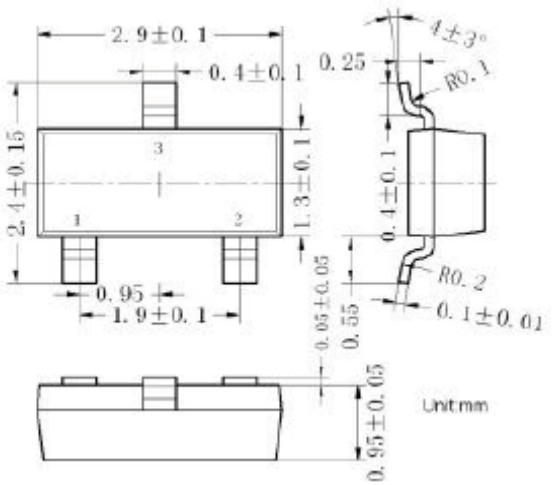
RECTRON SEMICONDUCTOR
TECHNICAL SPECIFICATION

MMBT3904

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
- ◆Halogen-free
- ◆Marking :1AM



1.BASE 2.EMITTER 3.COLLECTOR

Absolute Maximum Ratings T_A=25℃ 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	℃/W
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55~+150	℃

2020-03/01
REV:E

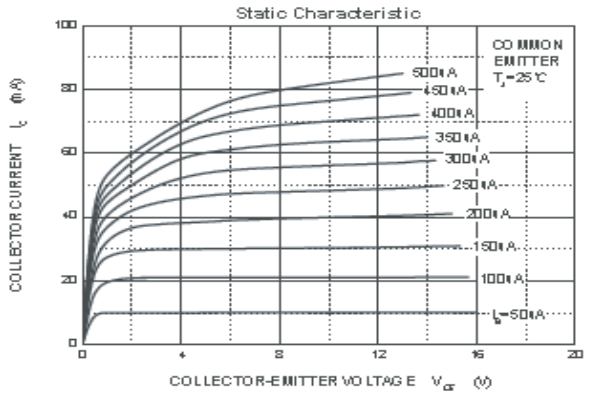
Electrical Characteristics T_A=25℃ unless otherwise specified

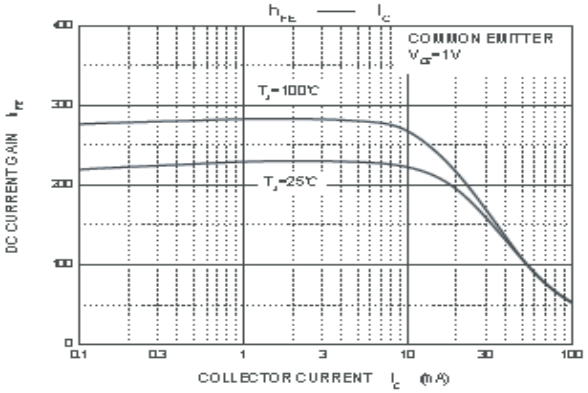
Parameter	Symbol	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage at I_C=10mA, I_E=0	$V_{(BR)\ CBO}$	60			V
Collector-emitter breakdown voltage at I_C=1mA, I_B=0	$V_{(BR)\ CEO}$	40			V
Emitter-base breakdown voltage at I_E=10uA, I_C=0	$V_{(BR)\ EBO}$	6			V
Collector cut-off current at V_{CE}=30V,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

