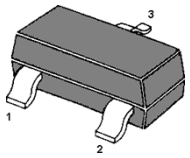
MMBT8050 NPN Silicon Epitaxial Planar Transistor

for switching and amplifier applications.
Especially suitable for AF-driver stages
and low power output stages.

The transistor is subdivided into two groups
C and D according to its DC current gain.



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

FEATURES

Complimentary to MMBT8550

Collector Current: I_C=2.0A

MARKING

MMBT8050C:C9D

MMBT8050D:D9D

Absolute Maximum Ratings (T_a = 25 °C)

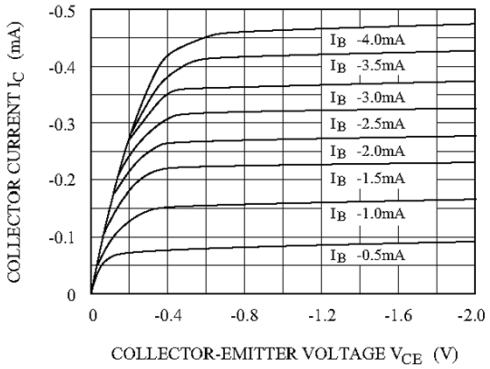
Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	40	V
Collector Emitter Voltage	V_{CEO}	25	V
Emitter Base Voltage	V_{EBO}	6	V
Collector Current	I_C	2	A
Power Dissipation	P_{tot}	350	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_S	- 55 to + 150	°C

Characteristics at T_a = 25 °C

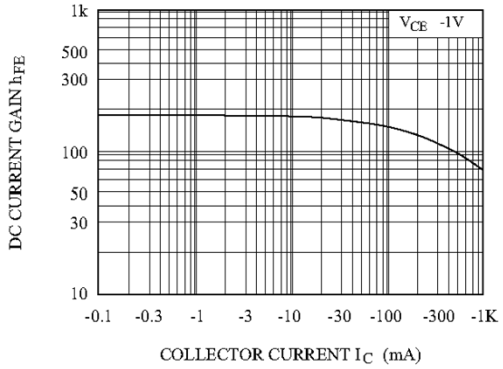
Parameter		Symbol	Min.	Max.	Unit
DC Current Gain					
at V_{CE} = 1 V, I_C = 5 mA		h_{FE}	45	-	-
at V_{CE} = 1 V, I_C = 100 mA	MMBT8050C	h_{FE}	100	250	-
	MMBT8050D	h_{FE}	160	300	-
at V_{CE} = 1 V, I_C = 1.5 A		h_{FE}	40	-	-
Collector Base Cutoff Current at V_{CB} = 35 V		I_{CBO}	-	100	nA
Emitter Base Cutoff Current at V_{EB} = 6 V		I_{EBO}	-	100	nA
Collector Base Breakdown Voltage at I_C = 100 µA		$V_{(BR)CBO}$	40	-	V
Collector Emitter Breakdown Voltage at I_C = 2 mA		$V_{(BR)CEO}$	25	-	V
Emitter Base Breakdown Voltage at I_E = 100 µA		$V_{(BR)EBO}$	6	-	V
Collector Emitter Saturation Voltage at I_C = 1.5 A, I_B = 100 mA		$V_{CE(sat)}$	-	0.5	V
Base Emitter Saturation Voltage at I_C = 1.5 A, I_B = 100 mA		$V_{BE(sat)}$	-	1.2	V
Base Emitter Voltage at V_{CE} = 1 V, I_C = 10 mA		$V_{BE(on)}$	-	1	V
Transition Frequency at V_{CE} = 10 V, I_C = 50 mA		f_T	100	-	MHz

