

**FEATURES**

As complementary type the PNP transistor MMBT3906 is recommended  
Epitaxial planar die construction

**MARKING: 1AM**

**MAXIMUM RATINGS** (TA=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CBO</sub>	60	V
Collector-Emitter Voltage	V <sub>CEO</sub>	40	V
Emitter-Base Voltage	V <sub>EBO</sub>	6	V
Collector Current -Continuous	I <sub>C</sub>	200	mA
Collector Power Dissipation	I <sub>C</sub>	200	mW
Thermal Resistance Junction to Ambient	R <sub>JA</sub>	625	°C/W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C

**MMBT3904 (NPN)**


**ELECTRICAL CHARACTERISTICS** (T<sub>amb</sub>=25°C unless otherwise specified)

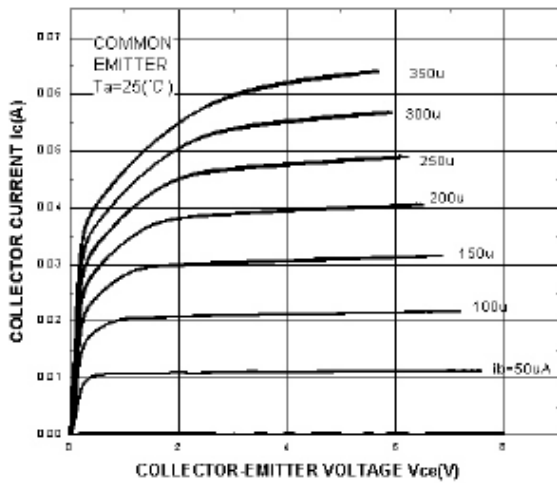
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	V <sub>CBO</sub>	I <sub>C</sub> = 10μA, I <sub>E</sub> =0	60		v
Collector-emitter breakdown voltage	V <sub>CEO</sub>	I <sub>C</sub> = 1mA, I <sub>B</sub> =0	40		v
Emitter-base breakdown voltage	V <sub>EBO</sub>	I <sub>E</sub> =10μA, I <sub>C</sub> =0	6		v
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =60V, I <sub>E</sub> =0		0.1	uA
Collector cut-off current	I <sub>CEX</sub>	V <sub>CE</sub> =30V, V <sub>BE(off)</sub> =3V		50	uA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0		0.1	uA
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> =10mA	100	400	
DC current gain	h <sub>FE(2)</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> = 100mA	30		
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =50mA, I <sub>B</sub> = 5mA		0.3	v
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 50mA, I <sub>B</sub> = 5mA		0.95	v
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =20V, I <sub>C</sub> =10mA, f=100MHz	300		MHz
Delay Time	td	V <sub>CC</sub> =3V, V <sub>BE</sub> =-0.5V		35	nS
Rise Time	tr	I <sub>C</sub> =10mA, I <sub>B1</sub> =-I <sub>B2</sub> =1.0mA		35	nS
Storage Time	ts	V <sub>CC</sub> =3V, I <sub>C</sub> =10mA,		200	nS
Fall Time	tf	I <sub>B1</sub> =-I <sub>B2</sub> =1mA		50	nS

**CLASSIFICATION OF**

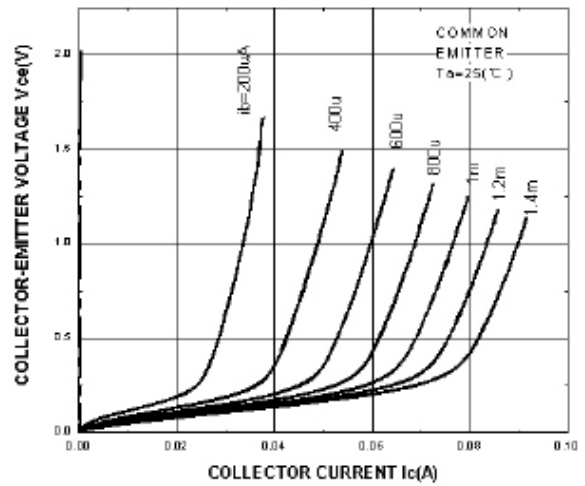
Rank	O	Y	G
Range	120-200	200-300	300-400

MMBT3904 Typical Characteristics

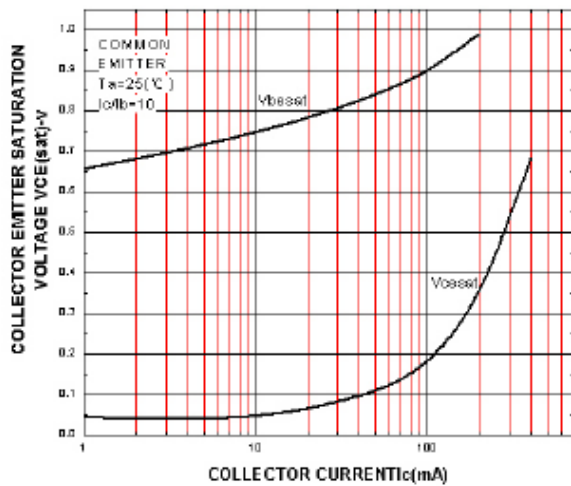
Ic-Vce



Vce-Ic



Vcesat-Ic  
Vbesat-Ic



hFE-Ic

