MMBT589 TRANSISTOR (PNP)

1.BASE
2.COLLECTOR
3.EMITTER

SOT-23-3

FEATURES

- High current surface mount PNP silicon switching transistor for Load management in portable applications

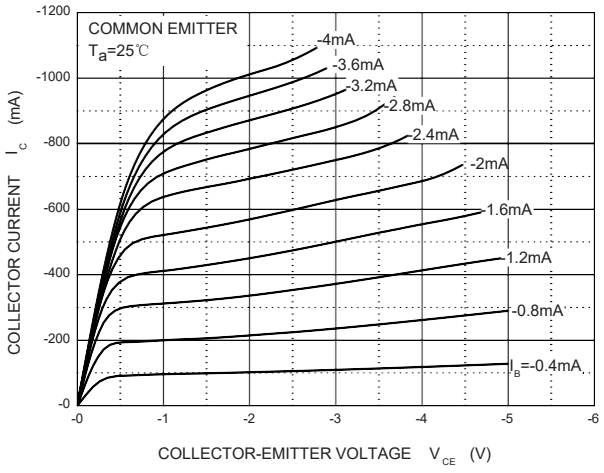
MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-50	V
V_{CEO}	Collector-Emitter Voltage	-30	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-1	A
P_C	Collector Power Dissipation	310	mW
$R_{\theta JA}$	Thermal Resistance, junction to Ambient	403	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55-150	℃

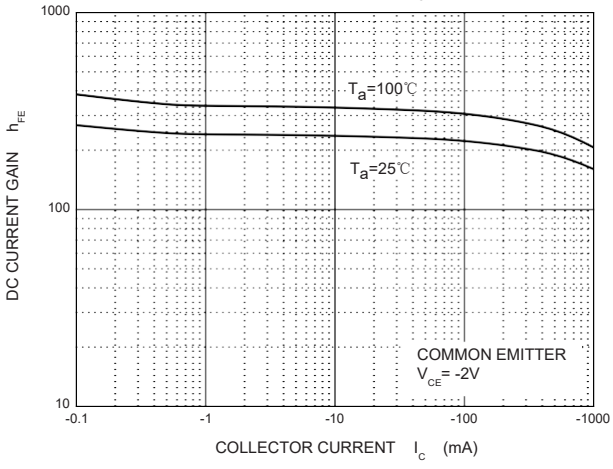
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-100μA,I_E=0	-50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=-10mA,I_B=0	-30			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-100μA,I_C=0	-5			V
Collector cut-off current	I_{CBO}	V_{CB}=-30V,I_E=0			-0.1	μA
Collector-emitter cut-off current	I_{CES}	V_{CES}=-30V			-0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=-4V,I_C=0			-0.1	μA
DC current gain	h_{FE1}	V_{CE}=-2V,I_C=-1mA	100			
	h_{FE2}	V_{CE}=-2V,I_C=-500mA	100		300	
	h_{FE3}	V_{CE}=-2V,I_C=-1A	80			
	h_{FE4}	V_{CE}=-2V,I_C=-2A	40			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	I_C= -500mA, I_B=-50mA			-0.25	V
	$V_{CE(sat)2}$	I_C= -1A, I_B=-100mA			-0.3	V
	$V_{CE(sat)3}$	I_C= -2A, I_B=-200mA			-0.65	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C= -1A, I_B=-100mA			-1.2	V
Base-emitter Turn-on voltage	$V_{BE(on)}$	V_{CE}=-2V, I_C=-1A			-1.1	V
Transition frequency	f_T	V_{CE}=-5V, I_C=-100mA , f =100MHz	100			MHz
Collector Output Capacitance	C_{ob}	f=1MHz			15	pF

