

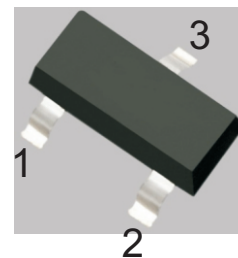
MMBT4401

NPN TRANSISTOR

FEATURES

- Switching Transistor

SOT-23



1.BASE
2.EMITTER
3.COLLECTOR

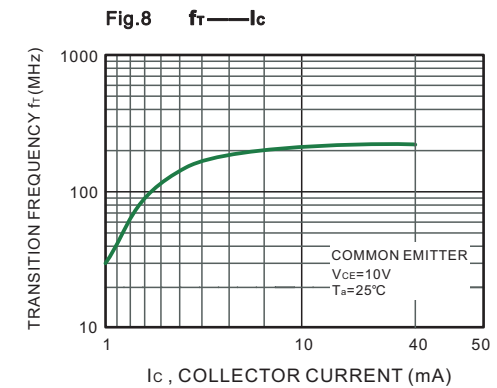
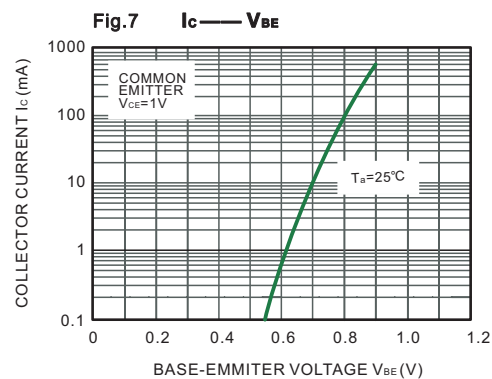
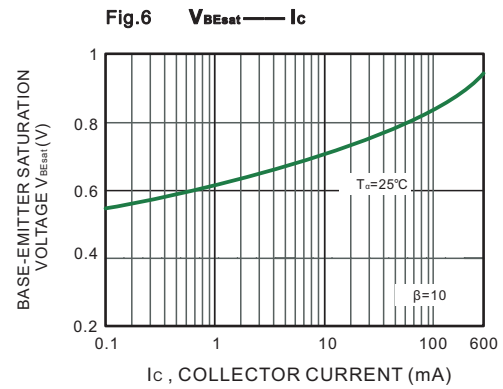
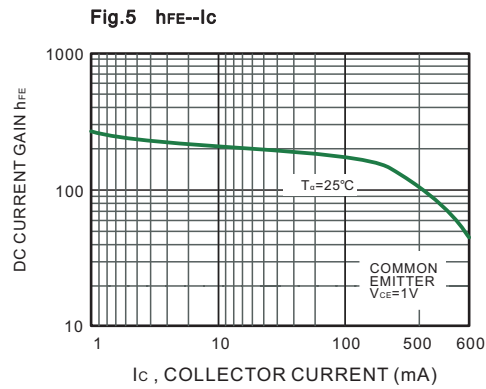
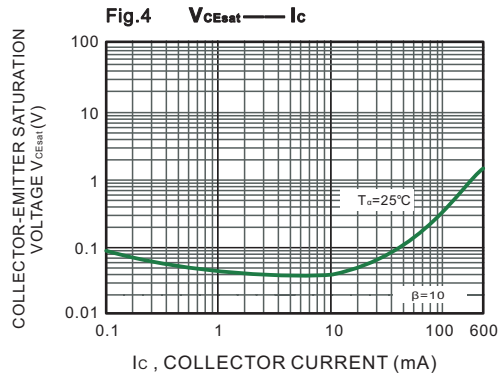
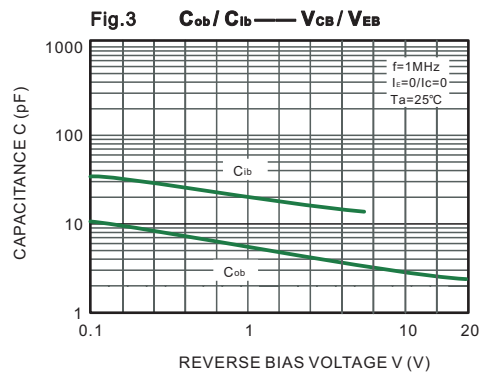
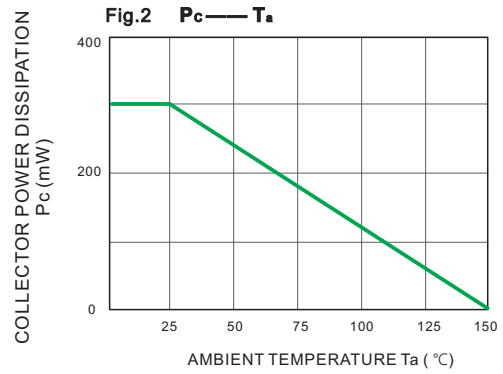
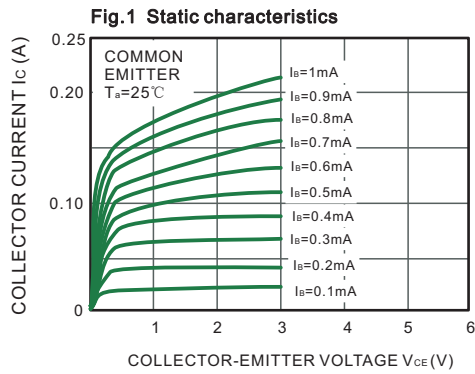
MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector–Base Voltage	V _{CB0}	60	V
Collector–Emitter Voltage	V _{CEO}	40	V
Emitter–Base Voltage	V _{EBO}	6	V
Collector Current — Continuous	I _c	600	mA
Collector Power Dissipation	P _c	300	mW
Thermal Resistance From Junction To Ambient	R _{thJA}	417	°C/W
Operation Junction and Storage Temperature Range	T _J , T _{stg}	-55~+150	°C

