Elektronische Bauelemente

MMBT493

NPN Silicon
General Purpose Transistor

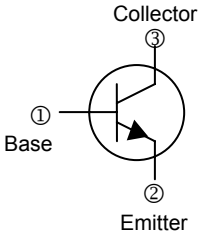
RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

FEATURES

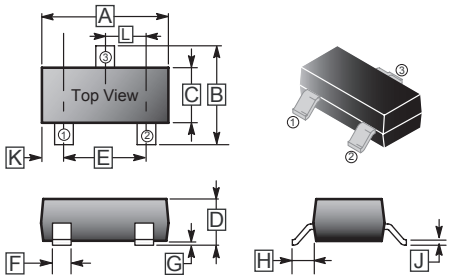
Medium Power Transistor

MARKING

493



SOT-23



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.80	3.00	G	0.10 REF.	
B	2.25	2.55	H	0.55 REF.	
C	1.20	1.40	J	0.08	0.15
D	0.90	1.15	K	0.5 REF.	
E	1.80	2.00	L	0.95 TYP.	
F	0.30	0.50			

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C 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 -Continuous	I_C	1	A
Collector Power Dissipation	P_D	250	mW
Junction & Storage temperature	T_J, T_{STG}	150, -55~150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Min.	Max.	Unit	Test Conditions
Collector-base Breakdown Voltage	$V_{(BR)CBO}$	120	-	V	I_C=100μA, I_E=0
Collector-emitter Breakdown Voltage	$V_{(BR)CEO}$*	100	-	V	I_C=10mA, I_B=0
Emitter-base Breakdown Voltage	$V_{(BR)EBO}$	5	-	V	I_E=100μA, I_C=0
Collector Cut-off Current	I_{CBO}	-	0.1	μA	V_{CB}=100V, I_E=0
Collector Cut-off Current	I_{CES}	-	0.1	μA	V_{CE}=100V, I_E=0
Emitter Cut-off Current	I_{EBO}	-	0.1	μA	V_{EB}=4V, I_C=0
DC Current Gain	$h_{FE(1)}$*	100	-		V_{CE}=10V, I_C=1mA
	$h_{FE(2)}$*	100	300		V_{CE}=10V, I_C=250mA
	$h_{FE(3)}$*	60	-		V_{CE}=10V, I_C=500mA
	$h_{FE(4)}$*	20	-		V_{CE}=10V, I_C=1000mA
Collector-emitter Saturation Voltage	$V_{CE(sat)}$*	-	0.3	V	I_C=500mA, I_B=50mA
	$V_{CE(sat)}$*	-	0.6	V	I_C=1000mA, I_B=100mA
Base-emitter Saturation Voltage	$V_{BE(sat)}$*	-	1.15	V	I_C=1000mA, I_B=100mA
	$V_{BE(on)}$*	-	1	V	V_{CE}=10V, I_C=1000mA
Transition Frequency	f_T	150	-	MHz	V_{CE} = 10V, I_C = 50mA, f = 100MHz
Output Capacitance	C_{OB}	-	10	pF	V_{CB} = 10V, f = 1.0MHz, I_E = 0

*Pulse test: Pulse width ≦ 300μs, duty cycle ≦ 2%

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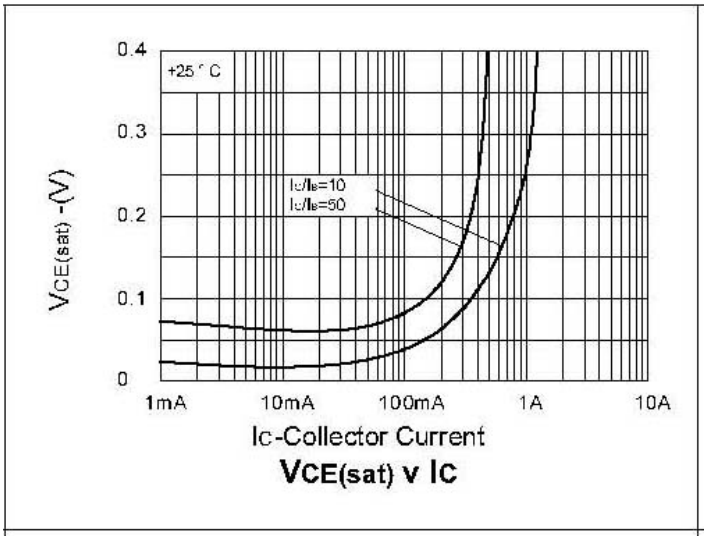
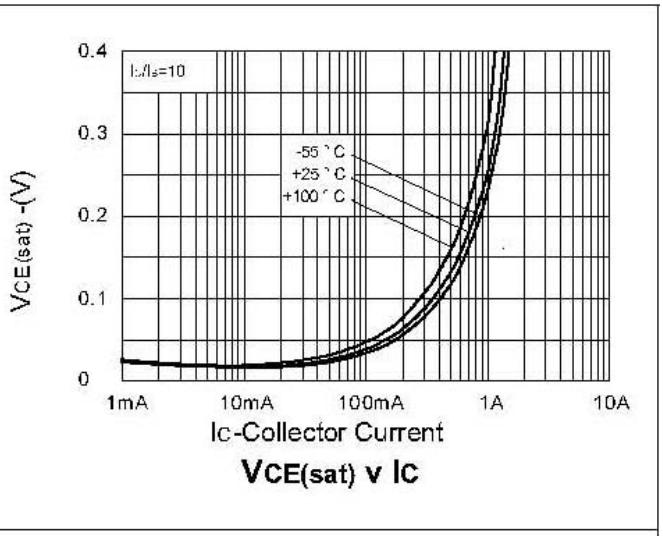
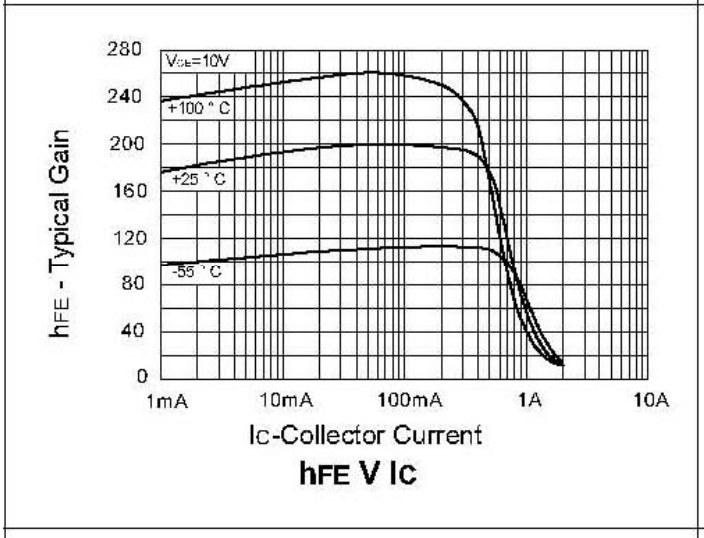
CHARACTERISTIC CURVES



