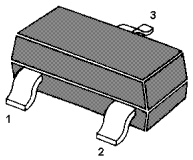
MMBT8105

PNP Silicon Epitaxial Planar Transistor

for medium power amplification and switching



1. Base 2. Emitter 3. Collector
SOT-23 Plastic Package

Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	80	V
Collector Emitter Voltage	$-V_{CEO}$	60	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	1	A
Peak Collector Current	$-I_{CM}$	2	A
Power Dissipation	P_{tot}	600	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	- 55 to + 150	°C

Characteristics at T_a = 25 °C

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $-V_{CE}$ = 5 V, $-I_C$ = 1 mA at $-V_{CE}$ = 5 V, $-I_C$ = 500 mA at $-V_{CE}$ = 5 V, $-I_C$ = 1 A at $-V_{CE}$ = 5 V, $-I_C$ = 2 A	 h_{FE} h_{FE} h_{FE} h_{FE}	 100 100 80 30	 - 300 - -	 - - - -
Collector Base Cutoff Current at $-V_{CB}$ = 60 V	$-I_{CBO}$	-	100	nA
Collector Emitter Cutoff Current at $-V_{CE}$ = 60 V	$-I_{CES}$	-	100	nA
Emitter Base Cutoff Current at $-V_{EB}$ = 4 V	$-I_{EBO}$	-	100	nA
Collector Base Breakdown Voltage at $-I_C$ = 100 µA	$-V_{(BR)CBO}$	80	-	V
Collector Emitter Breakdown Voltage at $-I_C$ = 10 mA	$-V_{(BR)CEO}$	60	-	V
Emitter Base Breakdown Voltage at $-I_E$ = 100 µA	$-V_{(BR)EBO}$	5	-	V
Collector Emitter Saturation Voltage at $-I_C$ = 500 mA, $-I_B$ = 50 mA at $-I_C$ = 1 A, $-I_B$ = 100 mA	$-V_{CE(sat)}$	 - -	 0.3 0.6	V
Base Emitter Saturation Voltage at $-I_C$ = 1 A, $-I_B$ = 100 mA	$-V_{BE(sat)}$	-	1.2	V
Base Emitter On Voltage at $-V_{CE}$ = 5 V, $-I_C$ = 1 A	$-V_{BE(on)}$	-	1	V
Transition Frequency at $-V_{CE}$ = 10 V, $-I_C$ = 50 mA, f = 100 MHz	f_T	80	-	MHz
Collector Output Capacitance at $-V_{CB}$ = 10 V, f = 1 MHz	C_{ob}	-	20	pF

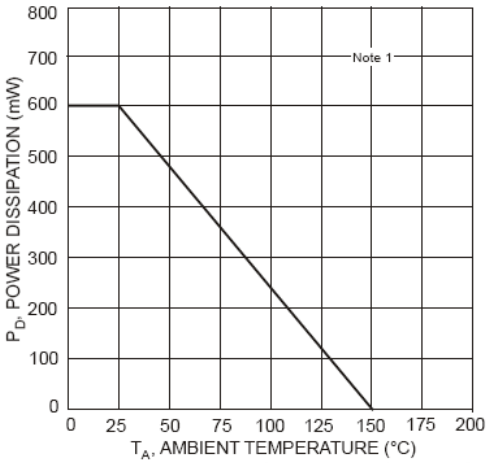


Fig. 1, Max Power Dissipation vs. Ambient Temperature

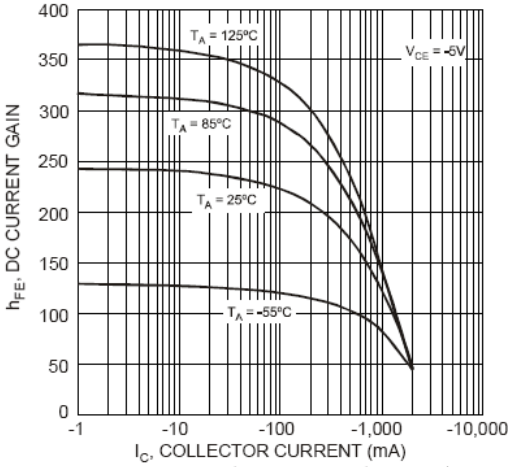


Fig. 2, DC Current Gain vs. Collector Current

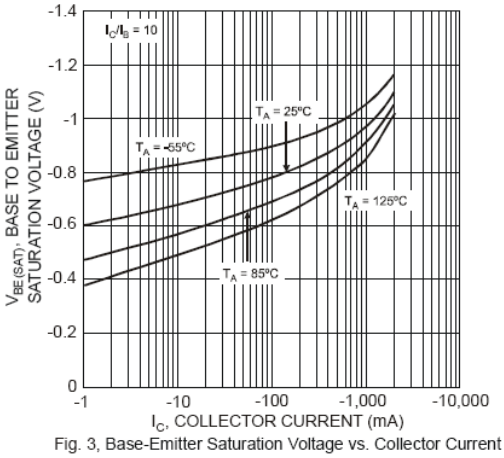


Fig. 3, Base-Emitter Saturation Voltage vs. Collector Current

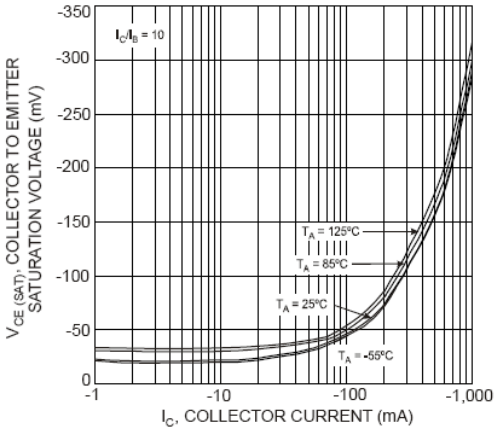


Fig. 4, Collector-Emitter Saturation Voltage vs. Collector Current

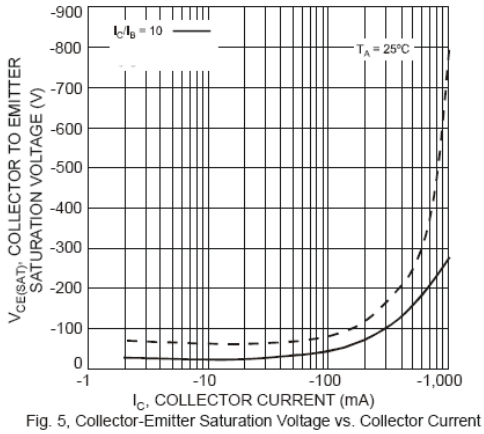


Fig. 5, Collector-Emitter Saturation Voltage vs. Collector Current

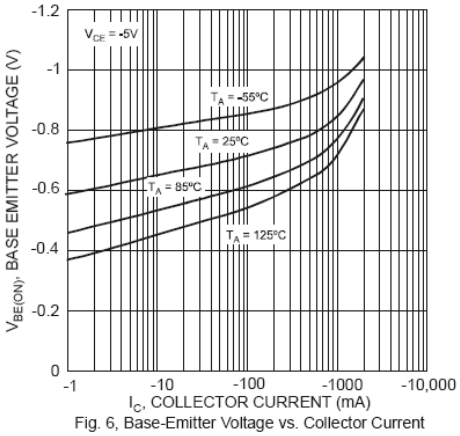


Fig. 6, Base-Emitter Voltage vs. Collector Current