

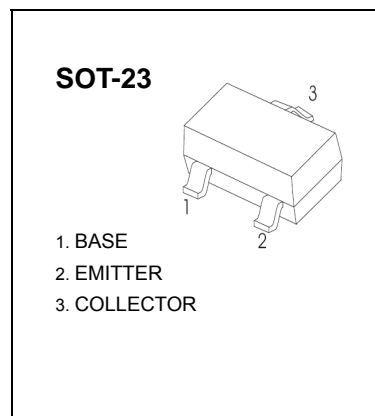
SOT-23 Plastic-Encapsulate Transistors

MMBT4401 TRANSISTOR (NPN)

FEATURES

- Switching Transistor

MARKING:2X



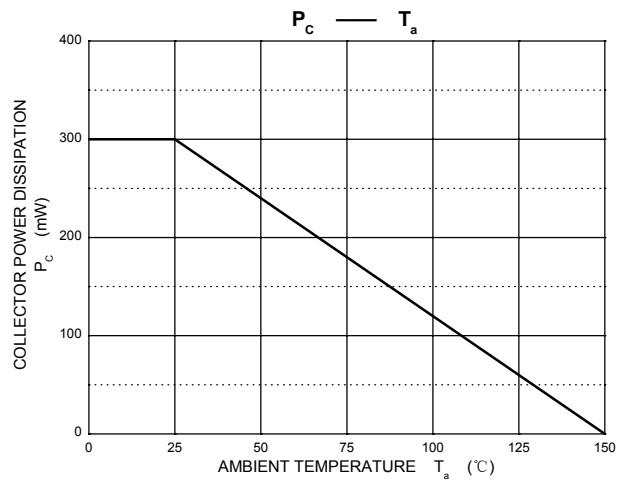
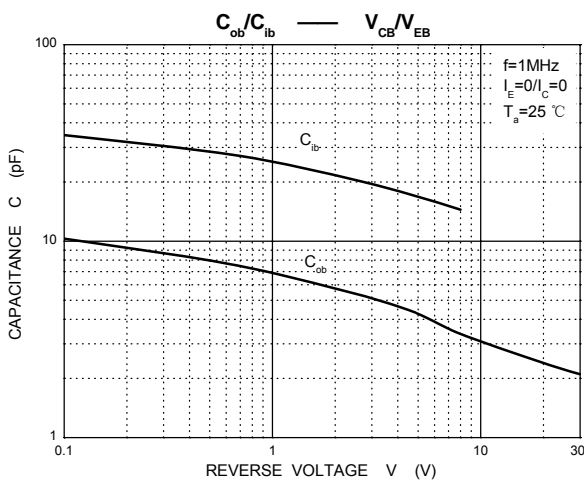
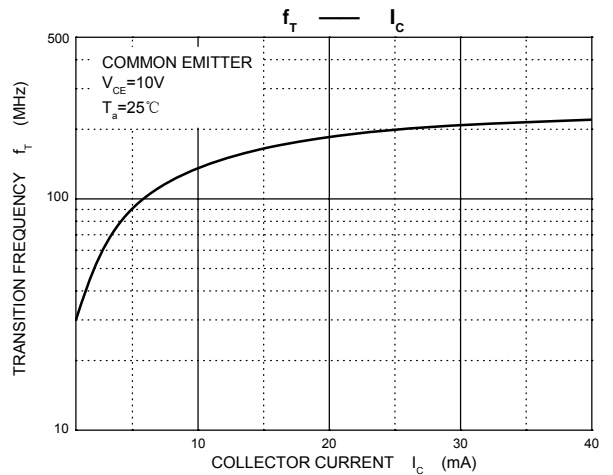
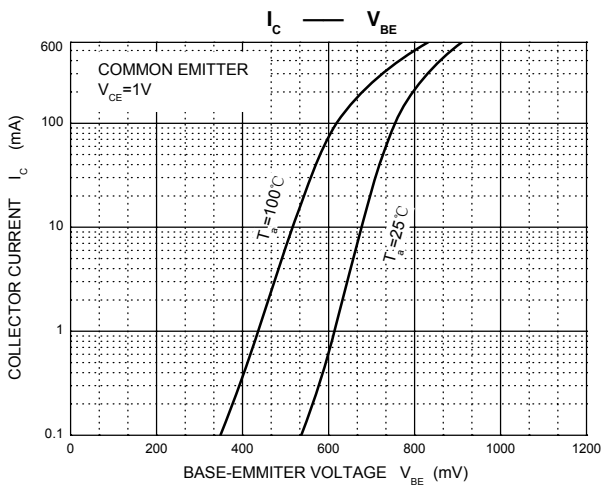
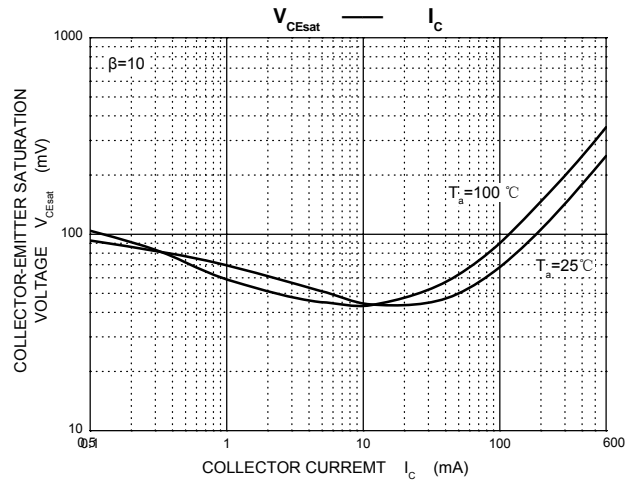
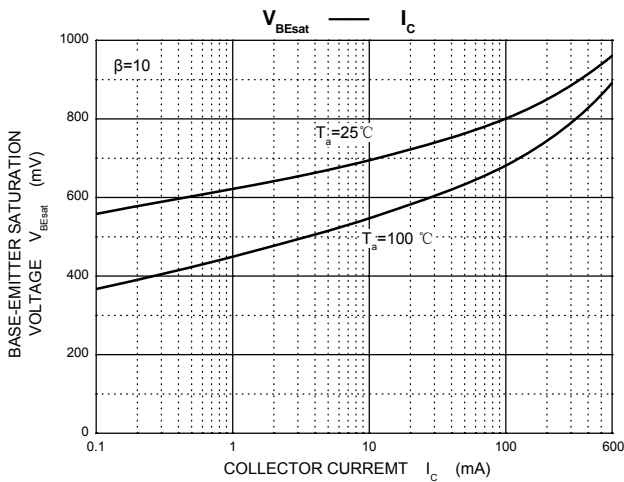
