

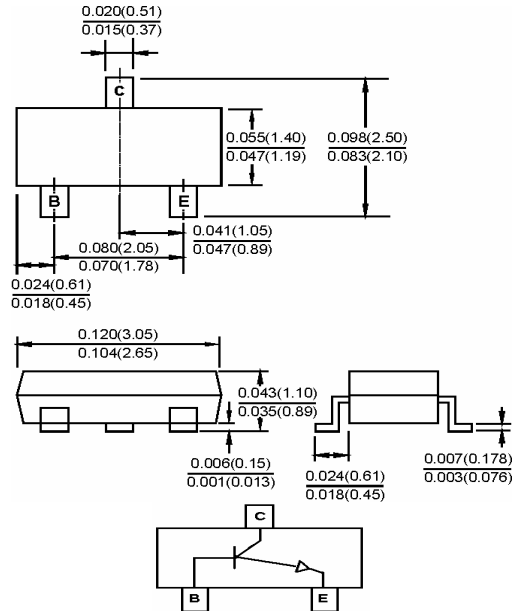


**SOT-23**



**Features**

- ◇ As complementary type, the PNP transistor MMBT3906 is recommended
- ◇ Epitaxial planar die construction
- ◇ Marking: 1AM



Dimensions in inches and (millimeters)

**Maximum Ratings  $T_A=25^\circ\text{C}$  unless otherwise specified**

Type Number	Symbol	Value	Units
Collector-base voltage	$V_{CBO}$	60	V
Collector-emitter voltage	$V_{CEO}$	40	V
Emitter-base voltage	$V_{EBO}$	6	V
Collector current - continuous	$I_C$	0.2	A
Collector Power dissipation	$P_C$	0.2	W

**ELECTRICAL CHARACTERISTICS**

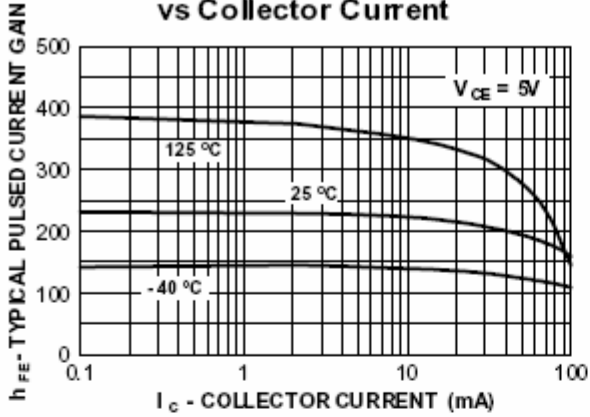
Parameter	Symbol	MIN	MAX	Units	
Collector-base breakdown voltage $I_C=10\mu\text{A}, I_E=0$	$V_{(BR)CBO}$	60		V	
Collector-emitter breakdown voltage $I_C=1\text{mA}, I_B=0$	$V_{(BR)CEO}$	40		V	
Emitter-base breakdown voltage $I_E=10\mu\text{A}, I_C=0$	$V_{BE(ON)}$	6		V	
Collector cut-off current $V_{CB}=60\text{V}, I_E=0$	$I_{CBO}$		0.1	$\mu\text{A}$	
Collector cut-off current $V_{CE}=30\text{V}, V_{BE(off)}=3\text{V}$	$I_{CEO}$		50	nA	
Emitter cut-off current $V_{EB}=5\text{V}, I_C=0$	$I_{EEO}$		0.1	$\mu\text{A}$	
DC current gain	$V_{CE}=1\text{V}, I_C=10\text{mA}$	$h_{FE(1)}$	100		
	$V_{CE}=1\text{V}, I_C=50\text{mA}$	$h_{FE(2)}$	60		
	$V_{CE}=1\text{V}, I_C=100\text{mA}$	$h_{FE(3)}$	30		
	$I_C=50\text{mA}, I_B=5\text{mA}$	$V_{CE(sat)}$		0.3	V
	$I_C=50\text{mA}, I_B=5\text{mA}$	$V_{BE(sat)}$		0.95	V
Transition frequency $V_{CE}=20\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	$f_T$	250		MHz	
Delay time $V_{CC}=3\text{V}, V_{BE}=0.5\text{V}, I_C=10\text{mA}$	$t_d$		35	nS	
Rise time $I_{B1}=I_{B2}=1.0\text{mA}$	$t_r$		35	nS	
Storage time $V_{CC}=3\text{V}, I_C=10\text{mA}$	$t_s$		200	nS	
Fall time $I_{B1}=I_{B2}=1.0\text{mA}$	$t_f$		50	nS	
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150		$^\circ\text{C}$	

