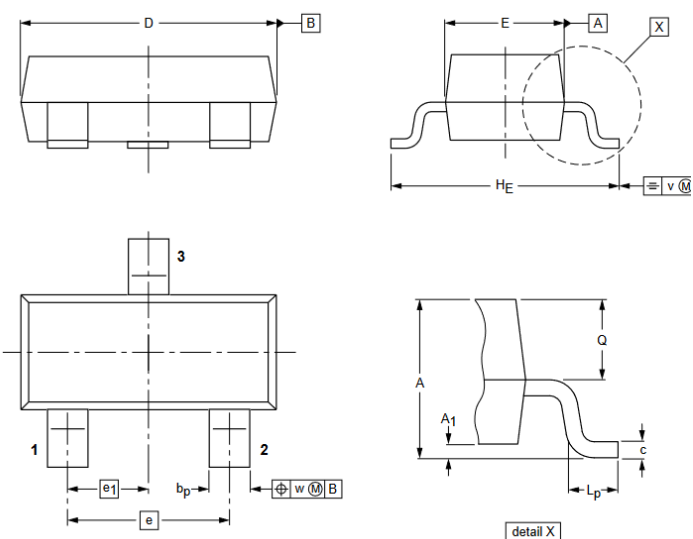


## NPN Transistors

Primary characteristics			
Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-base voltage	300	V
$V_{CEO}$	Collector-emitter voltage	300	V
$V_{EBO}$	Emitter-base voltage	5	V
$P_C$	Collector power dissipation	350	mW

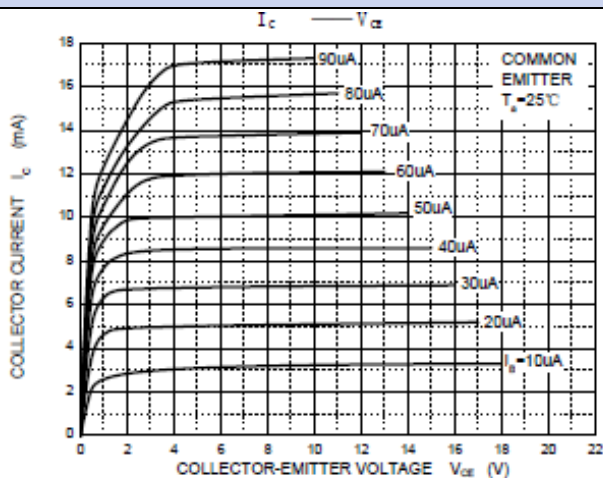
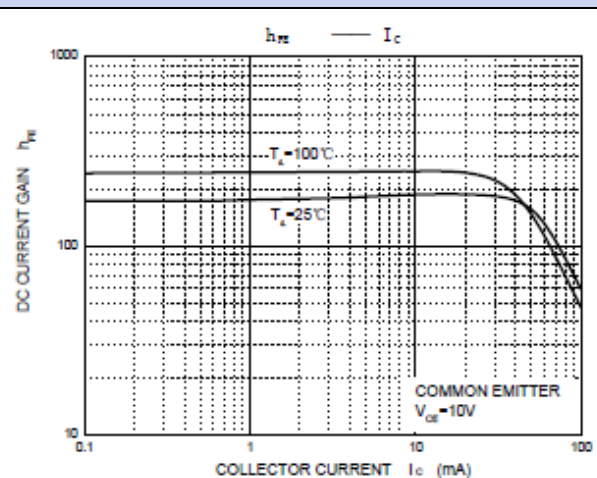
### Features