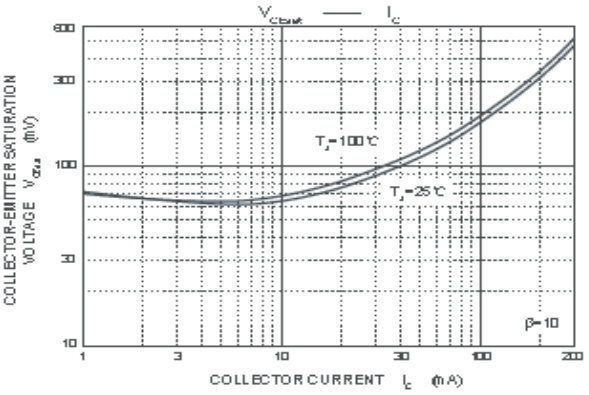
Classification Of $h_{FE(1)}$

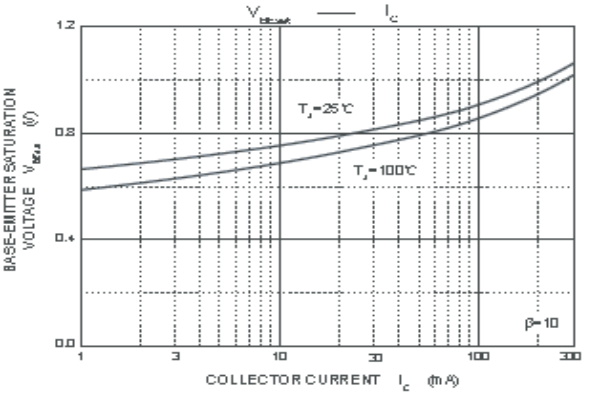
RANK	O	Y	G
RANGE	100-200	200-300	300-400

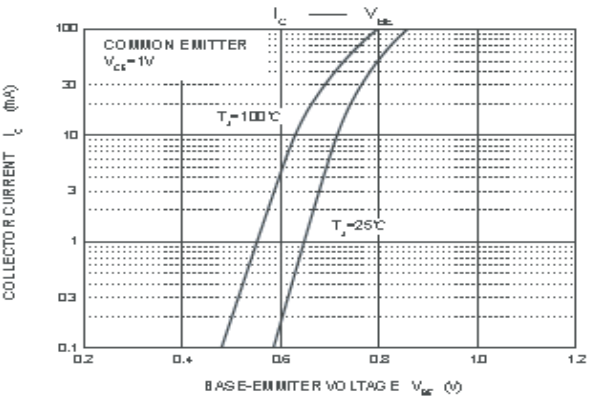
RATING AND CHARACTERISTICS CURVES (MMBT3904)

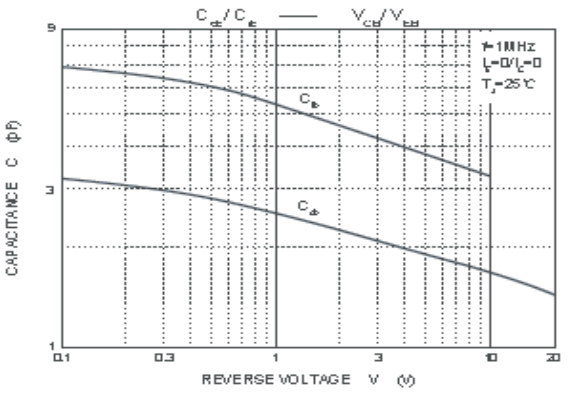


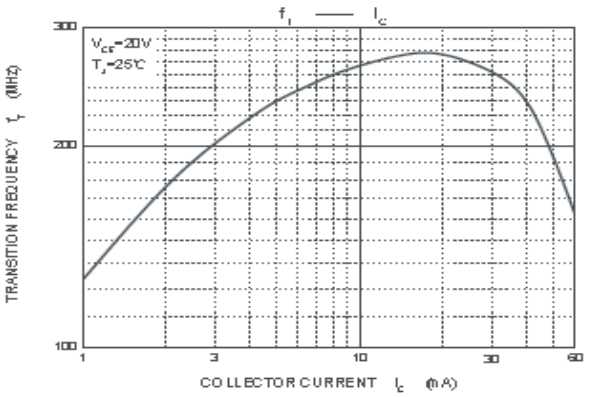


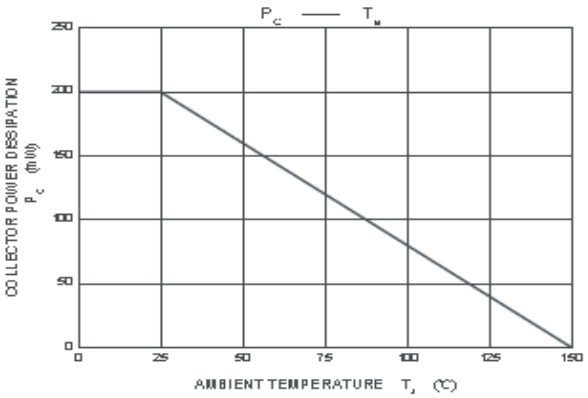












PACKAGING OF DIODE

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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