

SOT-23 Plastic-Encapsulate Transistors

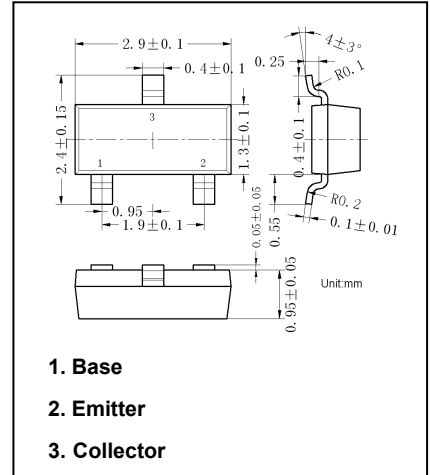
MMBT4401

NPN Transistor

Features

- Switching transistor

Marking: 2X



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

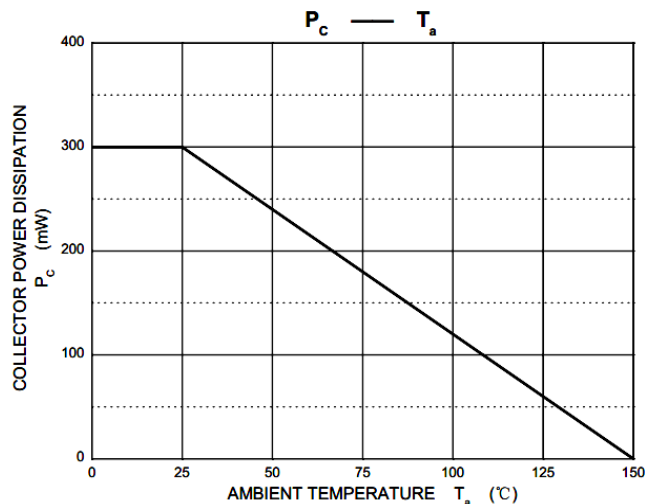
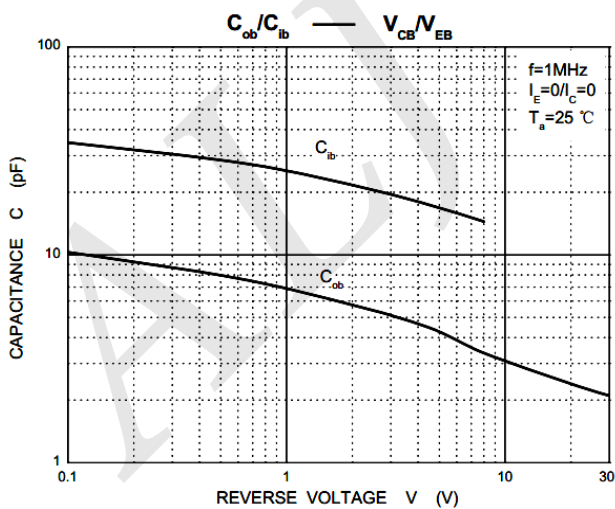
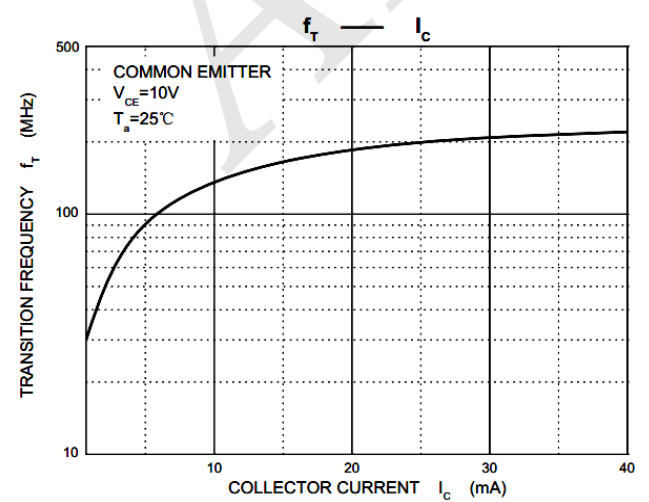
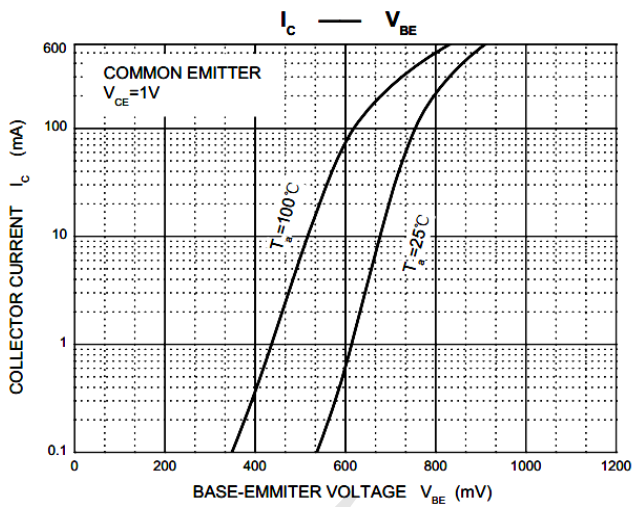
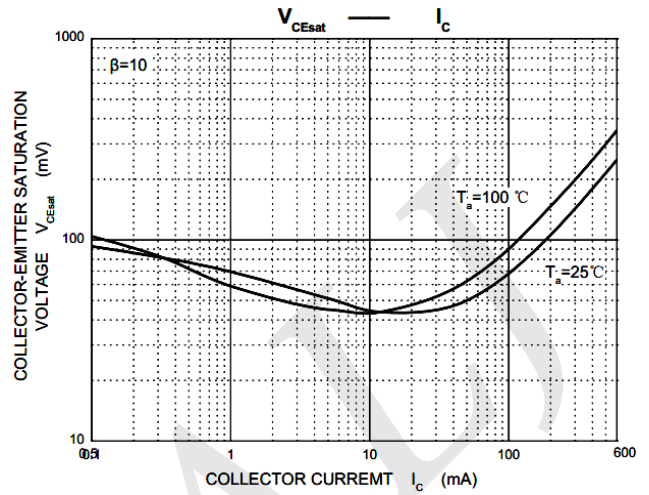
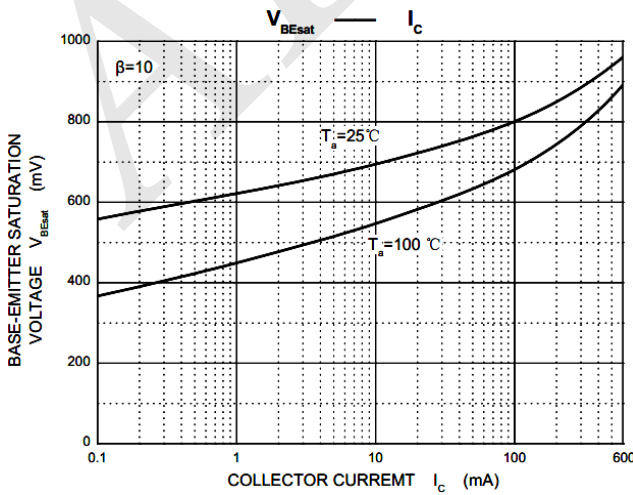