Typical Characteristics

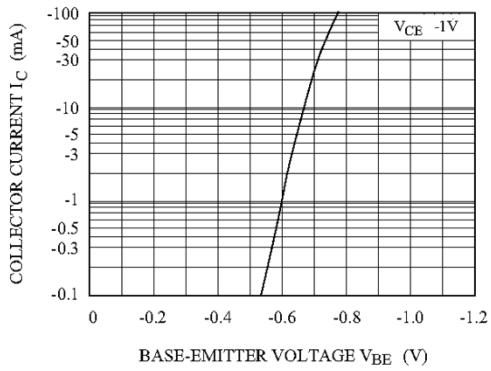
I_C - V_{CE}



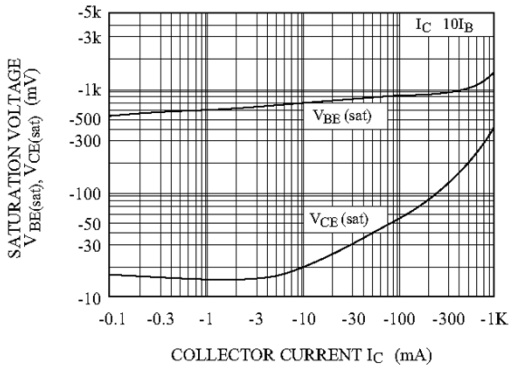
h_{FE} - I_C



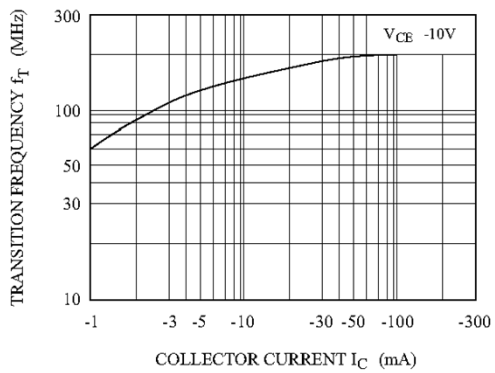
I_C - V_{BE}



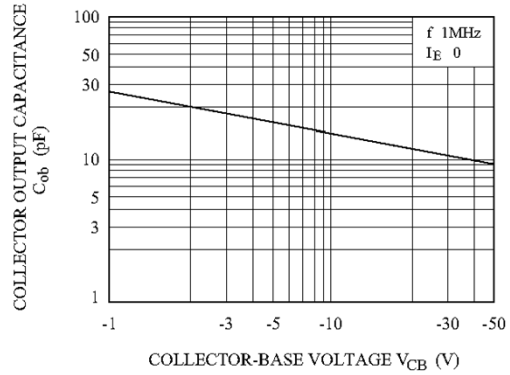
$V_{BE(sat)}$, $V_{CE(sat)}$ - I_C



f_T - I_C

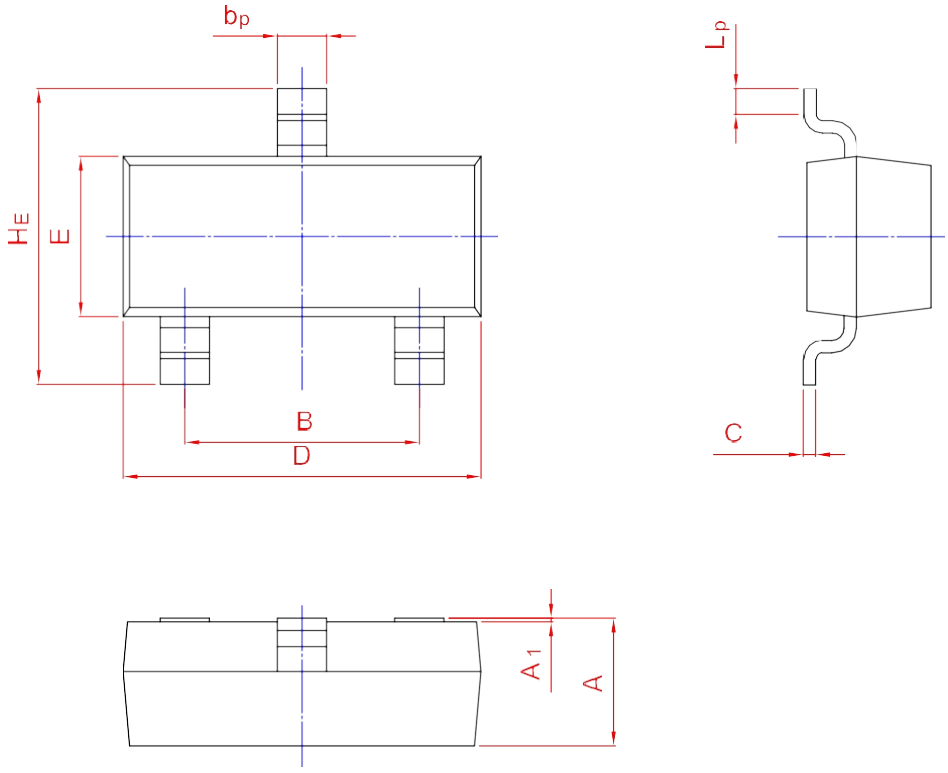


C_{ob} - V_{CB}



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT-23**



UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20