MMBTA05 TRANSISTOR (NPN)

1.BASE
2.COLLECTOR
3.EMITTER

SOT-23-3

FEATURES

Driver transistor

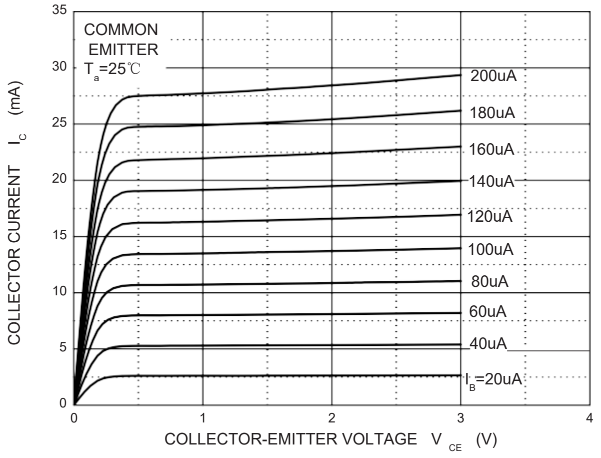
MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	4	V
I_C	Collector Current	500	mA
P_C	Collector Power Dissipation	300	mW
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient	417	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55～+150	℃

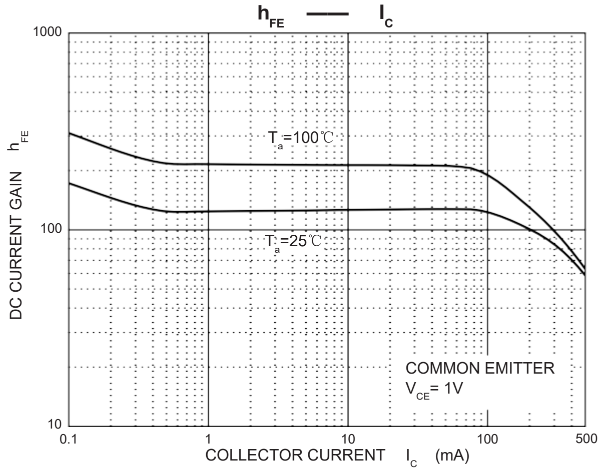
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= 100μA, I_E=0	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C= 1mA, I_B=0	60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=100μA, I_C=0	4			V
Collector cut-off current	I_{CBO}	V_{CB}=60V, I_E=0			0.1	μA
Collector cut-off current	I_{CEO}	V_{CE}=60V, I_B=0			0.1	μA
Collector cut-off current	I_{EBO}	V_{EB}=3V, I_C=0			0.1	μA
DC current gain	h_{FE1}	V_{CE}=1V, I_C= 10mA	100		400	
	h_{FE2}	V_{CE}=1V, I_C= 100mA	100			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=100mA, I_B=10mA			0.25	V
Base-emitter voltage	V_{BE}	V_{CE}=1V, I_C= 100mA			1.2	V
Transition frequency	f_T	V_{CE}= 2V, I_C=10mA f=100MHz	100			MHz