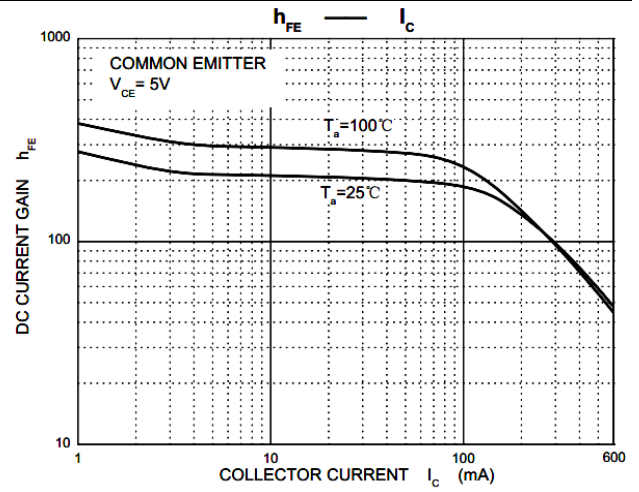
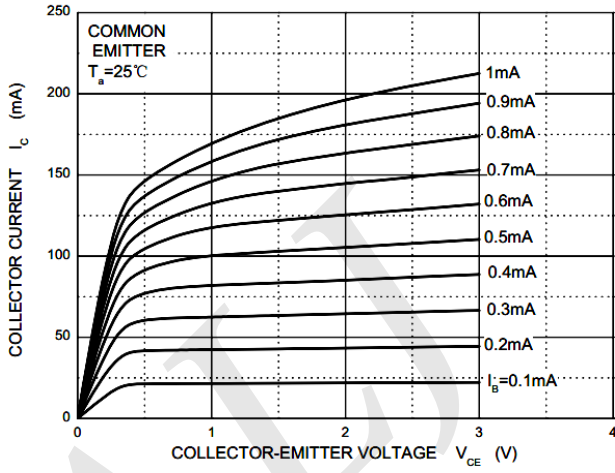
Symbol	Parameter	Value	Unit
V _{CEO}	Collector emitter voltage	60	V
V _{CBO}	Collector base voltage	40	V
V _{EBO}	Emitter base voltage	6	V
I _c	Collector current(DC)	0.6	A
P _c	Collector power dissipation	0.3	W
T _j	Junction temperature	150	°C
T _{stg}	Storage temperature	- 55 to +150	°C
R _{θJA}	Thermal Resistance From Junction To Ambient	417	°C/W

