

HIGH VOLTAGE APPLICATION.

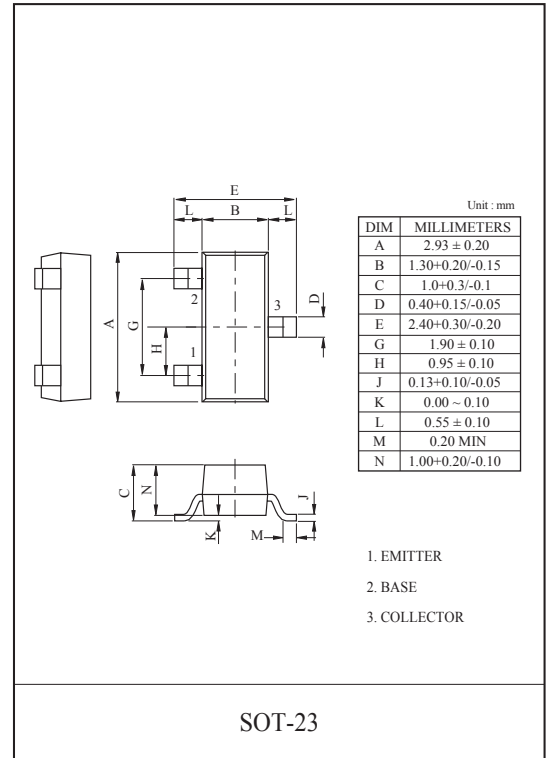
FEATURES

- High Breakdown Voltage.
- Collector Power Dissipation : $P_C=350\text{mW}$.

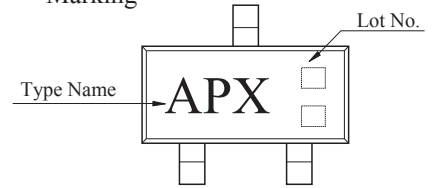
MAXIMUM RATING (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	450	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	300	mA
Collector Power Dissipation	P_C^*	350	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55 ~ 150	°C

* : Package Mounted On 99.5% Alumina $10 \times 8 \times 0.6\text{mm}$.



Marking



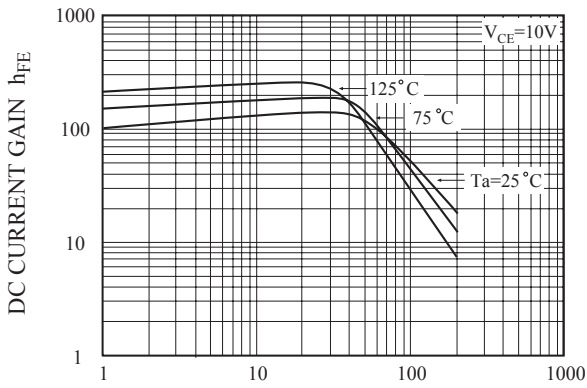
ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	450	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	400	-	-	V
Collector-Emitter Breakdown Voltage (2)	$V_{(BR)CES}$	$I_C=100\mu\text{A}, I_B=0$	450	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	6.0	-	-	V
Collector Cut off Current	I_{CBO}	$V_{CB}=400\text{V}, I_E=0$	-	-	100	nA
Collector Cut off Current	I_{CES}	$V_{CE}=400\text{V}, I_B=0$	-	-	500	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$	-	-	100	nA
DC Current Gain *	h_{FE}	$V_{CE}=10\text{V}, I_C=1\text{mA}$	40	-	-	
		$V_{CE}=10\text{V}, I_C=10\text{mA}$	50	-	200	
		$V_{CE}=10\text{V}, I_C=50\text{mA}$	45	-	-	
		$V_{CE}=10\text{V}, I_C=100\text{mA}$	40	-	-	
Collector-Emitter Saturation Voltage *	$V_{CE(sat)1}$	$I_C=1\text{mA}, I_B=0.1\text{mA}$	-	-	0.4	V
	$V_{CE(sat)2}$	$I_C=10\text{mA}, I_B=1\text{mA}$	-	-	0.5	
	$V_{CE(sat)3}$	$I_C=50\text{mA}, I_B=5\text{mA}$	-	-	0.75	
Base-Emitter Saturation Voltage *	$V_{BE(sat)}$	$I_C=10\text{mA}, I_B=1\text{mA}$	-	-	0.75	V
Transition Frequency	f_T	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=10\text{MHz}$	20	-	-	MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=20\text{V}, I_E=0, f=1\text{MHz}$	-	-	7	pF
Input Capacitance	C_{ib}	$V_{EB}=0.5\text{V}, I_C=0, f=1\text{MHz}$	-	-	130	pF

