

■ NPN Transistors



■ Features

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

■ Simplified outline(SOT-23)

■ Absolute Maximum Ratings Ta = 25°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 _{θJA}	357	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{stg}	-55 to 150	

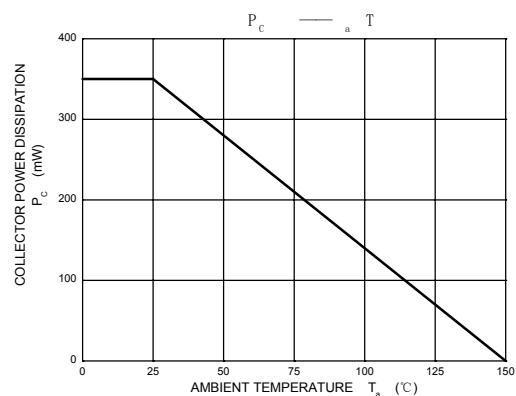
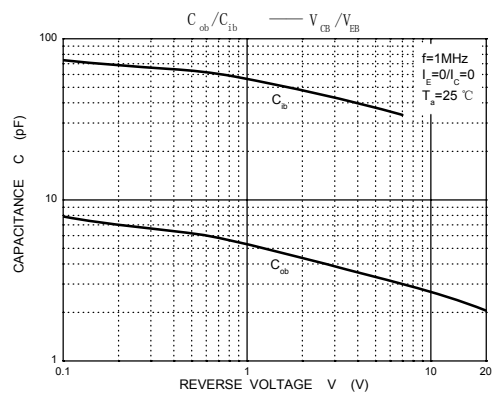
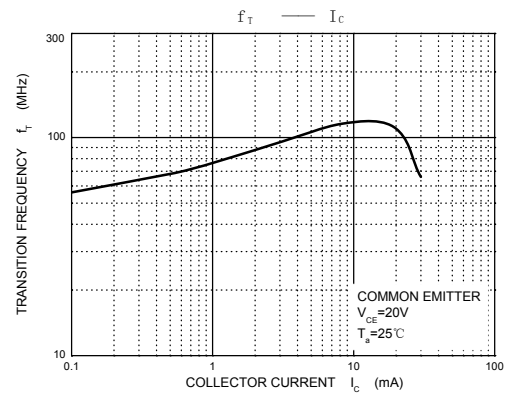
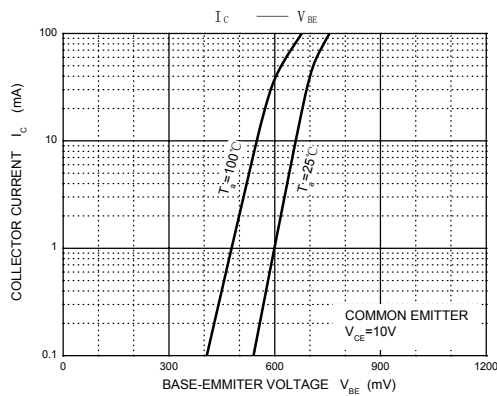
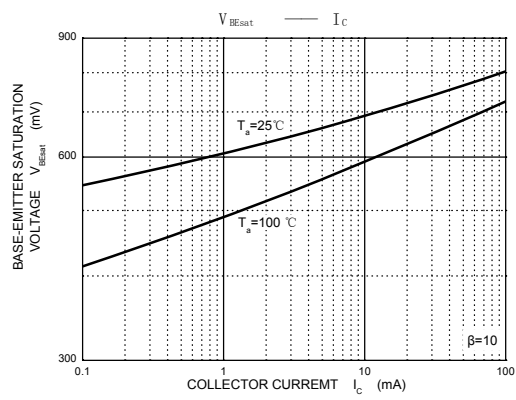
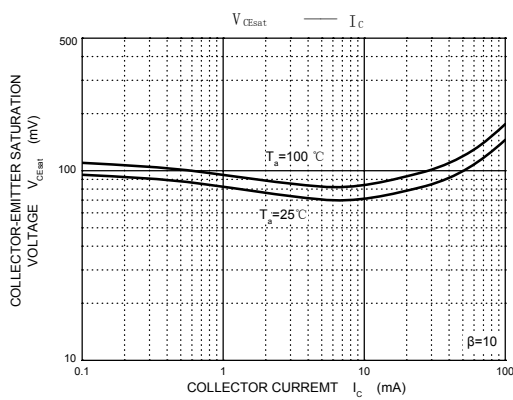
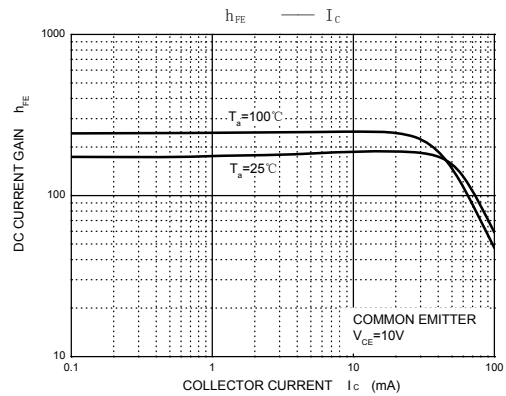
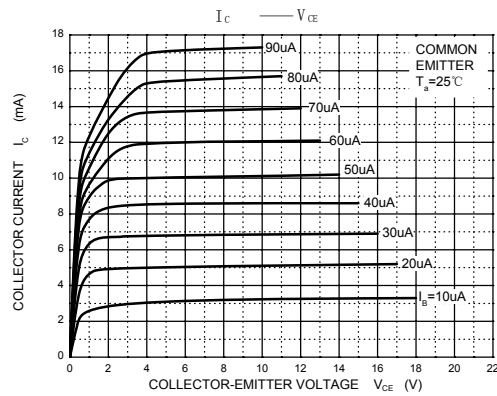
■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{CB0}	I _c = 100 μA, I _E = 0	300			V
Collector- emitter breakdown voltage	V _{CE0}	I _c = 1 mA, I _B = 0	300			
Emitter - base breakdown voltage	V _{EB0}	I _E = 100 μA, I _c = 0	5			
Collector-base cut-off current	I _{CB0}	V _{CB} = 200 V, I _E = 0			0.1	μA
Emitter cut-off current	I _{EB0}	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	h _{fe} (1)	V _{CE} = 10V, I _c = 1mA	60			
	h _{fe} (2)	V _{CE} = 10V, I _c = 10mA	100		300	
	h _{fe} (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)

