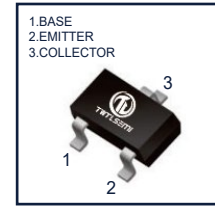
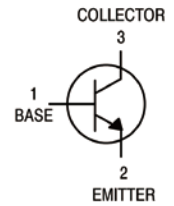


Features

- Complementary to MMBT3906T
- Small Package



SOT-523



Equivalent Circuit

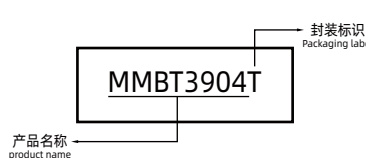
Absolute Maximum Ratings($T_A=25^{\circ}\text{C}$)

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	0.2	A
P_C	Collector Power Dissipation	150	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	833	$^{\circ}\text{C}/\text{W}$
T_J, T_{stg}	Operation Junction And Storage Temperature Range	$-55 \sim +150$	$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

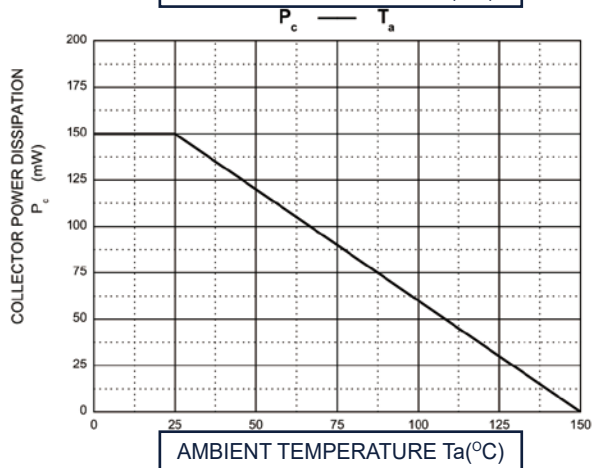
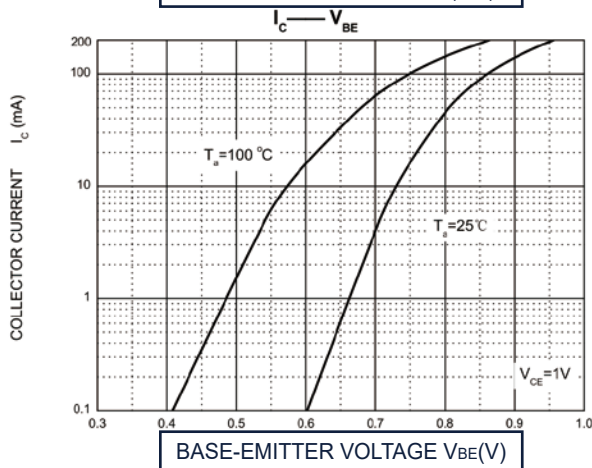
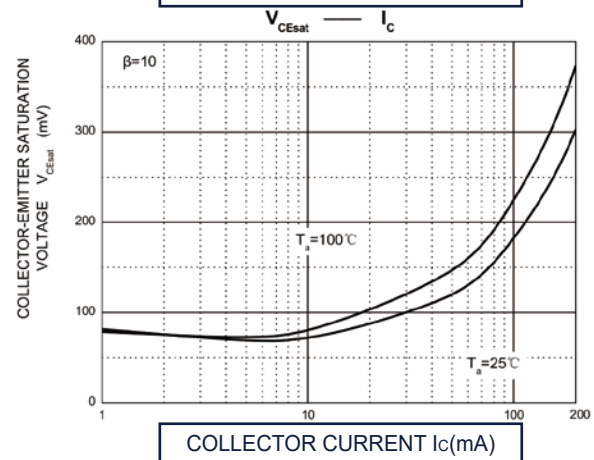
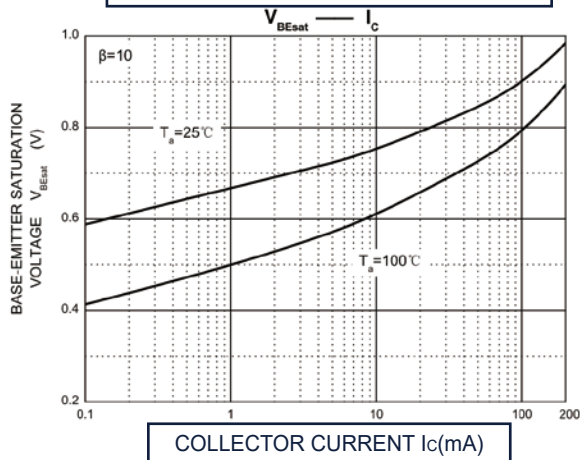
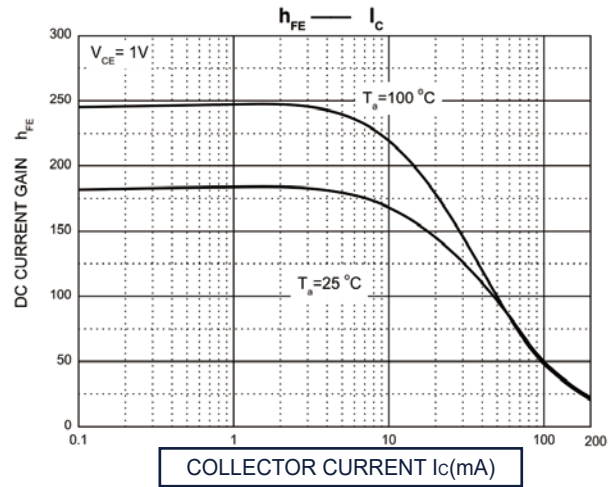
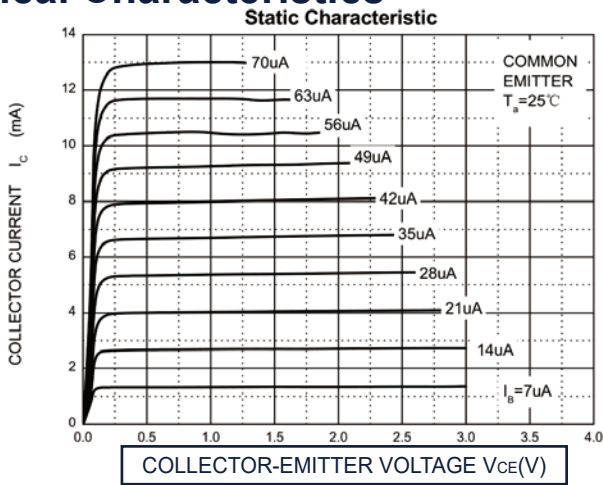
Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C=10\mu\text{A}, I_E=0$	60			V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=1\text{mA}, I_B=0$	40			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E=10\mu\text{A}, I_C=0$	6			V
I_{CEX}	Collector cut-off current	$V_{CE}=30\text{V}, V_{EB(off)}=3\text{V}$			50	nA
