



# MMBTSA1235

## PNP Silicon Epitaxial Planar Transistor

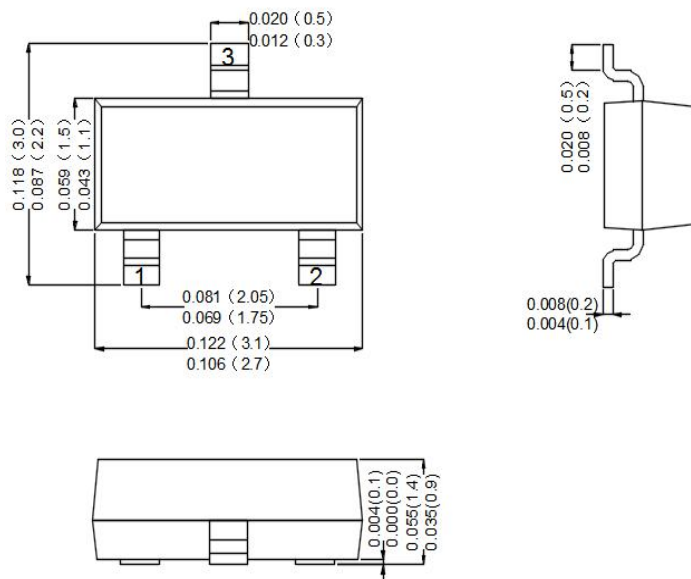
### Features

- For low frequency amplification applications
- The transistor is subdivided into two groups, E and F, according to its DC current gain.

### Mechanical Data

- Case:Molded Plastic,SOT-23
- Epoxy:UL 94V-0 rate flame retardant
- Terminals:Plated Leads Solderable perMIL-STD-750,Method-2026.
- Marking: CLASSIFICATION OF  $h_{FE(1)}$
- Mounting Position : Any.
- Equivalent Circuit:

### SOT-23



Dimensions in inches and (millimeters)

### Maximum Ratings Maximum Ratings (Rating at 25°C ambient temperature unless otherwise specified.)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	60	V
Collector Emitter Voltage	$-V_{CEO}$	50	V
Emitter Base Voltage	$-V_{EBO}$	6	V
Collector Current	$-I_C$	200	mA
Power Dissipation	$P_{tot}$	200	mW
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_s$	- 55 to + 150	°C



