

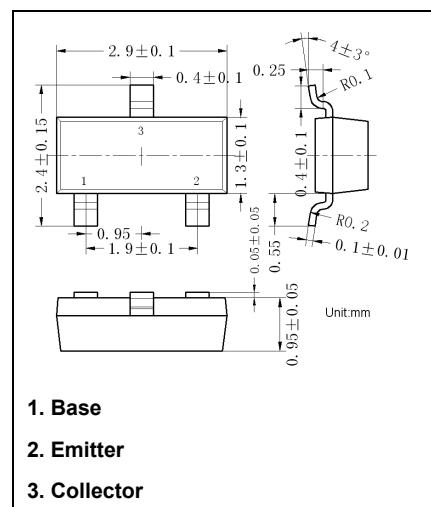
SOT-23 Plastic-Encapsulate Transistors

MMBTA42 NPN Transistors

Features

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

Marking: 1D



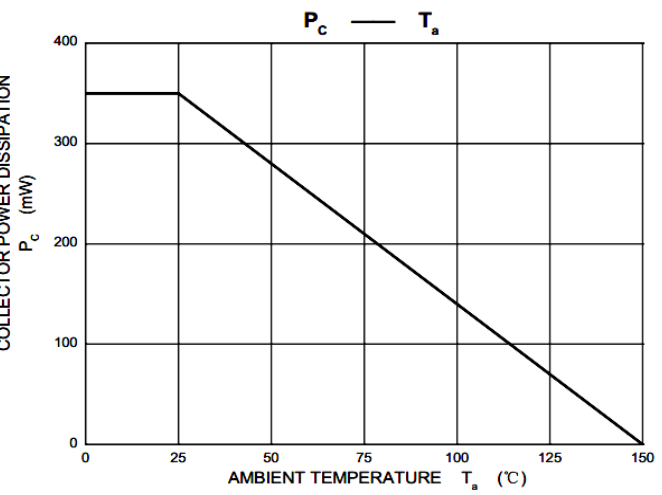
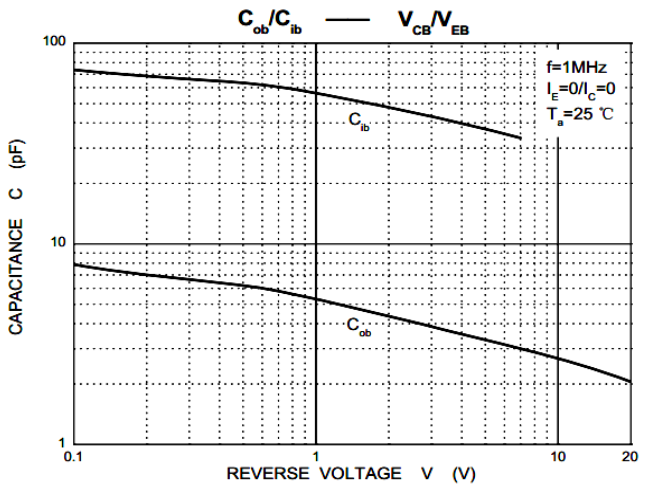
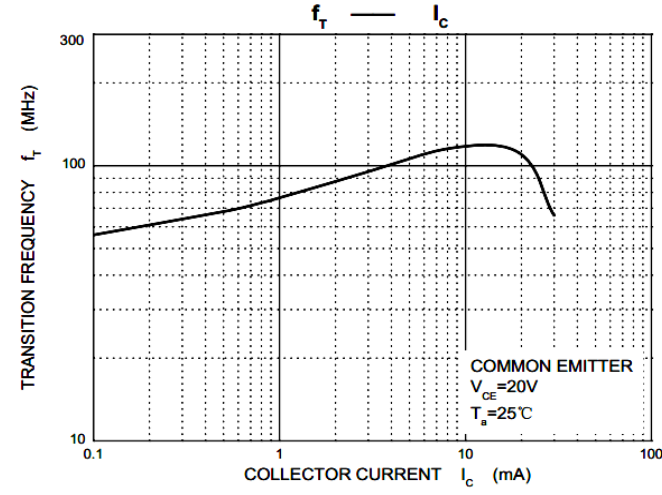
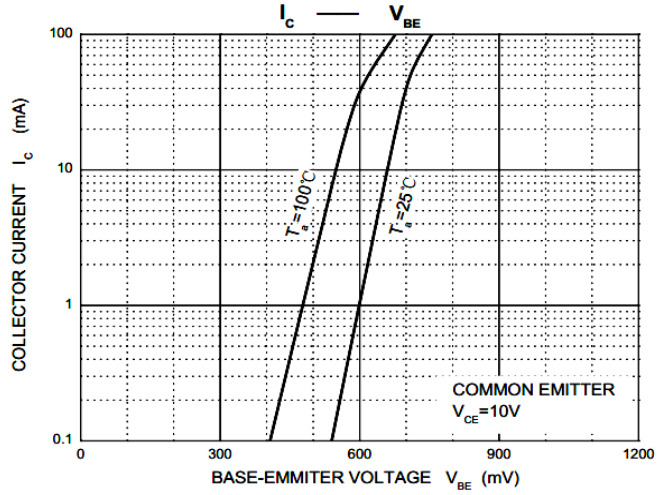
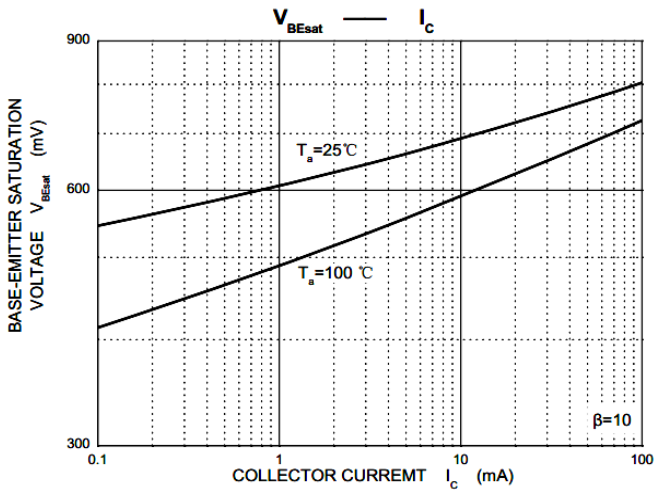
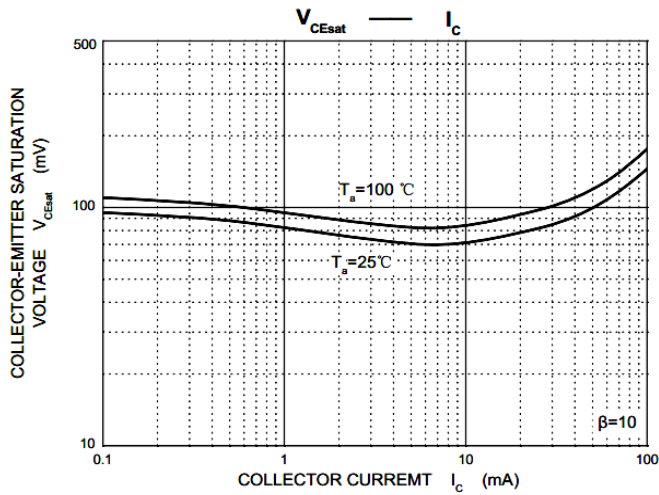
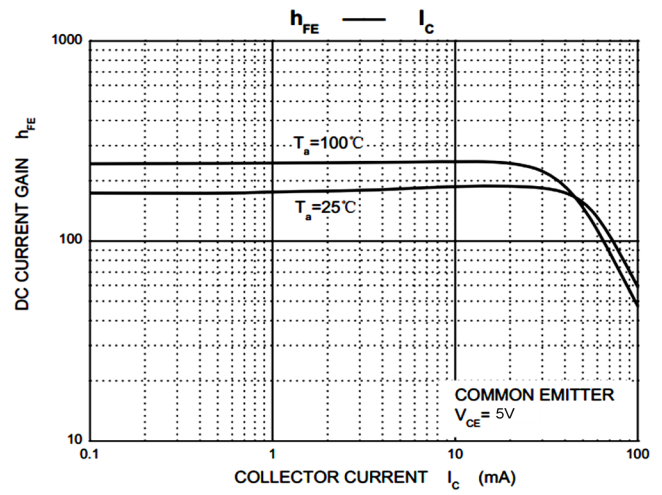
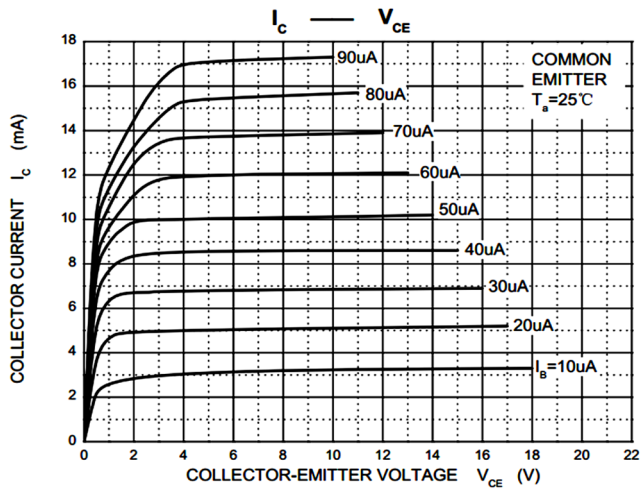
Maximum Ratings (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{CB0}	Collector Base Voltage	300	V
V _{CEO}	Collector Emitter Voltage	300	V
V _{EBO}	Emitter Base Voltage	5	V
I _c	Collector Current -Continuous	0.3	A
I _{CM}	Collector Current-Peak	0.5	A
P _c	Collector Power Dissipation	350	mW
R _{θJA}	Thermal Resistance, junction to Ambient	357	°C/W
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature	- 55 to +150	°C

