Elektronische Bauelemente

MMBT593

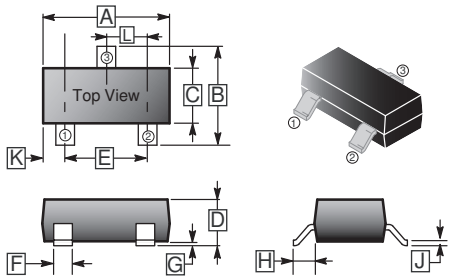
PNP Silicon General Purpose Transistor

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

FEATURES

Medium Power Transistor

SOT-23



MARKING

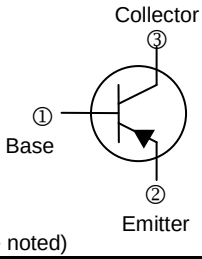
593

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch

ORDER INFORMATION

Part Number	Type
MMBT593	Lead (Pb)-free
MMBT593-C	Lead (Pb)-free and Halogen-free



REF.	Millimeter Min.	Millimeter Max.	REF.	Millimeter Min.	Millimeter Max.
A	2.70	3.10	G	0	0.18
B	2.10	2.95	H	0.55 REF.	
C	1.20	1.7	J	0.08	0.20
D	0.89	1.3	K	0.6 REF.	
E	1.70	2.3	L	0.95 BSC.	
F	0.30	0.50			

ABSOLUTE MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Collector-Base Voltage	V_{CBO}	-120	V
Collector-Emitter Voltage	V_{CEO}	-100	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-1	A
Collector Current Dissipation	P_C	250	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	500	℃/W
Junction and Storage Temperature	T_J, T_{STG}	150, -55~150	℃

ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	BV_{CBO}	-120	-	-	V	I_C= -100uA, I_E=0
Collector-Emitter Breakdown Voltage	BV_{CEO}	-100	-	-	V	I_C= -10mA, I_B=0
Emitter-Base Breakdown Voltage	BV_{EBO}	-5	-	-	V	I_E= -100uA, I_C=0
Collector Cut-off Current	I_{CBO}	-	-	-0.1	uA	V_{CB}= -100V, I_E=0
Collector Cut-off Current	I_{CES}	-	-	-0.1		V_{CES}= -100V, I_E=0
Emitter Cut-off Current	I_{EBO}	-	-	-0.1		V_{EB}= -4V, I_C=0
DC Current Gain [1]	h_{FE}	100	-	-		I_C= -1mA, V_{CE}= -5V
		100	-	-		I_C= -250mA, V_{CE}= -5V
		100	-	300		I_C= -0.5A, V_{CE}= -5V
		50	-	-		I_C= -1A, V_{CE}= -5V
Collector–Emitter Saturation Voltage [1]	$V_{CE(sat)}$	-	-	-0.2	V	I_C= -250mA, I_B= -25mA
		-	-	-0.3		I_C= -500mA, I_B= -50mA
Base–Emitter Saturation Voltage [1]	$V_{BE(sat)}$	-	-	-1.1	V	I_C= -500mA, I_B= -50mA
Base–Emitter Voltage [1]	$V_{BE(on)}$	-	-	-1		V_{CE}= -5V, I_C= -1mA
Transition Frequency	f_T	50	-	-	MHz	V_{CE}= -10V, I_C= -50mA, f=100MHz
Collector Output Capacitance	C_{OB}	-	5	-	pF	V_{CB}= -10V, I_E=0, f=1.0MHz

Note:
1. Pulse test: Pulse width ≦ 300us, duty cycle ≦ 2%

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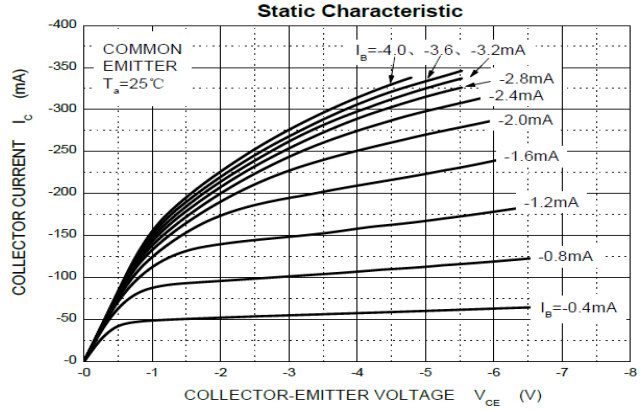
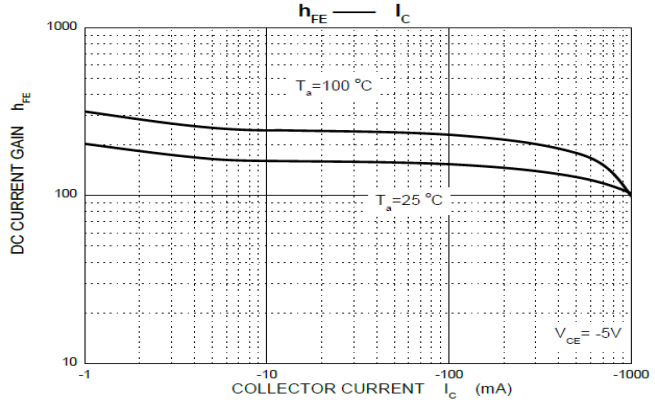
CHARACTERISTICS CURVE