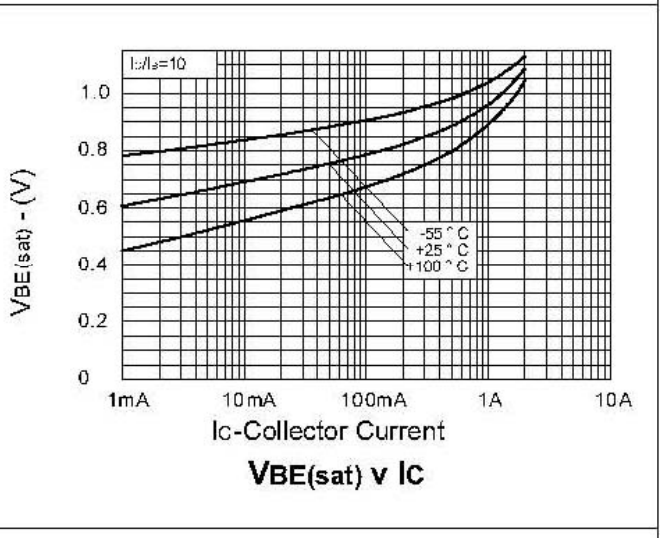
VCE(sat) v IC



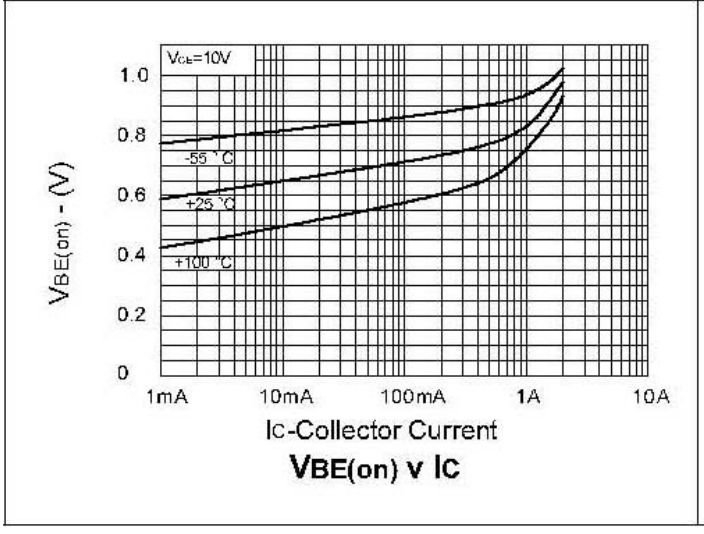
VCE(sat) v IC



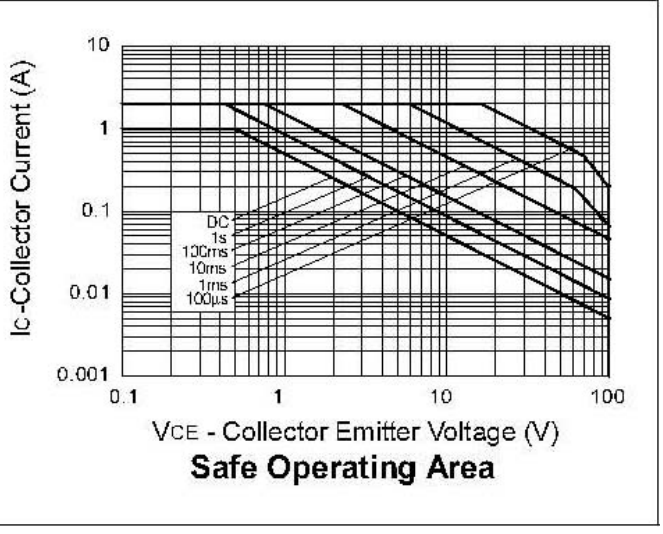
hFE V IC



VBE(sat) v IC



VBE(on) v IC



Safe Operating Area