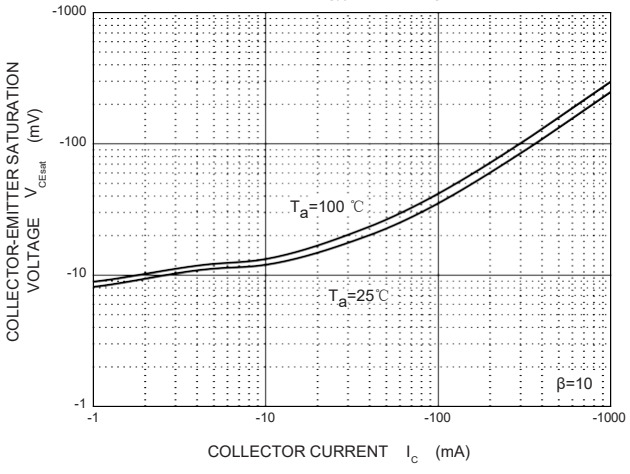
Static Characteristic



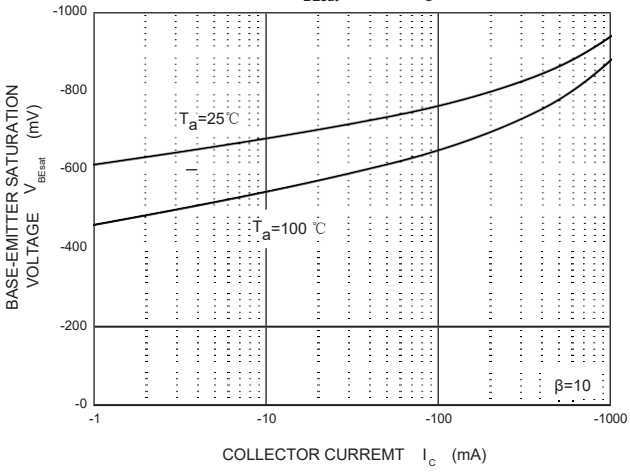
h_{FE} — I_C



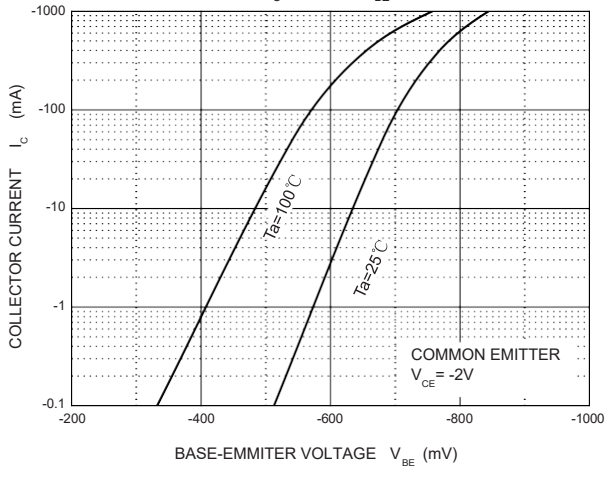
V_{CEsat} — I_C



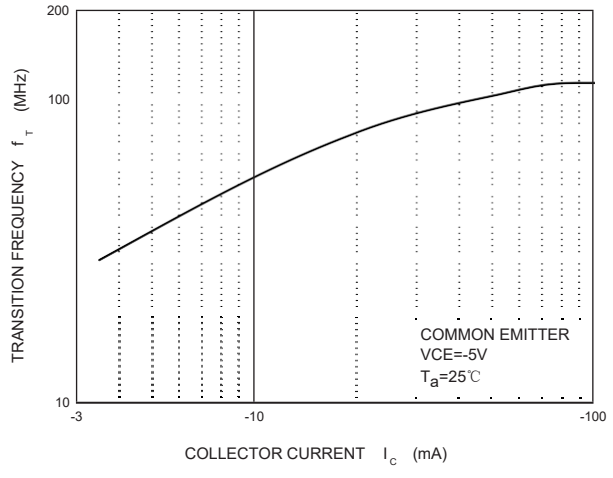
V_{BEsat} — I_C



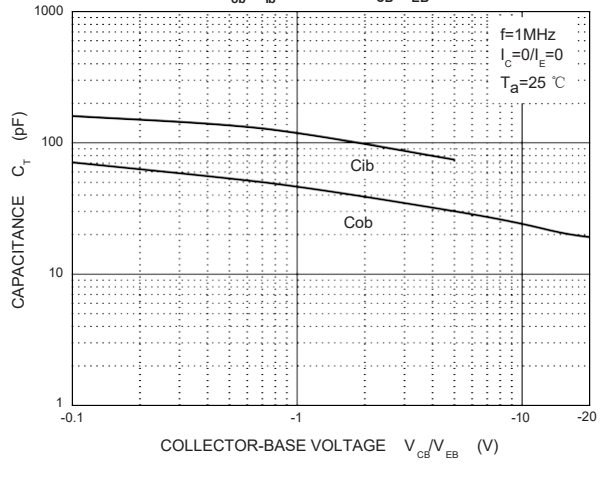
I_C — V_{BE}



f_T — I_C



C_{ob}/C_{ib} — V_{CB}/V_{EB}



P_C — T_a