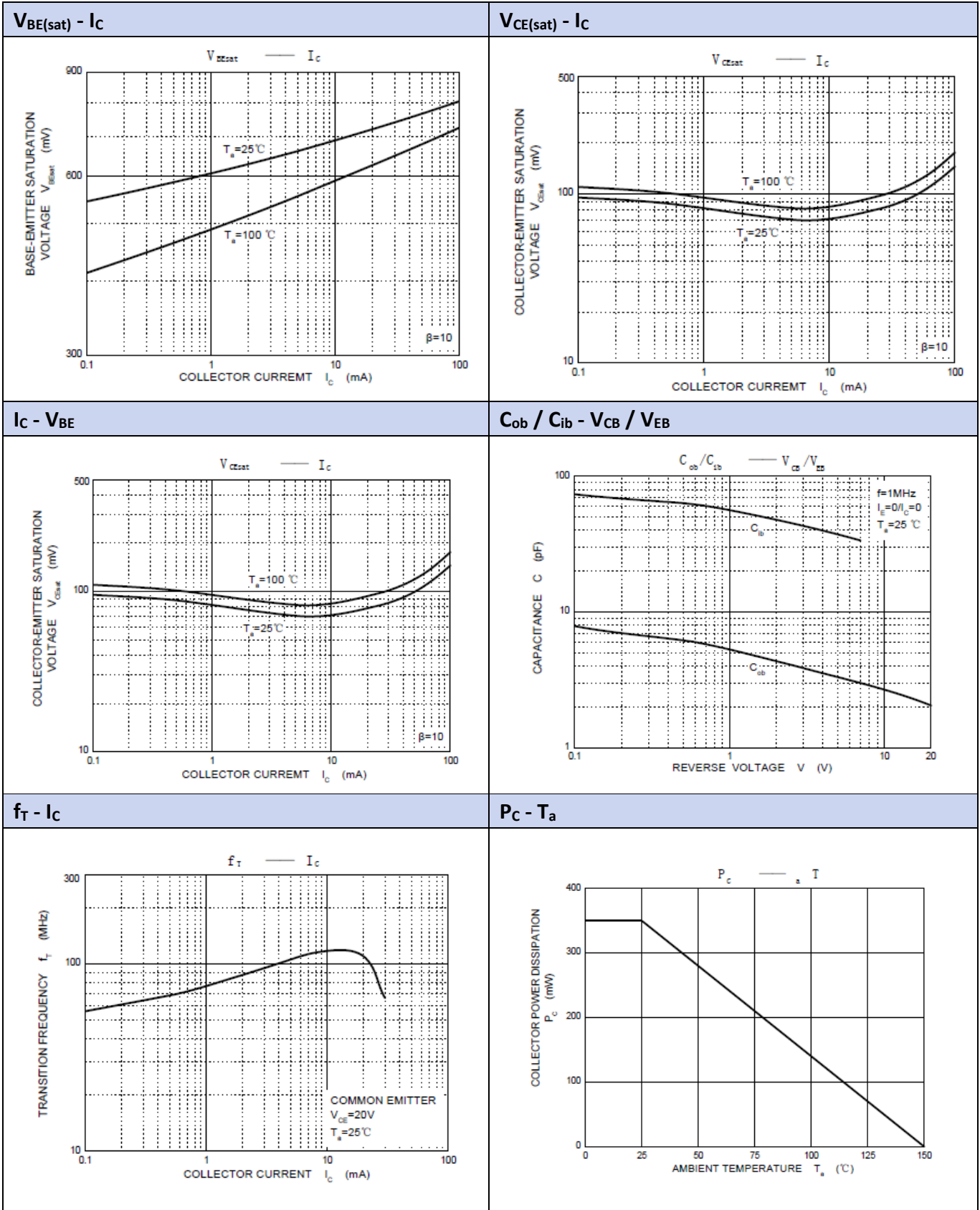
- **SOT-23** case for easy automatic insertion.
- Pb-free and **RoHS** compliant
- High breakdown voltage
- Low collector-emitter saturation voltage

Case dimensions													
													
1 – Base; 2 – Emitter; 3 – Collector													
<b>SOT-23 (TO-236AB)</b>													
Unit	A	A <sub>1</sub> max	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	Q	v	w
mm	1.0 ±0.1	0.1	0.43 ±0.05	0.12 ±0.03	2.9 ±0.1	1.3 ±0.1	1.9	0.95	2.3 ±0.2	0.3 ±0.15	0.5 ±0.05	0.2	0.1

**Electrical characteristics and maximum ratings ( $T_a = 25^\circ\text{C}$ )**

Parameter	Symbol	Test conditions	Value		Unit
			Min	Max	
Collector-base voltage	$V_{CB0}$	$I_C = 100\mu\text{A}, I_E = 0$	300		V
Collector-emitter voltage	$V_{CE0}$	$I_C = 100\mu\text{A}, I_B = 0$	300		V
Emitter-base voltage	$V_{EB0}$	$I_E = 100\mu\text{A}, I_C = 0$	5		V
Collector cut-off current	$I_{CBO}$	$V_{CB} = 200\text{V}, I_E = 0$		0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 5\text{V}, I_C = 0$		0.1	$\mu\text{A}$
Collector current	$I_C$			500	mA
Collector power dissipation	$P_C$			350	mW
DC current gain	$h_{FE(1)}$	$V_{CE} = 10\text{V}, I_C = 1\text{mA}$	60	-	-
	$h_{FE(2)}$	$V_{CE} = 10\text{V}, I_C = 100\text{mA}$	100	300	-
	$H_{FE(3)}$	$V_{CE} = 10\text{V}, I_C = 30\text{mA}$	60	-	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 20\text{mA}, I_B = 2\text{mA}$		0.2	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 20\text{mA}, I_B = 2\text{mA}$		0.9	V
Transition frequency	$f_T$	$V_{CE} = 20\text{V}, I_C = 10\text{mA}$ $f = 30\text{MHz}$	50		MHz
Junction temperature	$T_j$			150	$^\circ\text{C}$
Storage temperature range	$T_s$		-55	150	$^\circ\text{C}$
Thermal resistance junction to ambient air <sup>1)</sup>	$R_{thA}$			357	$^\circ\text{C}/\text{W}$

**Static characteristic**

 **$H_{FE} - I_C$** 




<b>Ordering information</b>			
<b>Part Number</b>	<b>Package</b>	<b>Shipping Quantity</b>	<b>Dimensions</b>
MBTA42	SOT-23 (TO-236AB)	3000 pcs / reel	---

## Disclaimer

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