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

Symbol	Parameter	Test Conditions	Min	Max	Unit
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _C = 1mA, I _B = 0	40		V
V _{(BR)CBO}	Collector-base breakdown voltage	I _C = 100μA, I _E = 0	60		V
V _{(BR)EBO}	Emitter-base breakdown voltage	I _E = 100μA, I _C = 0	6		V
I _{CBO}	Collector cut off current	V _{CB} = 50V, I _E = 0		100	nA
I _{CEX}	Collector cut off current	V _{CE} = 35V, V _{EB} = 0.4V		100	nA
I _{EBO}	Emitter cut off current	V _{EB} = 5V, I _C = 0		100	nA
h _{FE}	Dc current gain	V _{CE} = 5V, I _C = 1mA	200		
		V _{CE} = 2V, I _C = 500mA	40		
		V _{CE} = 1V, I _C = 0.1mA	20		
		V _{CE} = 1V, I _C = 1mA	40		
		V _{CE} = 1V, I _C = 10mA	80		
		V _{CE} = 1V, I _C = 150mA	200	300	
V _{CE(sat)}	Collector emitter saturation voltage	I _C = 150mA, I _B = 15mA		0.4	V
		I _C = 500mA, I _B = 50mA		0.75	V
V _{BE(sat)}	Base-emitter saturation voltage	I _C = 150mA, I _B = 15mA		0.95	V
		I _C = 500mA, I _B = 50mA		1.2	V
f _T	Transition frequency	V _{CE} = 10V, I _C = 20mA f = 100MHz	250		MHz
t _d	Delay time	V _{CC} = 30V, V _{BE(off)} = -2V I _C = 150mA, I _{B1} = 15mA		15	ns
t _r	Rise time			20	ns
t _s	Storage time	V _{CC} = 30V, I _C = 150mA I _{B1} = I _{B2} = 15mA		225	ns
t _f	Fall time			60	ns

Typical Characteristics

Static Characteristic



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