 25°C ambient temperature unless otherwise specified).

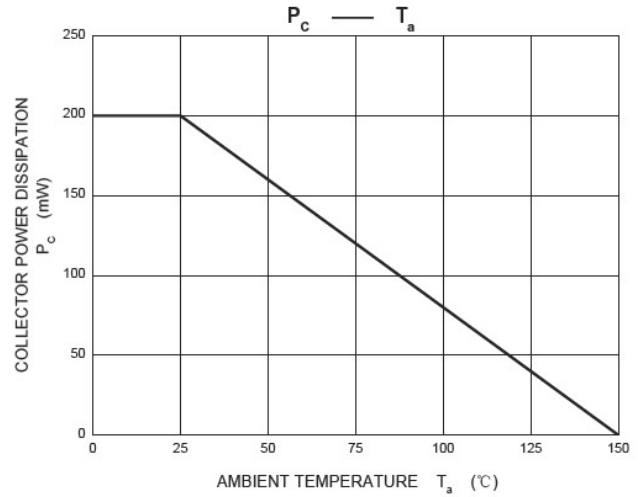
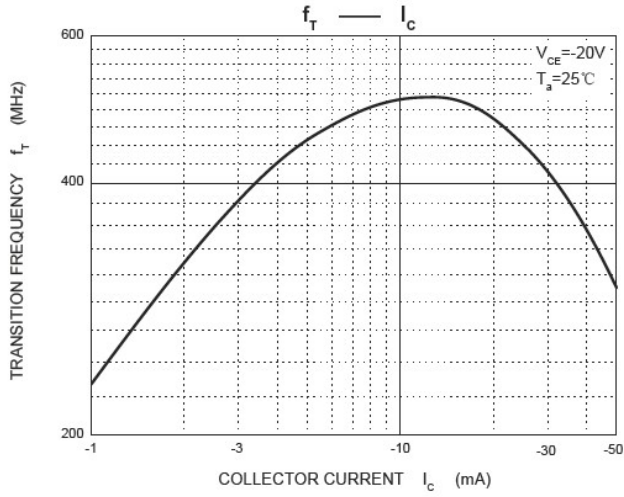
Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	V_{CBO}	$I_C = -10\mu A, I_E = 0$	-40		V
Collector-emitter breakdown voltage	V_{CEO}	$I_C = -1mA, I_B = 0$	-40		V
Emitter-base breakdown voltage	V_{EBO}	$I_E = -10\mu A, I_C = 0$	-5		V
Collector cut-off current	I_{CBO}	$V_{CB} = -40V, I_E = 0$		-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	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 $h_{FE(1)}$

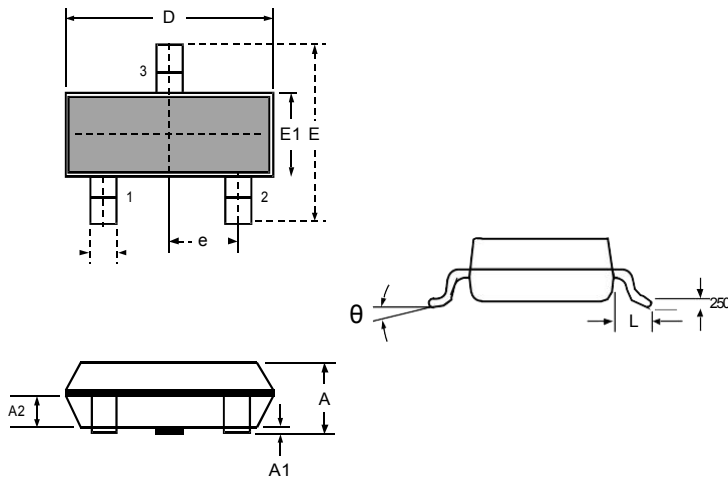
HFE	100-300	
RANK	L	H
RANGE	100-200	200-300

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°