



# MMBTSA1505

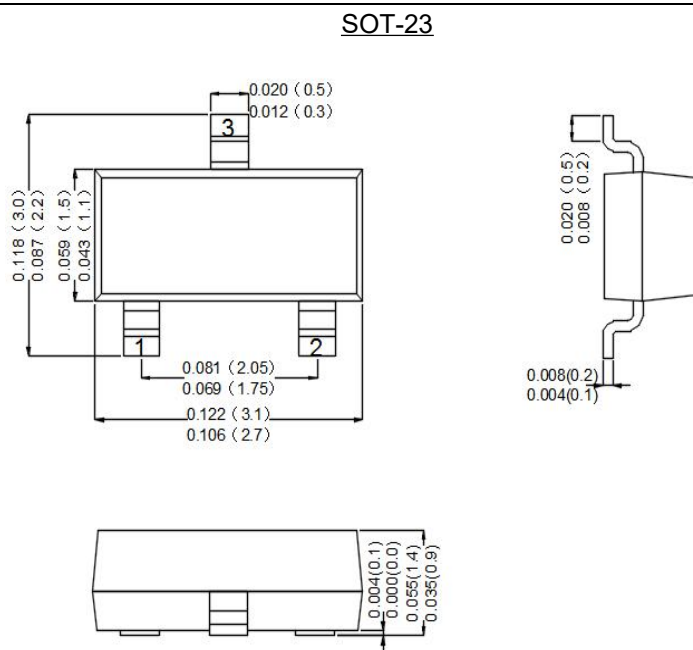
## PNP Silicon Epitaxial Planar Transistor

### Features

- For switching and general purpose applications.
- The transistor is subdivided into three groups O, Y and GR, according to its DC current gain.
- Excellent  $h_{FE}$  linearity:  $h_{FE}=25(\text{min})$  at  $V_{CE}=-6V$ ,  $I_C=-400\text{mA}$

### Mechanical Data

- Case: Molded Plastic, SOT-23
- Epoxy: UL 94V-0 rate flame retardant
- Terminals: Plated Leads Solderable per MIL-STD-750, Method-2026.
- Marking: marked on body
- Mounting Position : Any.
- Equivalent Circuit:



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	$-V_{CBO}$	35	V
Collector Emitter Voltage	$-V_{CEO}$	30	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	500	mA
Base Current	$-I_B$	50	mA
Power Dissipation	$P_{tot}$	200	mW
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_S$	-55 to +150	°C



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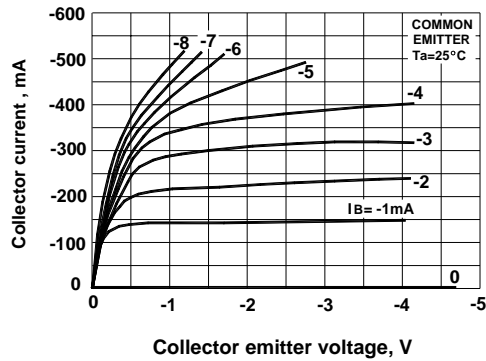
**Electrical Characteristics** (Rating at 25°C ambient temperature unless otherwise specified.)

Parameter		Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at -V <sub>CE</sub> =1V, -I <sub>C</sub> =100mA						
Current Gain Group	O	h <sub>FE</sub>	70	-	140	-
	Y	h <sub>FE</sub>	120	-	240	-
	G	h <sub>FE</sub>	200	-	400	-
at -V <sub>CE</sub> =6V, -I <sub>C</sub> =400mA	O	h <sub>FE</sub>	25	-	-	-
	Y	h <sub>FE</sub>	40	-	-	-
Collector Cutoff Current at -V <sub>CB</sub> =35V		-I <sub>CBO</sub>	-	-	0.1	μA
Emitter Cutoff Current at -V <sub>EB</sub> =5V		-I <sub>EBO</sub>	-	-	0.1	μA
Collector Saturation Voltage at -I <sub>C</sub> =100mA, -I <sub>B</sub> =10mA		-V <sub>CE(sat)</sub>	-	-	0.25	V
Base Emitter Voltage at -V <sub>CE</sub> =1V, -I <sub>C</sub> =100mA		-V <sub>BE</sub>	-	-	1	V
Transition Frequency at -V <sub>CE</sub> =6V, -I <sub>C</sub> =20mA		f <sub>T</sub>	-	200	-	MHz
Collector Output Capacitance at -V <sub>CB</sub> =6V, f=1MHz		C <sub>ob</sub>	-	13	-	pF

