

SOT-23 Plastic-Encapsulate Transistors

MMBT3906 TRANSISTOR (PNP)

FEATURES

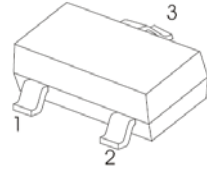
- As complementary type, the NPN transistor MMBT3904 is Recommended
- Epitaxial planar die construction

MARKING: 2A

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

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	-0.2	A
P_C	Collector Dissipation	0.2	W
$R_{\theta JA}$	Thermal resistance junction to ambient	625	$^{\circ}\text{C}/\text{W}$
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^{\circ}\text{C}$

SOT - 23



1. BASE
2. EMITTER
3. COLLECTOR

ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}$, $I_E=0$	-40		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}$, $I_B=0$	-40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-10\mu\text{A}$, $I_C=0$	-5		V
Collector cut-off current	I_{CBO}	$V_{CB}=-40\text{V}$, $I_E=0$		-100	nA
Collector cut-off current	I_{CEX}	$V_{CE}=-30\text{V}$, $V_{BE(off)}=-3\text{V}$		-50	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=-5\text{V}$, $I_C=0$		-100	nA
DC current gain	h_{FE1}	$V_{CE}=-1\text{V}$, $I_C=-10\text{mA}$	100	300	
	h_{FE2}	$V_{CE}=-1\text{V}$, $I_C=-50\text{mA}$	60		
	h_{FE3}	$V_{CE}=-1\text{V}$, $I_C=-100\text{mA}$	30		
Collector-emitter saturation voltage	$V_{CE(sat)1}$	$I_C=-50\text{mA}$, $I_B=-5\text{mA}$		-0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=-50\text{mA}$, $I_B=-5\text{mA}$		-0.95	V
Transition frequency	f_T	$V_{CE}=-20\text{V}$, $I_C=-10\text{mA}$, $f=100\text{MHz}$	300		MHz
Delay Time	t_d	$V_{CC}=-3\text{V}$, $V_{BE}=-0.5\text{V}$ $I_C=-10\text{mA}$, $I_{B1}=I_{B2}=-1\text{mA}$		35	nS
Rise Time	t_r			35	nS
Storage Time	t_s	$V_{CC}=-3\text{V}$, $I_C=-10\text{mA}$ $I_{B1}=I_{B2}=-1\text{mA}$		225	nS
Fall Time	t_f			75	nS

CLASSIFICATION OF $h_{FE(1)}$

HFE	100-300
-----	---------

Typical Characteristics

