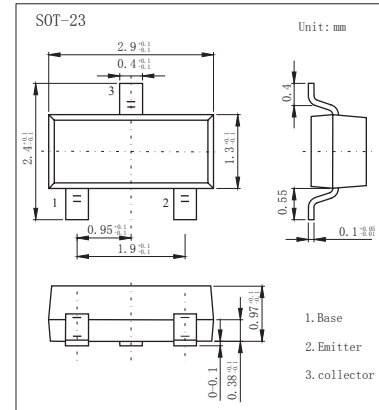


## NPN Transistors

### MMBTA44 (KMBTA44)



#### ■ Features

- High Collector-Emitter Voltage
- Complement to MMBTA94

#### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	$V_{CB0}$	400	V
Collector - Emitter Voltage	$V_{CE0}$	400	
Emitter - Base Voltage	$V_{EB0}$	6	
Collector Current - Continuous	$I_C$	200	mA
Collector Current -Pulsed	$I_{CM}$	300	
Collector Power Dissipation	$P_C$	350	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	357	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to 150	

#### ■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	$V_{CB0}$	$I_C = 100 \mu\text{A}, I_E = 0$	400			V
Collector- emitter breakdown voltage *1	$V_{CE0}$	$I_C = 1 \text{ mA}, I_B = 0$	400			
Emitter - base breakdown voltage	$V_{EB0}$	$I_E = 100 \mu\text{A}, I_C = 0$	6			
Collector-base cut-off current	$I_{CB0}$	$V_{CB} = 400 \text{ V}, I_E = 0$			100	nA
Emitter cut-off current	$I_{EB0}$	$V_{EB} = 4 \text{ V}, I_C = 0$			100	
Collector-emitter saturation voltage *1	$V_{CE(sat)1}$	$I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$			0.2	V
	$V_{CE(sat)2}$	$I_C = 50 \text{ mA}, I_B = 5 \text{ mA}$			0.3	
Base - emitter saturation voltage *1	$V_{BE(sat)}$	$I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$			0.75	
DC current gain *1	$h_{FE(1)}$	$V_{CE} = 10 \text{ V}, I_C = 1 \text{ mA}$	50			
	$h_{FE(2)}$	$V_{CE} = 10 \text{ V}, I_C = 10 \text{ mA}$	80		300	
	$h_{FE(3)}$	$V_{CE} = 10 \text{ V}, I_C = 50 \text{ mA}$	40			
	$h_{FE(4)}$	$V_{CE} = 10 \text{ V}, I_C = 100 \text{ mA}$	40			
Collector output capacitance	$C_{ob}$	$V_{CB} = 20 \text{ V}, I_E = 0, f = 1 \text{ MHz}$			7	pF
Transition frequency	$f_T$	$V_{CE} = 20, I_C = 10 \text{ mA}, f = 30 \text{ MHz}$	50			MHz

\*1: Pulse test: pulse width  $\leq 300 \mu\text{s}$ , duty cycle  $\leq 2.0\%$ .

#### ■ Classification of $h_{FE(2)}$

Type	MMBTA44	MMBTA44-L
Range	80-300	100-200
Marking	3D	

# NPN Transistors

## MMBTA44 (KMBTA44)

■ Typical Characteristics