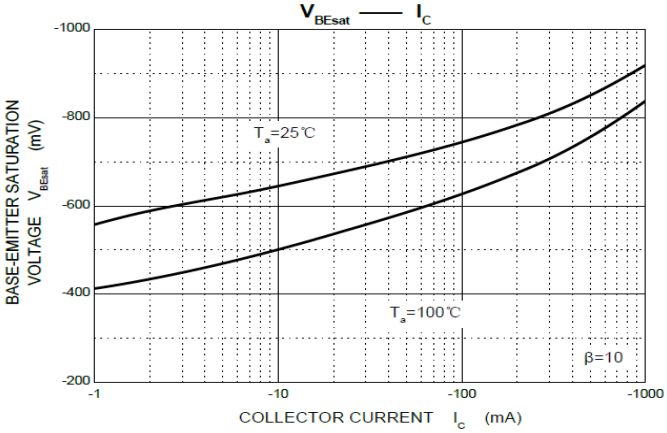
Static Characteristic



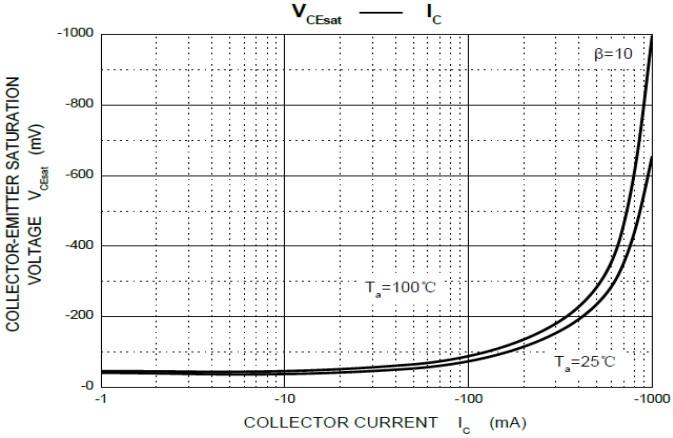
h_{FE} —— I_C



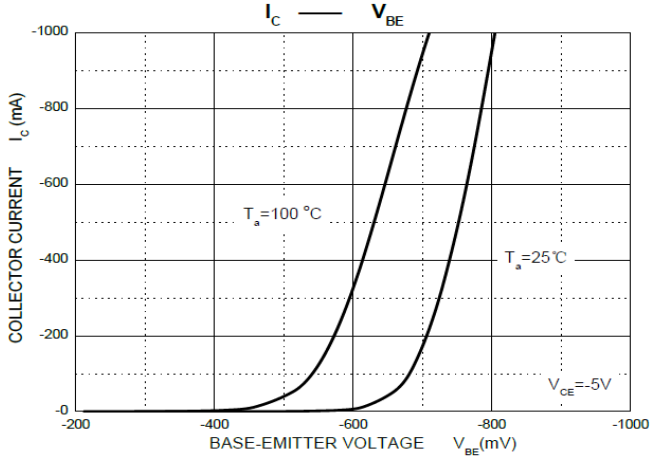
V_{BEsat} —— I_C



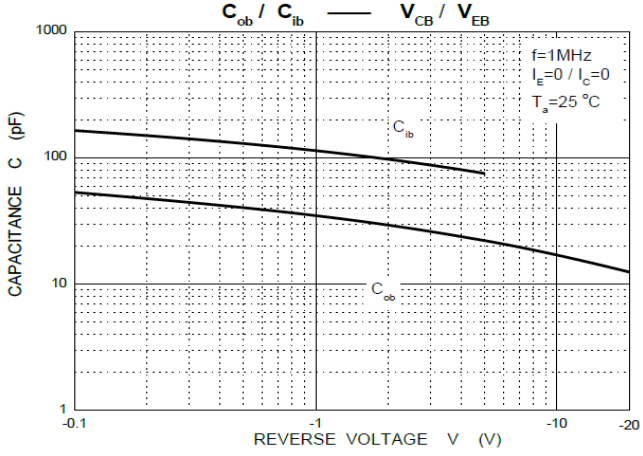
V_{CEsat} —— I_C



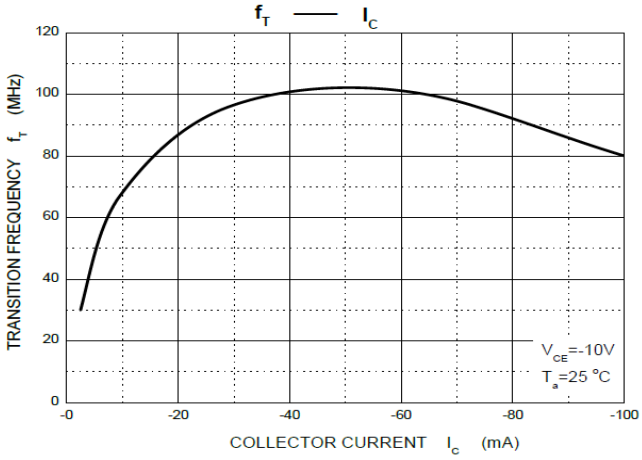
I_C —— V_{BE}



C_{ob} / C_{ib} —— V_{CB} / V_{EB}



f_T —— I_C



P_c —— T_a