MMBT3904 (NPN)

FEATURES

As complementary type the PNP transistor MMBT3906 is recommended

Epitaxial planar die construction

MARKING: 1AM

1. BASE
2. EMITTER
3. COLLECTO

SOT-23

MAXIMUM RATINGS (TA=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current -Continuous	I_C	200	A
Collector Power Dissipation	I_C	200	W
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	625	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	Tstg	-55 to +150	℃

ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

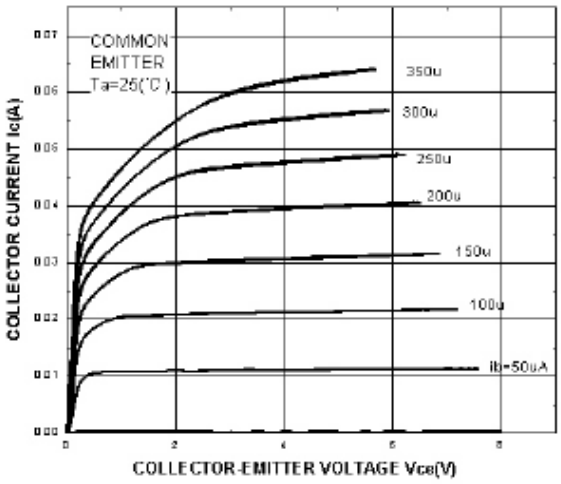
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	V_{CBO}	I_C= 10μA, I_E=0	60		v
Collector-emitter breakdown voltage	V_{CEO}	I_C= 1mA, I_B=0	40		v
Emitter-base breakdown voltage	V_{EBO}	I_E=10μA, I_C=0	6		v
Collector cut-off current	I_{CBO}	V_{CB}=60V, I_E=0		0.1	uA
Collector cut-off current	I_{CEX}	V_{CE}=30V,$V_{BE(off)}$=3V		50	uA
Emitter cut-off current	I_{EBO}	V_{EB}=5V, I_C=0		0.1	uA
DC current gain	$h_{FE(1)}$	V_{CE}=1V, I_C=10mA	100	400	
DC current gain	$h_{FE(2)}$	V_{CE}=1V, I_C= 100mA	30		
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=50mA, I_B= 5mA		0.3	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		MH_Z
Delay Time	td	V_{CC}=3V,V_{BE}=-0.5V		35	nS
Rise Time	tr	I_C=10mA, I_{B1}=-IB2=1.0mA		35	nS
Storage Time	ts	V_{CC}=3V,I_C=10mA,		200	nS
Fall Time	tf	I_{B1}=-I_{B2}=1mA		50	nS

CLASSIFICATION OF

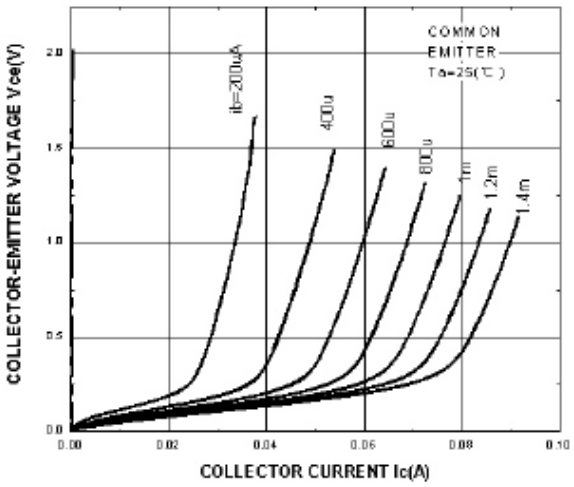
Rank	O	Y	G
Range	120-200	200-300	300-400

MMBT3904 Typical Characteristics

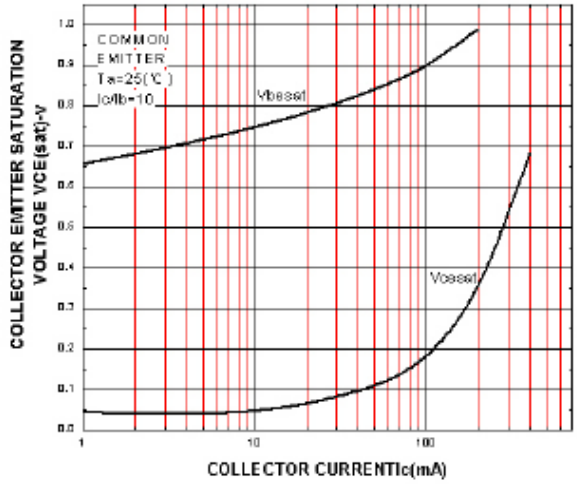
Ic-Vce



Vce-Ic



Vcesat-Ic
Vbesat-Ic



hFE-Ic