*Pulse Test : Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2.0\%$

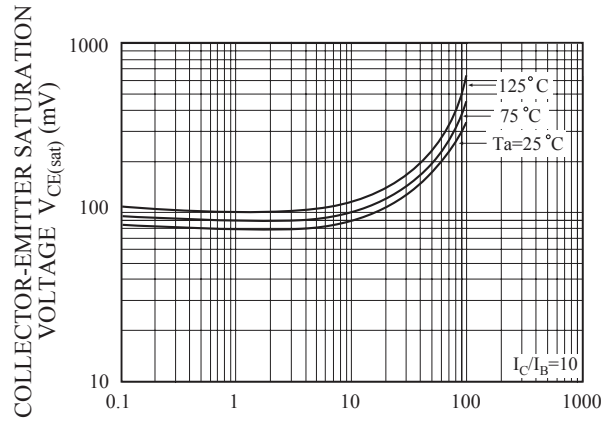
MMBTA44

$h_{FB} - I_C$



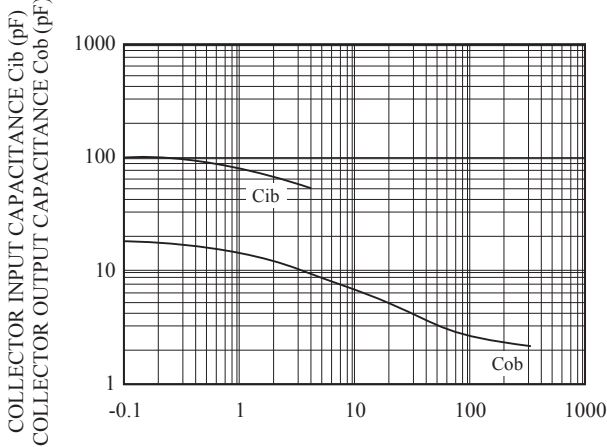
COLLECTOR CURRENT I_C (mA)

$V_{CE(sat)} - I_C$



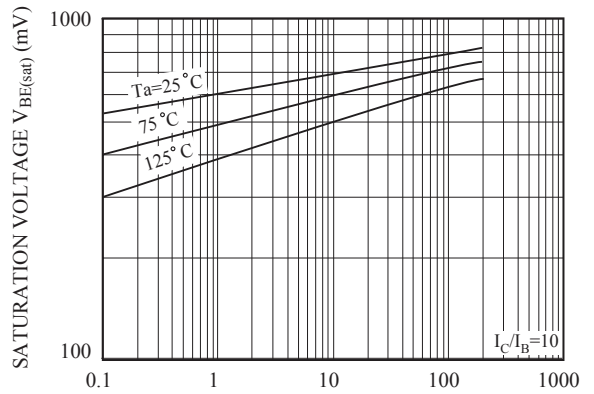
COLLECTOR CURRENT I_C (mA)

$C_{ob}, C_{ib} - V_R$



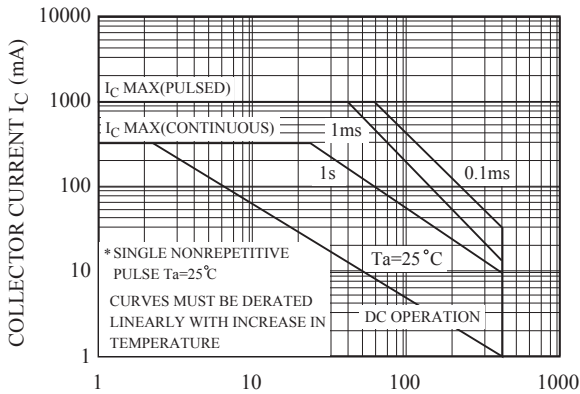
EMITTER-BASE VOLTAGE V_{EB} (V)

$V_{BE(sat)} - I_C$



COLLECTOR CURRENT I_C (mA)

SAFE OPERATING AREA



COLLECTOR-EMITTER VOLTAGE V_{CE} (V)