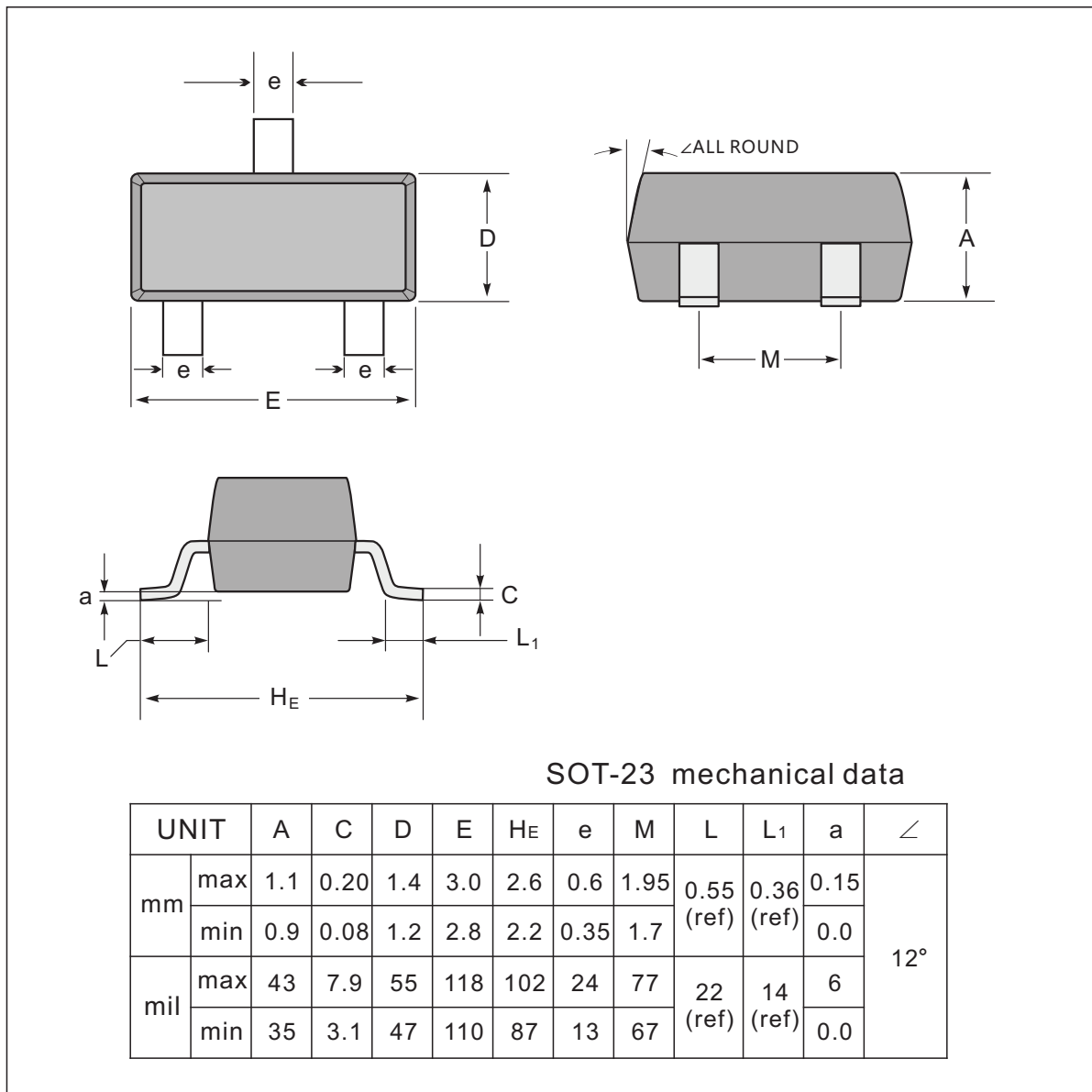
ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _c = 100uA, I _E = 0	60			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _c = 1 mA, I _B = 0	40			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E = 100uA, I _c = 0	6			V
Collector cut-off current	I _{CBO}	V _{CB} = 50V, I _E = 0			0.1	uA
Collector cut-off current	I _{CEx}	V _{CE} = 35V, V _{EB} = 0.4V			0.1	uA
Emitter cut-off current	I _{EBO}	V _{EB} = 5V, I _c = 0			0.1	uA
DC current gain	h _{FE1}	V _{CE} = 1V, I _c = 0.1mA	20			
	h _{FE2}	V _{CE} = 1V, I _c = 1mA	40			
	h _{FE3}	V _{CE} = 1V, I _c = 10mA	80			
	h _{FE4}	V _{CE} = 1V, I _c = 150mA	100		300	
	h _{FE5}	V _{CE} = 2V, I _c = 500mA	40			
