

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

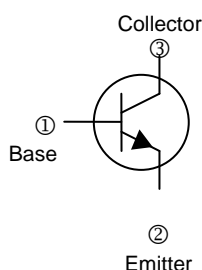
## FEATURES

- High Voltage Transistor

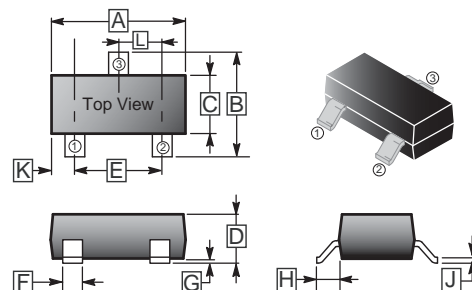
## MARKING

Product	Marking Code
MMBTA44	3D

## SYMBOL



## SOT-23



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.04	G	-	0.18
B	2.10	2.80	H	0.40	0.60
C	1.20	1.60	J	0.08	0.20
D	0.89	1.40	K	0.6 REF.	
E	1.78	2.04	L	0.85	1.15
F	0.30	0.50			

## MAXIMUM RATINGS (at $T_A = 25^\circ\text{C}$ unless otherwise specified)

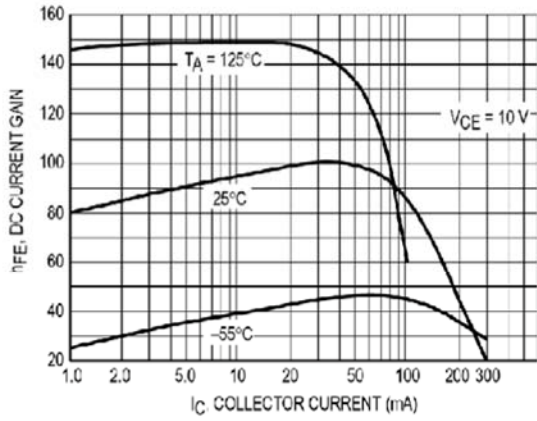
PARAMETER	SYMBOL	RATINGS	UNIT
Collector - Base Voltage	$V_{CBO}$	500	V
Collector - Emitter Voltage	$V_{CEO}$	400	V
Emitter - Base Voltage	$V_{EBO}$	6	V
Collector Current - Continuous	$I_C$	0.1	A
Collector Power Dissipation	$P_C$	350	mW
Junction, Storage Temperature	$T_J, T_{STG}$	150, -55~150	$^\circ\text{C}$

## ELECTRICAL CHARACTERISTICS (at $T_A = 25^\circ\text{C}$ unless otherwise specified)

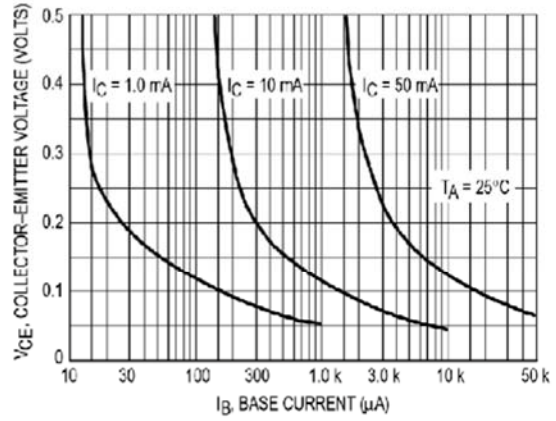
PARAMETER	TEST CONDITIONS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Collector-Base Breakdown Voltage	$I_C = 100\mu\text{A}, I_E = 0$	$V_{(BR)CBO}$	500	-	-	V
Collector-Emitter Breakdown Voltage	$I_C = 1\text{mA}, I_B = 0$	$V_{(BR)CEO}$	400	-	-	V
Emitter-Base Breakdown Voltage	$I_E = 10\mu\text{A}, I_C = 0$	$V_{(BR)EBO}$	6	-	-	V
Collector Cut-Off Current	$V_{CB} = 400\text{V}, I_E = 0$	$I_{CBO}$	-	-	0.1	$\mu\text{A}$
Emitter Cut-Off Current	$V_{EB} = 4\text{V}, I_C = 0$	$I_{EBO}$	-	-	0.1	$\mu\text{A}$
DC Current Gain	$V_{CE} = 10\text{V}, I_C = 1\text{mA}$	$h_{FE1}^*$	40	-	-	
	$V_{CE} = 10\text{V}, I_C = 10\text{mA}$	$h_{FE2}^*$	50	-	200	
	$V_{CE} = 10\text{V}, I_C = 50\text{mA}$	$h_{FE3}^*$	45	-	-	
	$V_{CE} = 10\text{V}, I_C = 100\text{mA}$	$h_{FE4}^*$	40	-	-	
Collector-Emitter Saturation Voltage	$I_C = 1\text{mA}, I_B = 0.1\text{mA}$	$V_{CE(sat)1}^*$	-	-	0.4	V
	$I_C = 10\text{mA}, I_B = 1\text{mA}$	$V_{CE(sat)2}^*$	-	-	0.5	V
	$I_C = 50\text{mA}, I_B = 5\text{mA}$	$V_{CE(sat)3}^*$	-	-	0.75	V
Base-Emitter Saturation Voltage	$I_C = 10\text{mA}, I_B = 1\text{mA}$	$V_{BE(sat)}^*$	-	-	0.75	V
Output Capacitance	$V_{CB} = 20\text{V}, I_E = 0, f = 1\text{MHz}$	$C_{obo}$	-	-	7	pF
Input Capacitance	$V_{EB} = 0.5\text{V}, I_C = 0, f = 1\text{MHz}$	$C_{ibo}$	-	-	130	pF