Electrical Characteristics (T_a=25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V _{(BR)CBO}	Collector-base breakdown voltage	I _c = 100μA, I _E = 0	300			V
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _c = 1mA, I _B = 0	300			V
V _{(BR)EBO}	Emitter-base breakdown voltage	I _E = 100μA, I _C = 0	5			V
I _{CBO}	Collector cut-off current	V _{CB} = 200V, I _E = 0			250	nA
I _{EBO}	Emitter cut-off current	V _{EB} = 5V, I _C = 0			100	nA
h _{FE(1)}	DC current gain	V _{CE} = 5V, I _C = 1mA	100			
h _{FE(2)}		V _{CE} = 5V, I _C = 10mA	100			
h _{FE(3)}		V _{CE} = 10V, I _C = 1mA	60			
h _{FE(4)}		V _{CE} = 10V, I _C = 10mA	100		200	
h _{FE(5)}		V _{CE} = 10V, I _C = 30mA	60			
V _{CE(sat)}	Collector-emitter saturation voltage	I _C = 20mA, I _B = 2mA			0.2	V
V _{BE(sat)}	Base-emitter saturation voltage	I _C = 20mA, I _B = 2mA			0.9	V
f _T	Transition frequency	V _{CE} =20V, I _C =10mA, f=30MHz	50			MHz

Typical Characteristics



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