Collector-emitter saturation voltage	V _{CE(sat)}	I _c = 150mA, I _B = 15mA			0.4	V
		I _c = 500mA, I _B = 50mA			0.75	V
Base-emitter saturation voltage	V _{BE(sat)}	I _c = 150mA, I _B = 15mA			0.95	V
		I _c = 500mA, I _B = 50mA			1.2	V
Transition frequency	f _T	V _{CE} = 10V, I _c = 20mA, f = 100MHz	250			MHz
Delay time	t _d	V _{CC} = 30V, V _{BE(off)} = -2V I _c = 150mA, I _{B1} = 15mA			15	ns
Rise time	t _r				20	ns
Storage time	t _s	V _{CC} = 30V, I _c = 150mA I _{B1} = I _{B2} = 15mA			225	ns
Fall time	t _f				60	ns

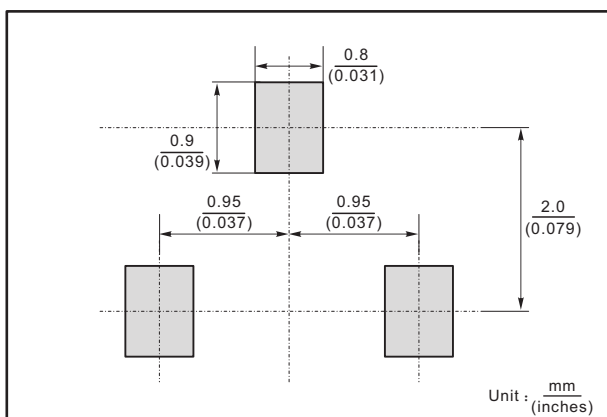
TYPICAL CHARACTERISTICS



SOT-23 Package Outline Dimensions



The recommended mounting pad size



Marking

Type number	Marking code
MMBT4401	2X