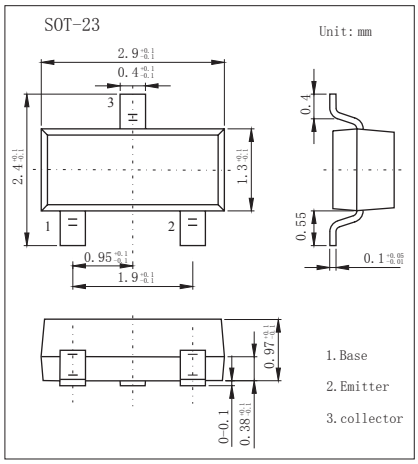
NPN Transistors

MMBTA42



■ Features

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

■ 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}	5	
Collector Current - Continuous	I_C	500	mA
Collector Power Dissipation	P_C	350	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	357	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature Range	Tstg	-55 to 150	

■ 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 uA, I_C= 0	5			
Collector-base cut-off current	I_{CBO}	V_{CB}= 200 V , I_E= 0			0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB}= 5V , I_C=0			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C= 20 mA, I_B= 2mA			0.2	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C= 20mA, I_B= 2mA			0.9	
DC current gain	hfe（1）	V_{CE}= 10V, I_C= 1mA	60			
	hfe（2）	V_{CE}= 10V, I_C= 10mA	100		300	
	hfe（3）	V_{CE}= 10V, I_C= 30mA	60			
Transition frequency	f_T	V_{CE}= 20V, I_C= 10mA, f=30MHz	50			MHz

■ Classification of $h_{fe(2)}$

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

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■ Typical Characterisitics