I_{EBO}	Emitter cut-off current	$V_{EB}=5\text{V}, I_C=0$			100	nA
$h_{FE(1)}$	DC current gain	$V_{CE}=1\text{V}, I_C=0.1\text{mA}$	40			
$h_{FE(2)}$		$V_{CE}=1\text{V}, I_C=1\text{mA}$	70			
$h_{FE(3)}$		$V_{CE}=1\text{V}, I_C=10\text{mA}$	100		300	
$h_{FE(4)}$		$V_{CE}=1\text{V}, I_C=50\text{mA}$	60			
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C=10\text{mA}, I_B=1\text{mA}$			0.2	V
		$I_C=50\text{mA}, I_B=5\text{mA}$			0.3	
$V_{BE(sat)}$	Base-emitter saturation voltage	$I_C=10\text{mA}, I_B=1\text{mA}$	0.65		0.85	V
		$I_C=50\text{mA}, I_B=5\text{mA}$			0.95	
f_T	Transition frequency	$V_{CE}=20\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	300			MHz
C_{ob}	Collector output capacitance	$V_{CB}=5\text{V}, I_E=0, f=1\text{MHz}$			4	pF
C_{ib}	Base input capacitance	$V_{EB}=0.5\text{V}, I_E=0, f=1\text{MHz}$			8	pF
t_d	Delay time	$V_{CC}=3\text{V}, V_{BE(off)}=-0.5\text{V}, I_C=10\text{mA}, I_{B1}=1\text{mA}$			35	ns
t_r	Rise time	$V_{CC}=3\text{V}, V_{BE(off)}=-0.5\text{V}, I_C=10\text{mA}, I_{B1}=1\text{mA}$			35	ns
t_s	Storage time	$V_{CC}=3\text{V}, I_C=10\text{mA}, I_{B1}=I_{B2}=1\text{mA}$			200	ns
t_f	Fall time	$V_{CC}=3\text{V}, I_C=10\text{mA}, I_{B1}=I_{B2}=1\text{mA}$			50	ns