\*Pulse test

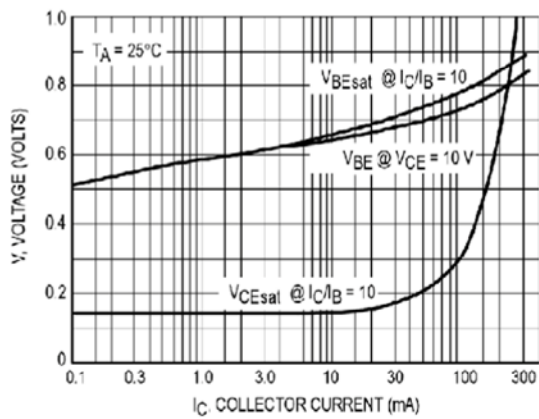
**CHARACTERISTIC CURVES**



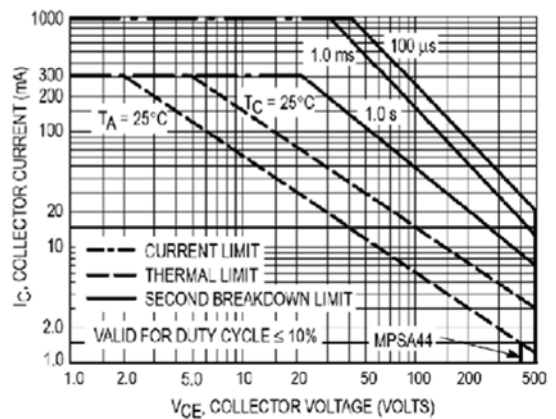
**DC Current Gain**



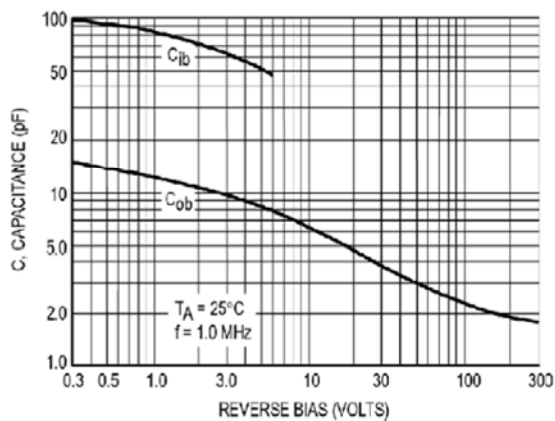
**Collector Saturation Region**



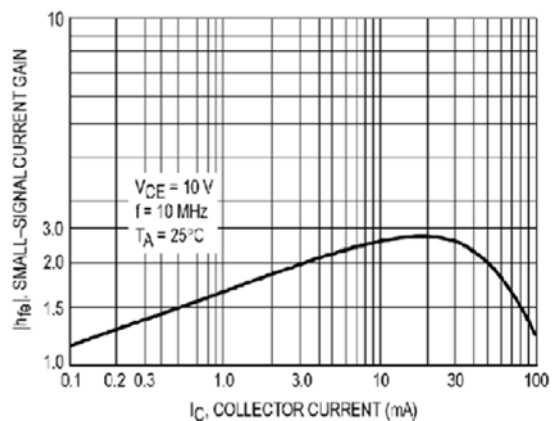
**"On" Voltages**



**Active Region — Safe Operating Area**



**Capacitance**



**High Frequency Current Gain**