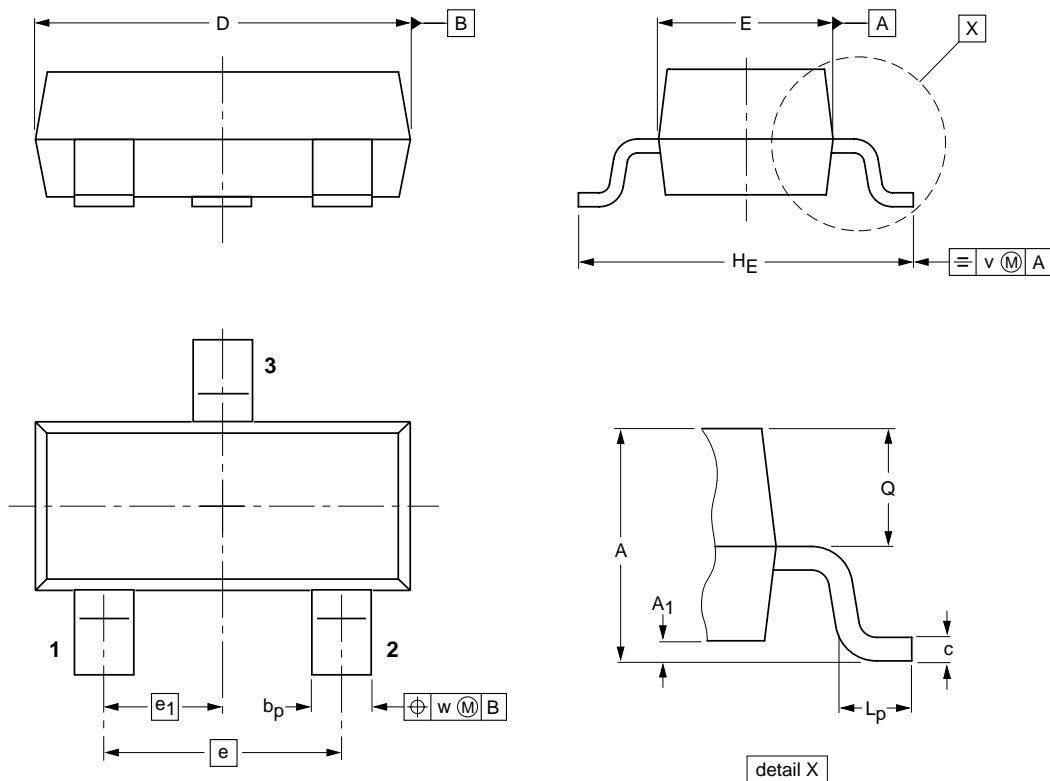
Type	MMBTA42	MMBTA42-L
Range	100-300	100-200
Marking	1D	

■ Typical Characteristics



Package Outline

SOT-23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max.	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

Summary of Packing Options

Package	Packing Description	Packing Quantity	Industry Standard
SOT-23	Tape/Reel, 7" reel	3000	EIA-481-1