**Electrical Characteristics** (Rating at 25°C ambient temperature unless otherwise specified.)

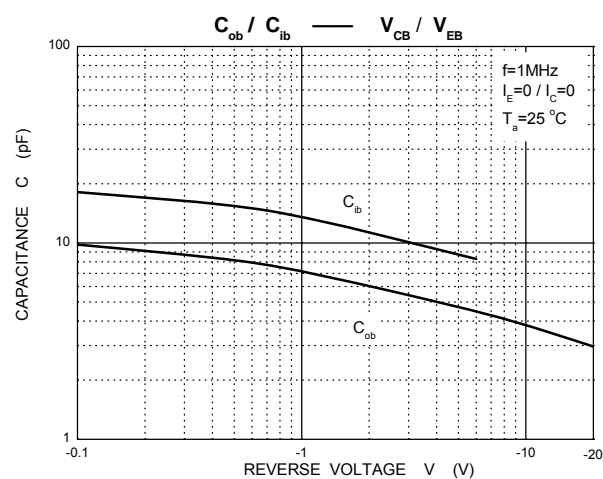
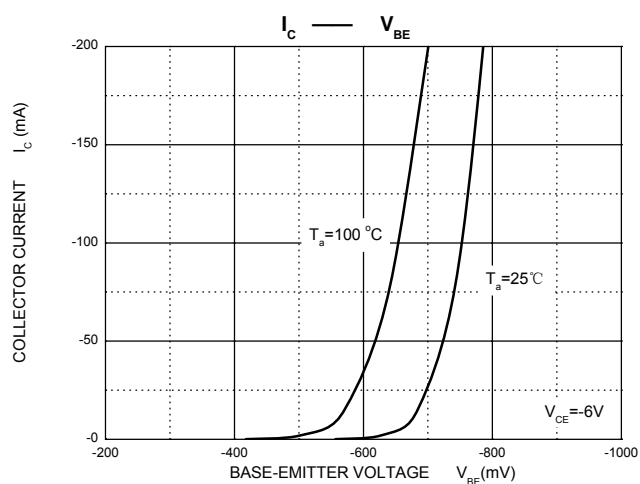
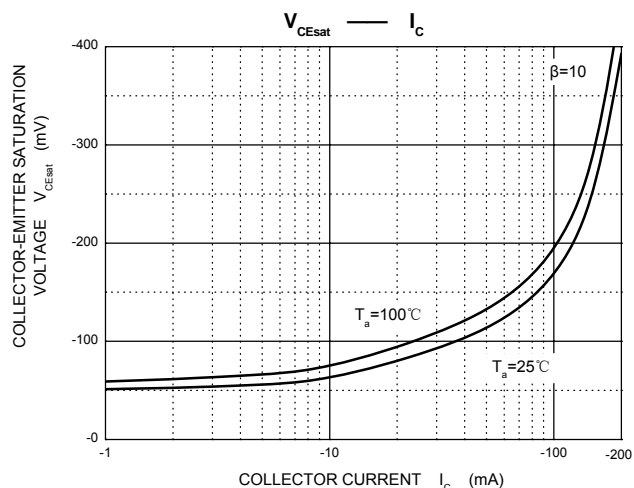
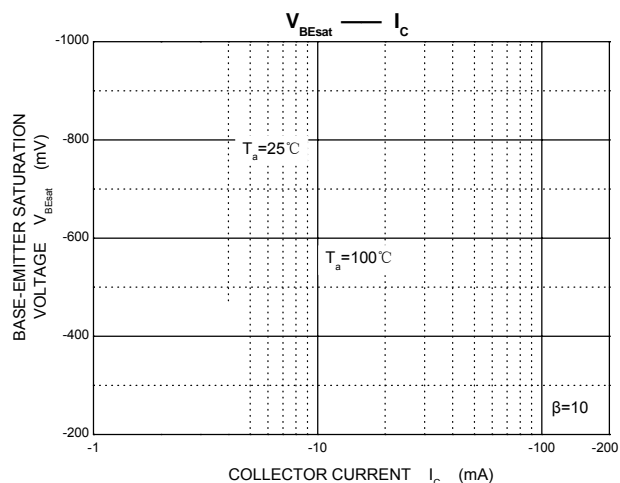
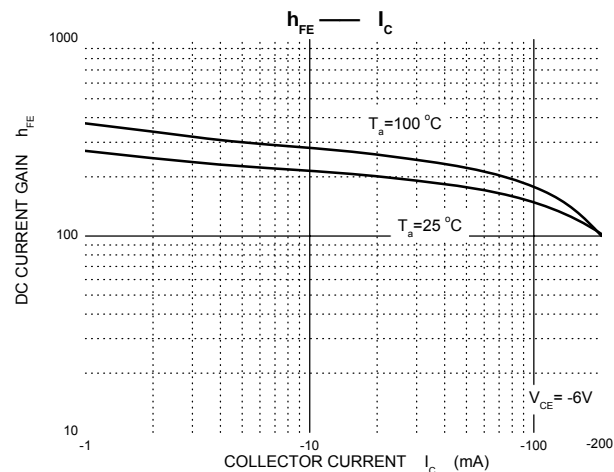
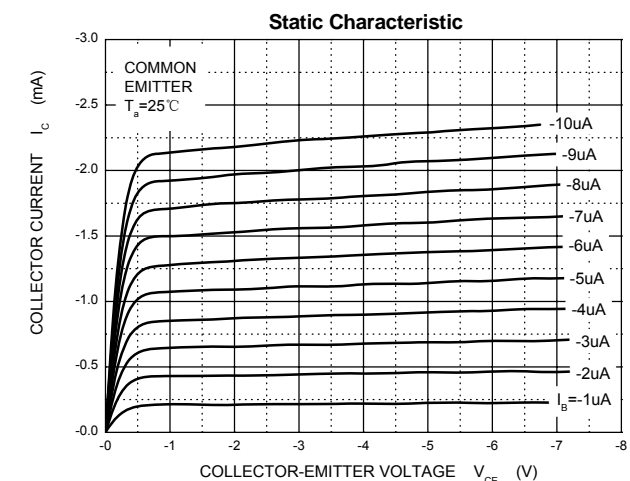
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-100\mu A, I_E=0$	-60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-0.1mA, I_B=0$	-50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-100\mu A, I_C=0$	-6			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=-60V, I_E=0$			-100	nA
Emitter cut-off current	$I_{EBO}$	$V_{EB}=-6V, I_C=0$			-100	nA
DC current gain	$h_{FE(1)}$	$V_{CE}=-6V, I_C=-1mA$	150		500	
	$h_{FE(2)}$	$V_{CE}=-6V, I_C=-0.1mA$	90			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-100mA, I_B=-10mA$			-0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=-100mA, I_B=-10mA$			-1	V
Transition frequency	$f_T$	$V_{CE}=-6V, I_C=-10mA$		200		MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=-6V, I_E=0, f=1MHz$		4		pF

### CLASSIFICATION OF $h_{FE(1)}$

RANK	E	F
RANGE	150–300	250–500
MARKING	ME	MF



### Rating And Characteristic Curves





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