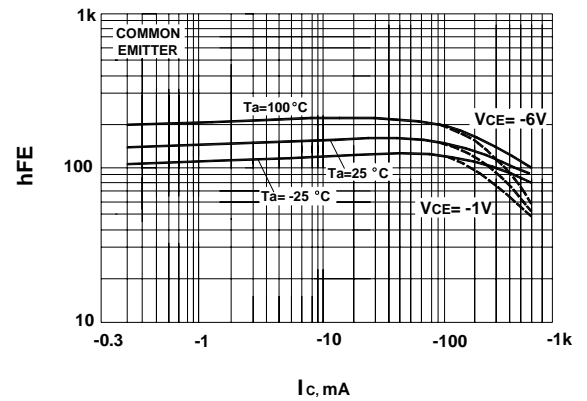


### Rating And Characteristic Curves

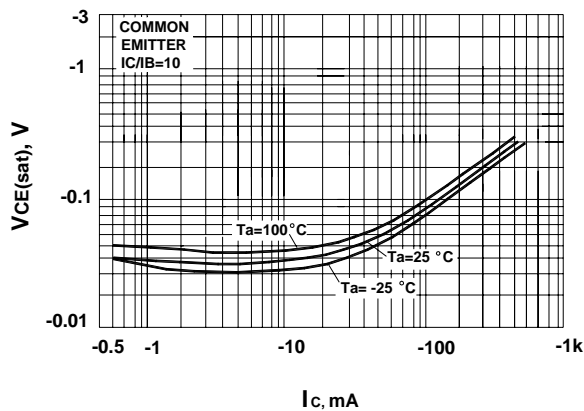
$I_C - V_{CE}$  (LOW VOLTAGE REGION)



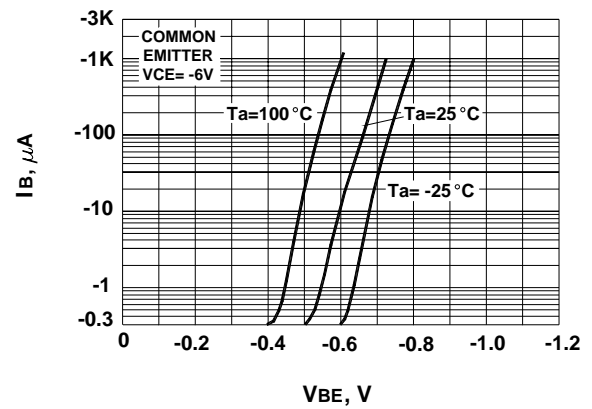
$h_{FE} - I_C$



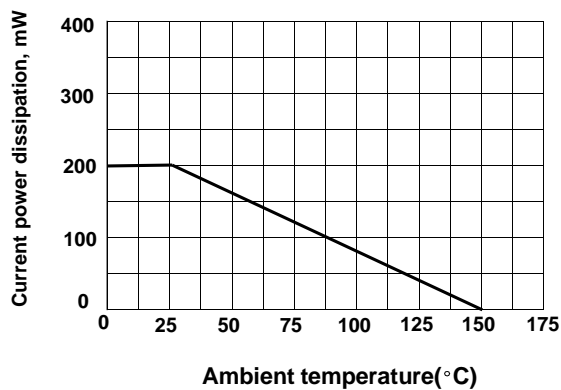
$V_{CE(sat)} - I_C$



$I_B - V_{BE}$



$P_c - T_a$





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