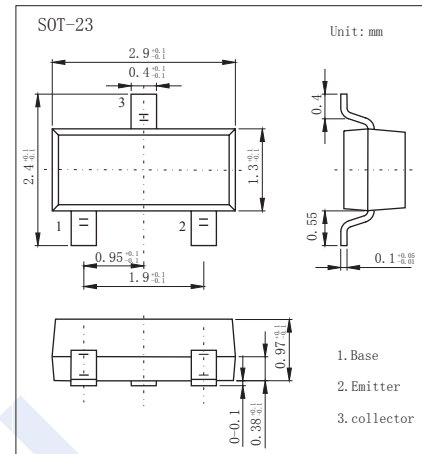


NPN Transistors

MMBTA42 (KMBTA42)

■ Features

- High breakdown voltage
- Low collector-emitter saturation voltage
- Complementary to MMBTA92 (PNP)

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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CB0}	300	V
Collector - Emitter Voltage	V_{CE0}	300	
Emitter - Base Voltage	V_{EB0}	5	
Collector Current - Continuous	I_C	500	mA
Collector Power Dissipation	P_C	350	mW
Thermal Resistance 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}	$I_C = 100 \mu\text{A}$, $I_E = 0$	300			V
Collector-emitter breakdown voltage	V_{CE0}	$I_C = 1 \text{ mA}$, $I_B = 0$	300			
Emitter - base breakdown voltage	V_{EB0}	$I_E = 100 \mu\text{A}$, $I_C = 0$	5			
Collector-base cut-off current	I_{CB0}	$V_{CB} = 200 \text{ V}$, $I_E = 0$			0.1	μA
Emitter cut-off current	I_{EB0}	$V_{EB} = 5 \text{ V}$, $I_C = 0$			0.1	
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	
DC current gain	$h_{fe} (1)$	$V_{CE} = 10 \text{ V}$, $I_C = 1 \text{ mA}$	60			
	$h_{fe} (2)$	$V_{CE} = 10 \text{ V}$, $I_C = 10 \text{ mA}$	100		300	
	$h_{fe} (3)$	$V_{CE} = 10 \text{ V}$, $I_C = 30 \text{ mA}$	60			
Transition frequency	f_T	$V_{CE} = 20 \text{ V}$, $I_C = 10 \text{ mA}$, $f = 30 \text{ MHz}$	50			MHz

