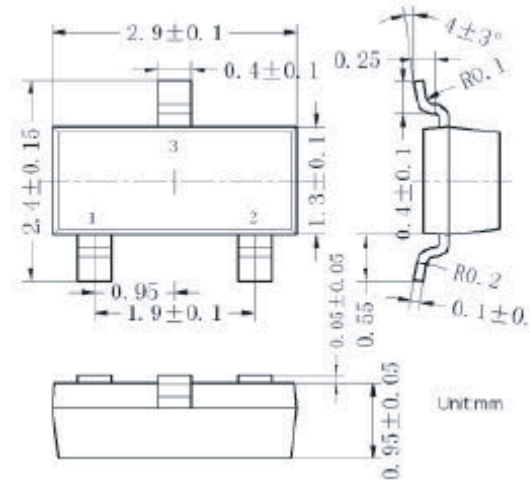


SOT-23

Specification Features:

- ◆ Complementary Type The NPN Transistor
MMBT3904 is Recommended
- ◆ Epitaxial Planar Die Construction
- ◆ P/N suffix V means AEC-Q101 qualified, e.g:MMBT3904V
- ◆ P/N suffix V means Halogen-free

Marking:1AM.



1.BASE 2.EMITTER 3.COLLECTOR

Absolute Maximum Ratings $T_A=25^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
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	200	mA
P_C	Collector Power Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	625	$^{\circ}\text{C}/\text{W}$
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^{\circ}\text{C}$

