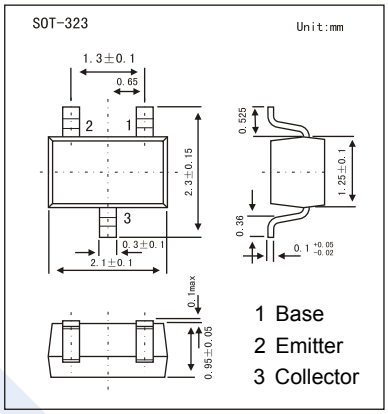
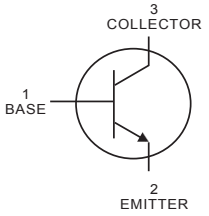
NPN Transistors

MMBTA42W (KMBTA42W)



■ Features

- Collector-emitter voltage V_{CE} = 300V
- Collector current I_C = 500mA
- NPN high voltage transistors



■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	300	V
Collector - Emitter Voltage	V_{CEO}	300	
Emitter - Base Voltage	V_{EBO}	6	
Collector Current - Continuous	I_C	500	mA
Collector Power Dissipation (Note.1)	P_C	150	mW
Thermal resi stance from junct ion to ambient (Note.1)	$R_{\theta JA}$	550	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-65 to 150	

Note.1:Mounted on an FR4 PCB, single-sided copper, mini pad.

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= 100 μA, I_E= 0	300			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA, I_B= 0	300			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μ A, I_C= 0	6			
Collector-base cut-off current	I_{CBO}	V_{CB}= 200 V , I_E= 0			100	nA
Emitter cut-off current	I_{EBO}	V_{EB}= 6V , I_C=0			100	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=20 mA, I_B=2mA			0.5	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=20 mA, I_B=2mA			0.9	
DC current gain	$h_{FE(1)}$	V_{CE}= 10V, I_C= 1mA	60			
	$h_{FE(2)}$	V_{CE}= 10V, I_C= 10mA	100		200	
	$h_{FE(3)}$	V_{CE}= 10V, I_C= 30mA	70			
Collector output capacitance	C_{ob}	V_{CB}= 20V, I_E= 0,f=1MHz			3	pF
Transition frequency	f_T	V_{CE}= 20V, I_C= 10mA,f=100MHz	50			MHz

■ Marking

Marking	1D

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■ Typical Characterisitics

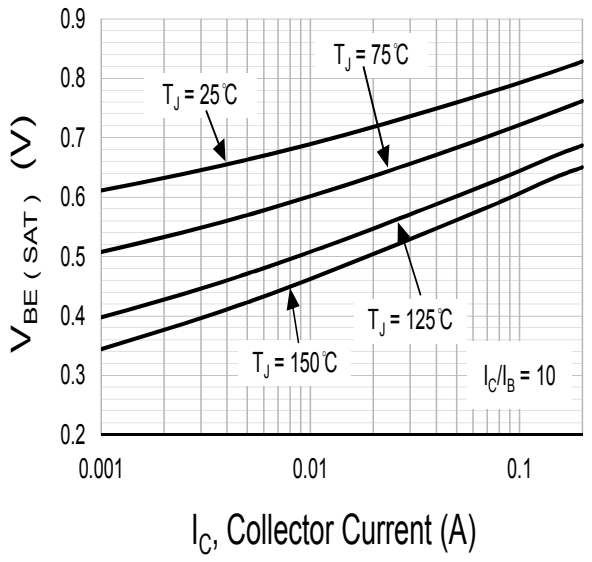

Fig.1 Typical Base-Emitter Saturation Voltage

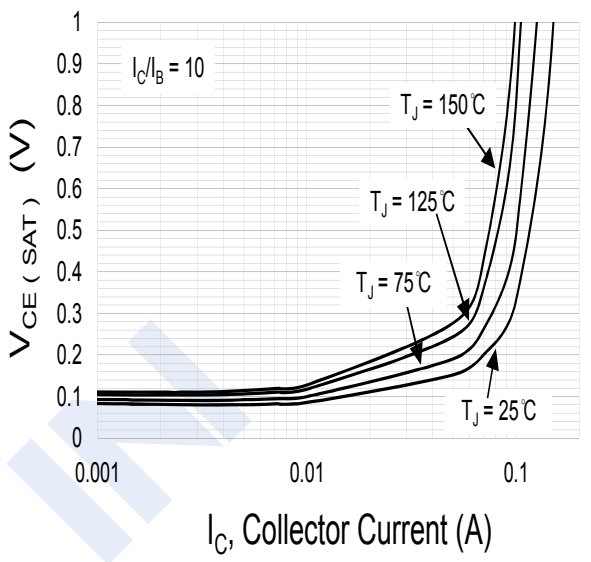

Fig.2 Typical Collector-Emitter Saturation Voltage

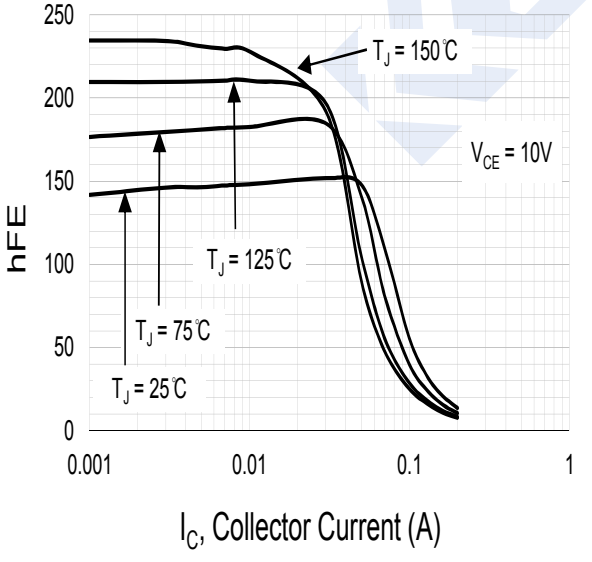

Fig.3 Typical DC Current Gain vs Collector Current

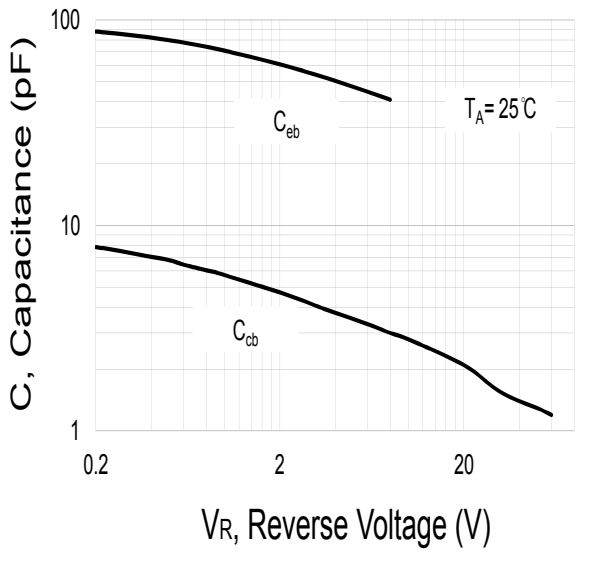

Fig.4 Typical Capacitance