**CLASSIFICATION OF  $h_{FE1}$**

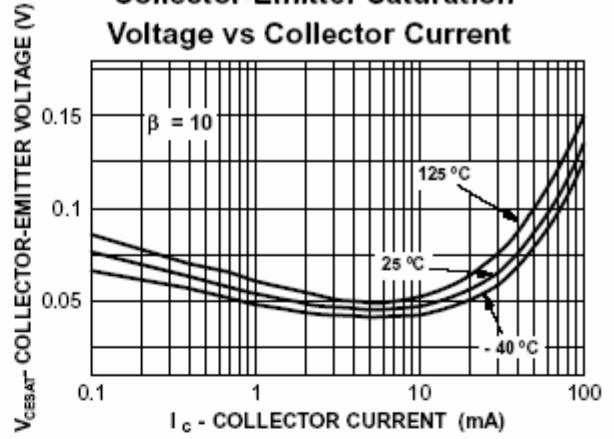
Rank	O	Y	G
Range	100-200	200-300	300-400

RATINGS AND CHARACTERISTIC CURVES (MMBT3904)

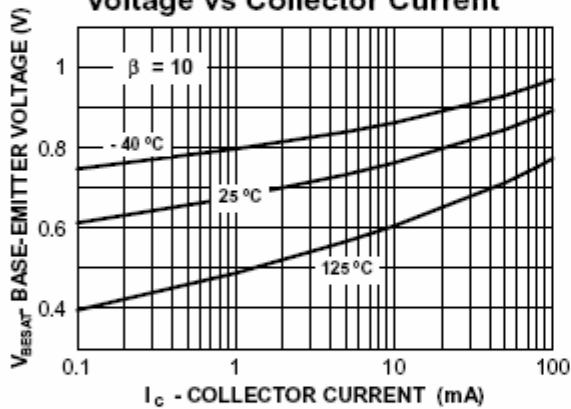
**Typical Pulsed Current Gain vs Collector Current**



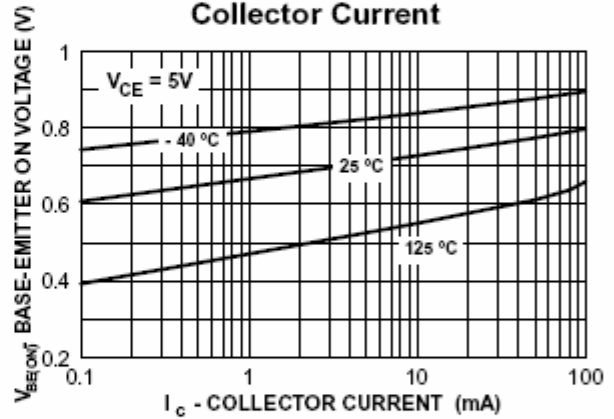
**Collector-Emitter Saturation Voltage vs Collector Current**



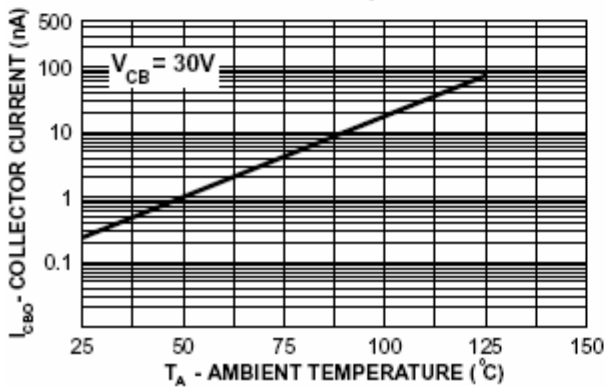
**Base-Emitter Saturation Voltage vs Collector Current**



**Base-Emitter ON Voltage vs Collector Current**



**Collector-Cutoff Current vs Ambient Temperature**



**Capacitance vs Reverse Bias Voltage**