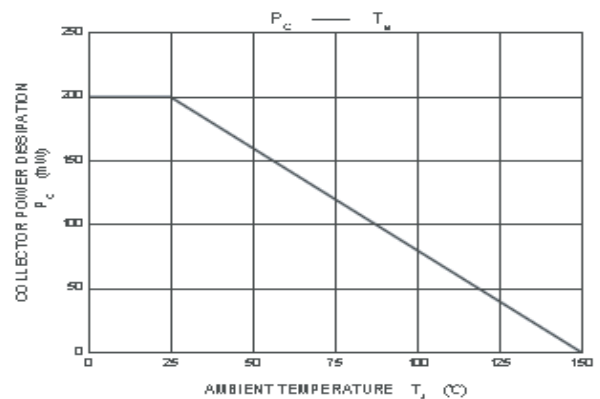
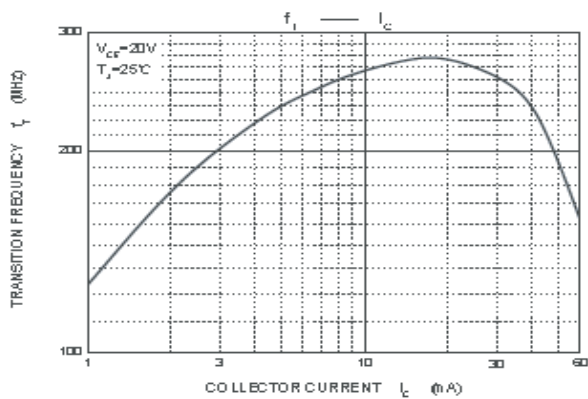
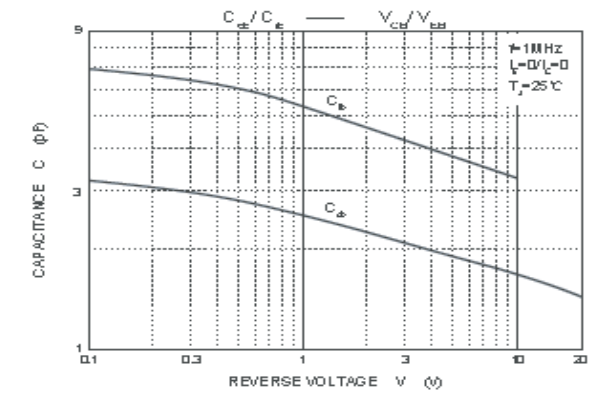
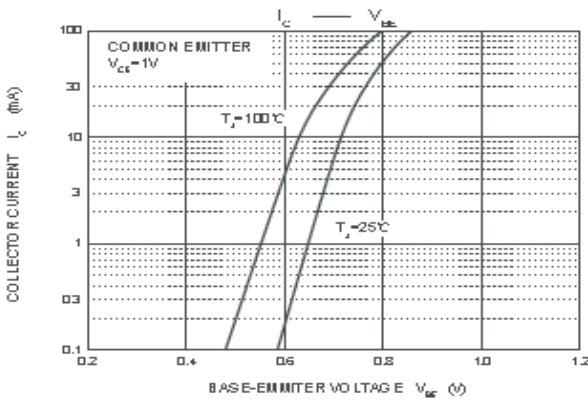
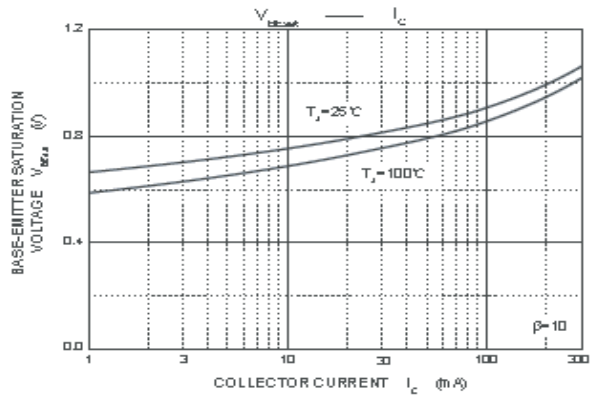
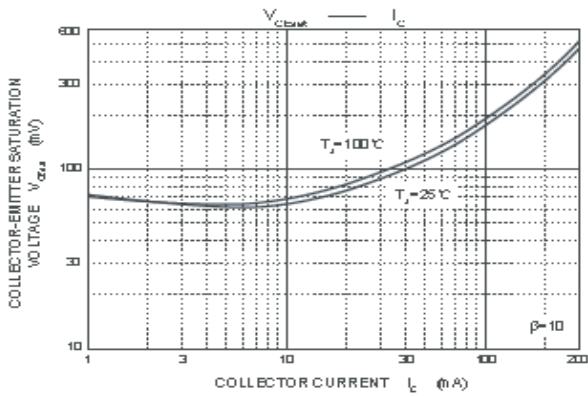
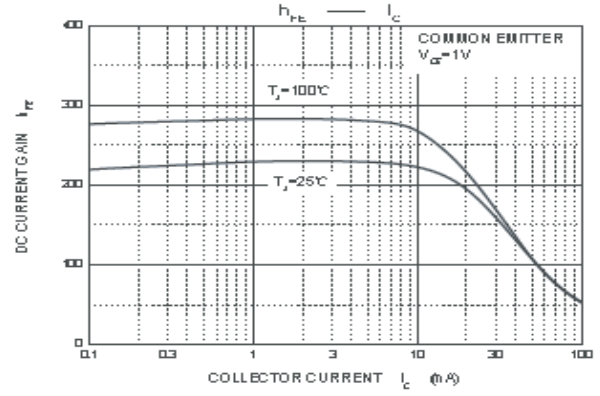
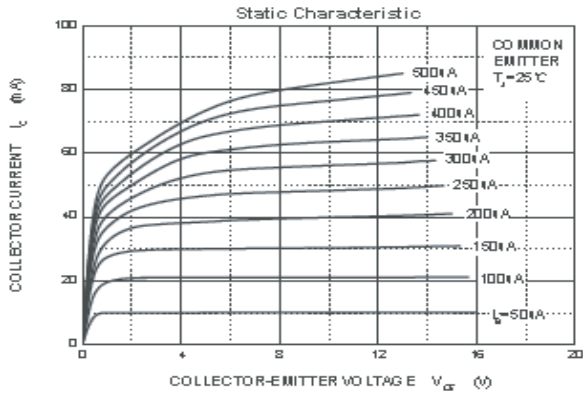
Electrical Characteristics $T_A=25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage at $I_C=10\text{mA}$, $I_E=0$	$V_{(BR)CBO}$	60			V
Collector-emitter breakdown voltage at $I_C=1\text{mA}$, $I_B=0$	$V_{(BR)CEO}$	40			V
Emitter-base breakdown voltage at $I_E=10\mu\text{A}$, $I_C=0$	$V_{(BR)EBO}$	6			V
Collector cut-off current at $V_{CE}=30\text{V}$, $V_{EB(off)}=3\text{V}$	I_{CEX}			50	nA
Collector cut-off current at $V_{CB}=60\text{V}$, $I_E=0$	I_{CBO}			100	nA
Emitter cut-off current at $V_{EB}=5\text{V}$, $I_C=0$	I_{EBO}			100	nA
DC current gain at $V_{CE}=1\text{V}$, $I_C=10\text{mA}$ $V_{CE}=1\text{V}$, $I_C=50\text{mA}$ $V_{CE}=1\text{V}$, $I_C=100\text{mA}$	$h_{FE(1)}$	100		400	
	$h_{FE(2)}$	60			
	$h_{FE(3)}$	30			
Collector-emitter saturation voltage at $I_C=50\text{mA}$, $I_B=5\text{mA}$	$V_{CE(sat)}$			0.3	V
base-emitter saturation voltage at $I_C=50\text{mA}$, $I_B=5\text{mA}$	$V_{BE(sat)}$			0.95	V
Transition frequency at $V_{CE}=20\text{V}$, $I_C=10\text{mA}$, $f=100\text{MHZ}$	f_T	300			MHZ
Delay time at $V_{CC}=3\text{V}$, $V_{BE(off)}=-0.5\text{V}$, $I_C=10\text{mA}$, $I_{B1}=1\text{mA}$	t_d			35	ns
Rise time at $V_{CC}=3\text{V}$, $V_{BE(off)}=-0.5\text{V}$, $I_C=10\text{mA}$, $I_{B1}=1\text{mA}$	t_r			35	ns
Storage time at $V_{CC}=3\text{V}$, $I_C=10\text{mA}$, $I_{B1}=I_{B2}=1\text{mA}$	t_s			200	ns
Fall time at $V_{CC}=3\text{V}$, $I_C=10\text{mA}$, $I_{B1}=I_{B2}=1\text{mA}$	t_f			50	ns

Classification Of $h_{FE(1)}$

RANK	O	Y	G
RANGE	100-200	200-300	300-400

RATING AND CHARACTERISTICS CURVES (MMBT3904)



PACKAGING OF DIODE

REEL PACK

PACKAGE	PACKING CODE	REEL (EA)	COMPONENT SPACE(mm)	TAPE SPACE (mm)	REEL DIA (mm)	CARTON SIZE (mm)	EA PER CARTON	GROSS WEIGHT(Kg)
SOT-23/-3L	-T	3,000	---	---	178	438*438*220	180,000	---

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