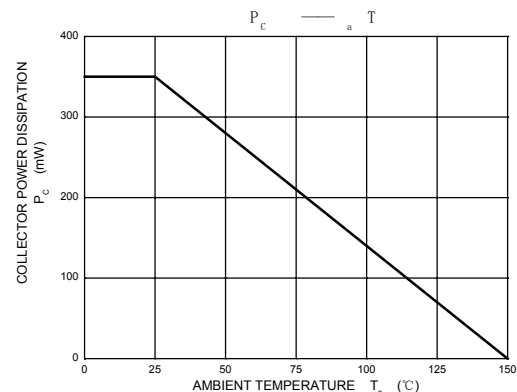
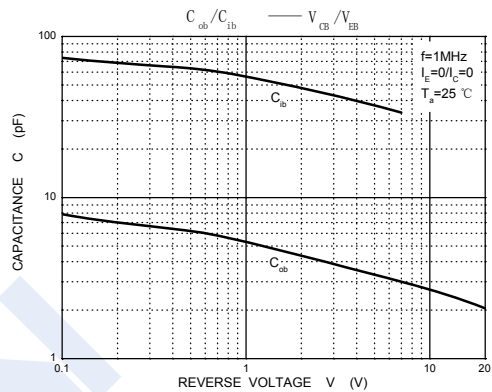
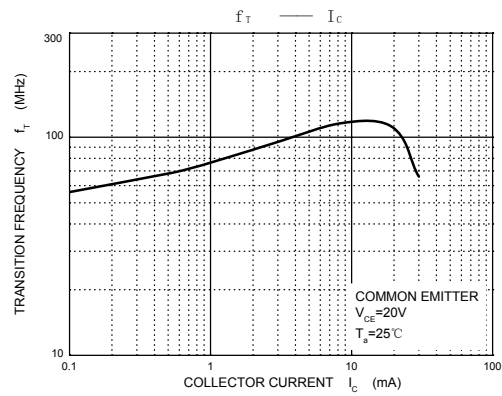
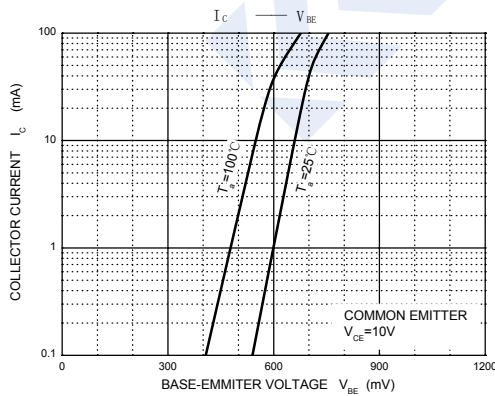
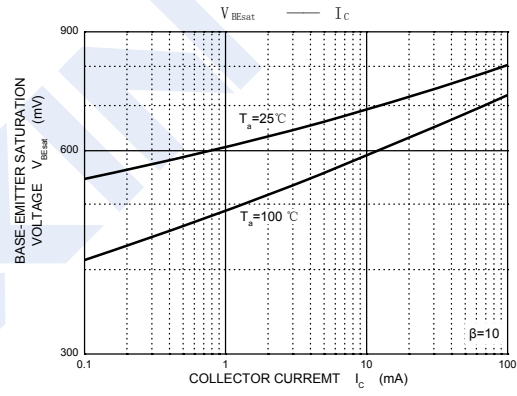
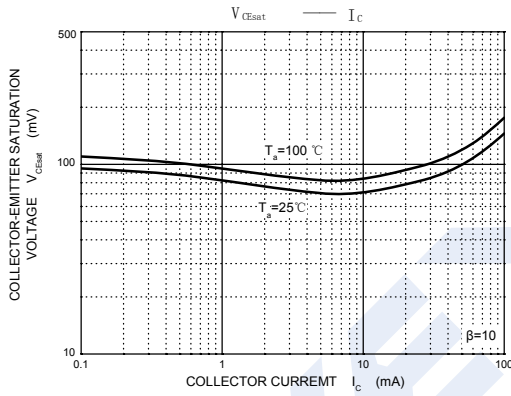
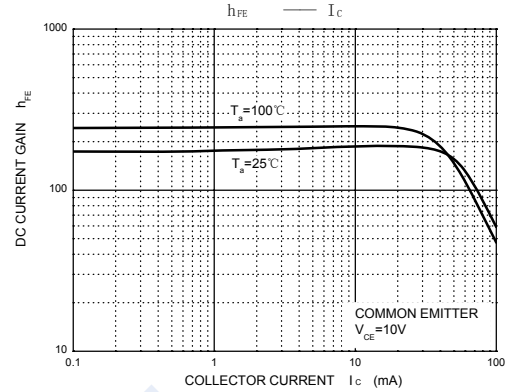
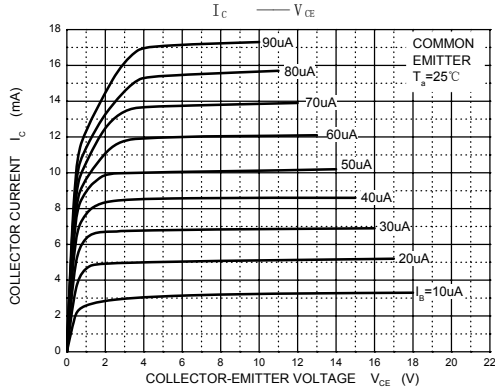
■ Classification of $h_{fe}(2)$

Type	MMBTA42	MMBTA42-L
Range	100-300	100-200
Marking	1D	

NPN Transistors

MMBTA42 (KMBTA42)

■ Typical Characteristics



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