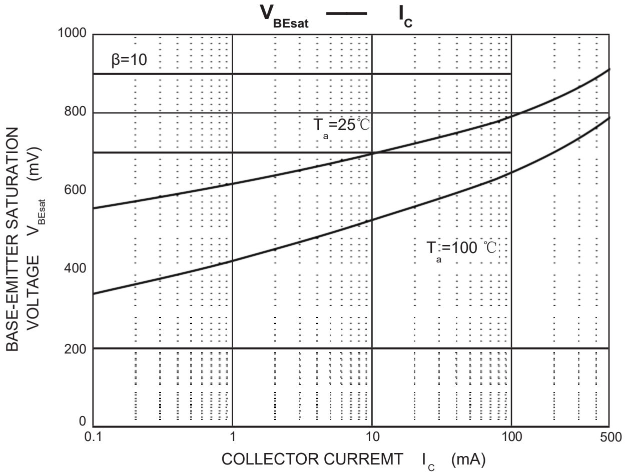
Static Characteristic



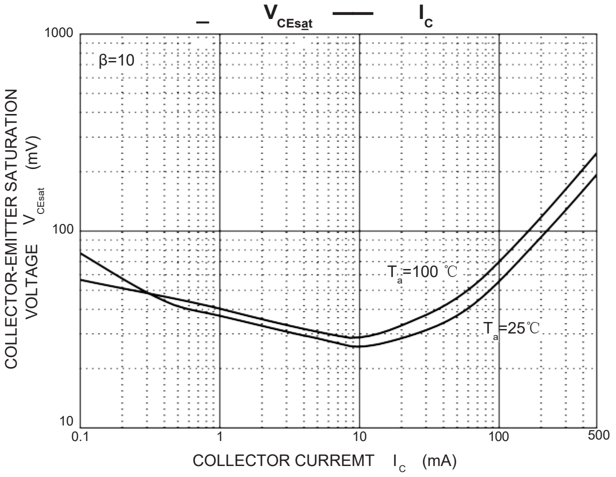
h_{FE} —— I_C



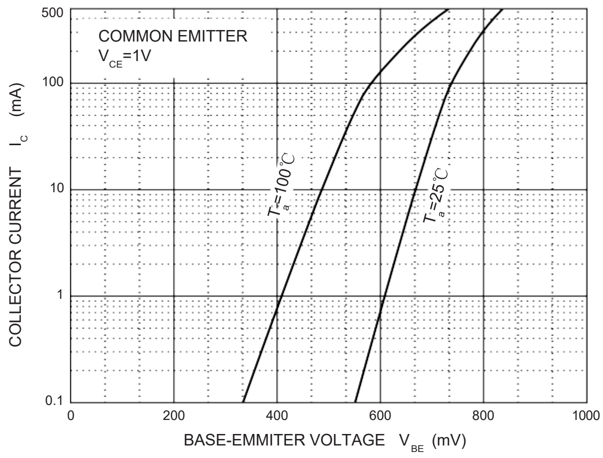
V_{BEsat} —— I_C



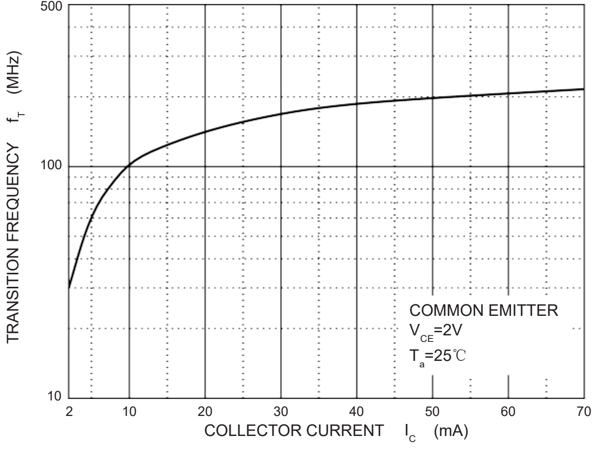
V_{CEsat} —— I_C



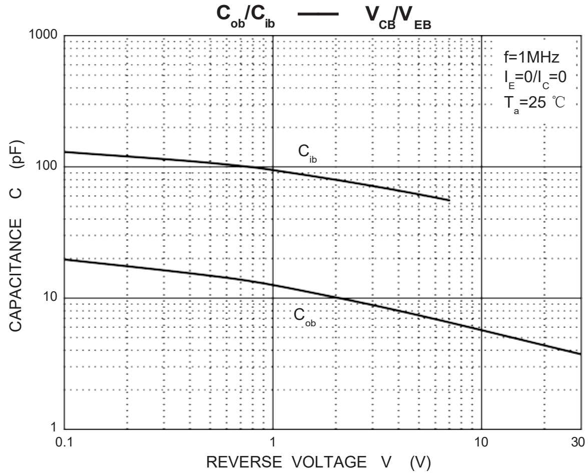
I_C —— V_{BE}



f_T —— I_C



C_{ob}/C_{ib} —— V_{CB}/V_{EB}



P_C —— T_a