Ordering information

Product ID	Pack	Naming rule	Marking	$h_{FE(1)}$	Qty(PCS)
MMBT3904T	SOT-523		1N	100-300	3000

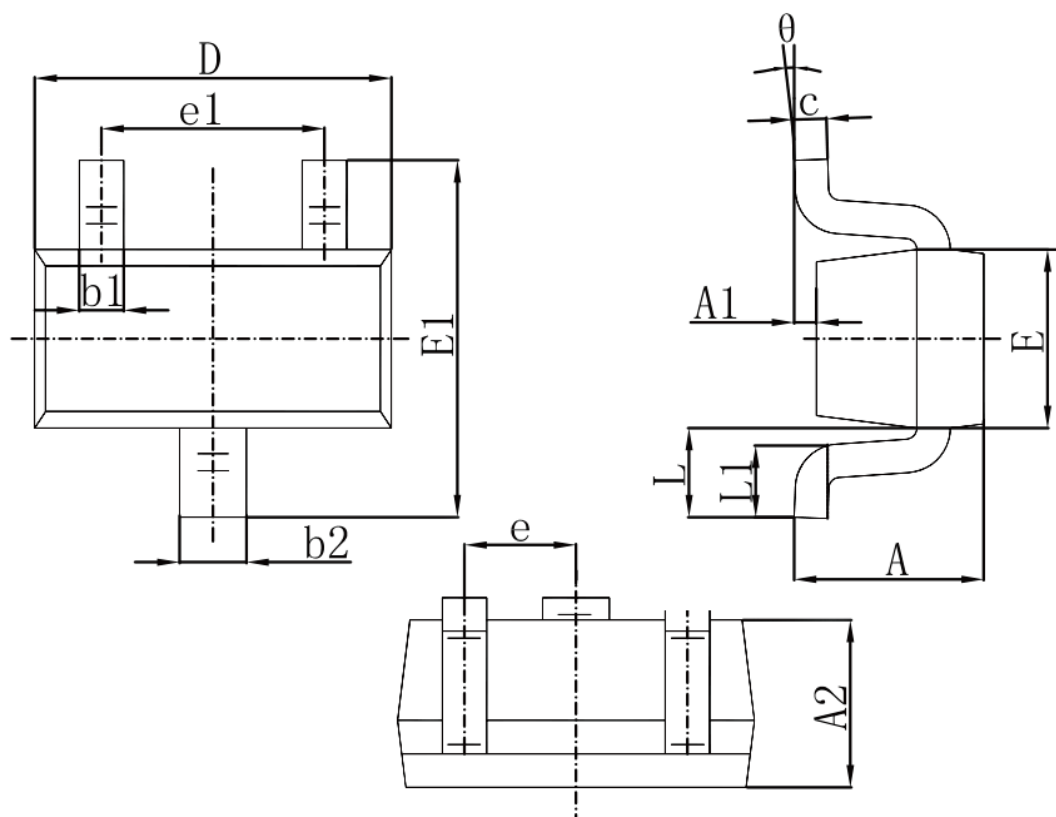


Typical Characteristics





SOT-523 Package Outline Dimensions



Symbol	Dimensions in Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°