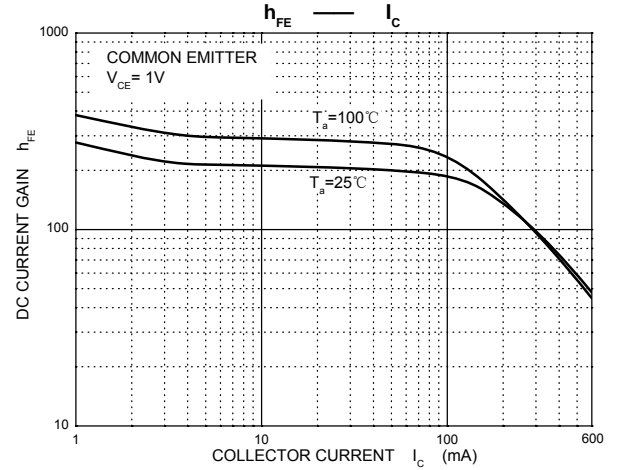
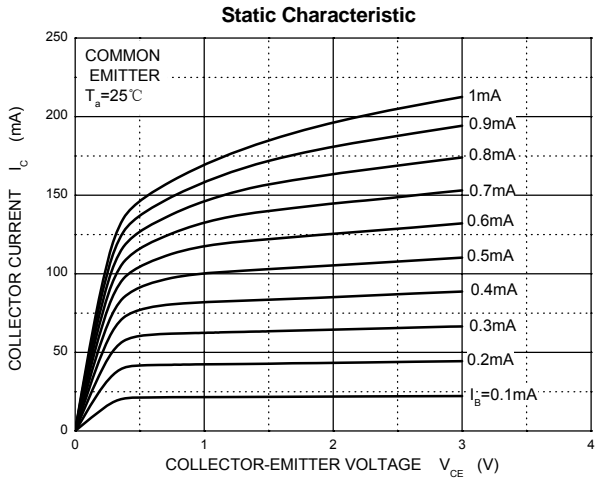
MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{CB0}	Collector-Base Voltage	60	V
V _{CEO}	Collector-Emitter Voltage	40	V
V _{EBO}	Emitter-Base Voltage	6	V
I _C	Collector Current	600	mA
P _C	Collector Power Dissipation	300	mW
R _{θJA}	Thermal Resistance From Junction To Ambient	417	°C/W
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55~+150	°C

ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

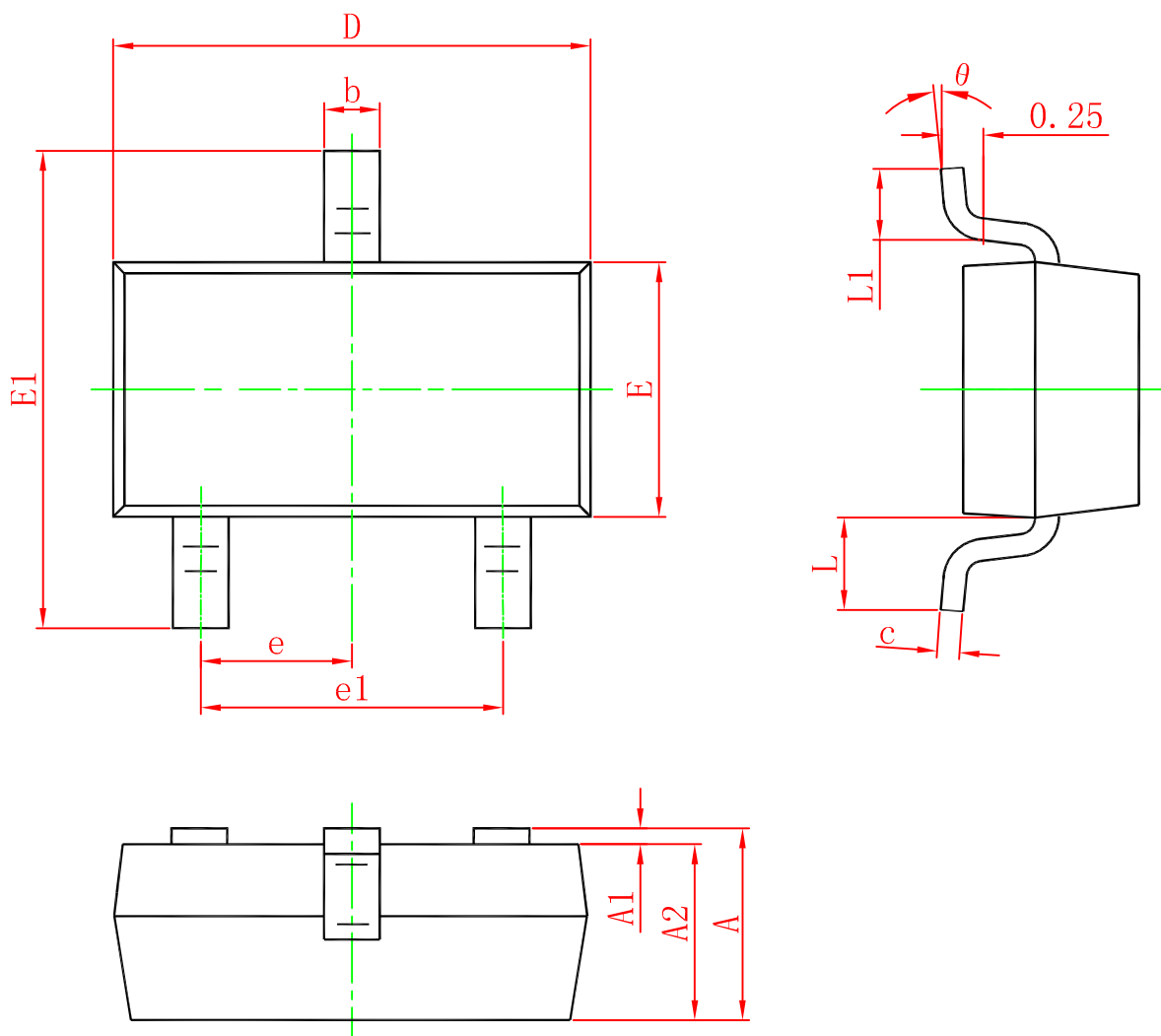
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =100μA, I _E =0	60			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =1mA, I _B =0	40			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =100μA, I _C =0	6			V
Collector cut-off current	I _{CEO}	V _{CE} =30V, I _B =0			100	nA
Collector cut-off current	I _{CBO}	V _{CB} = 50V, I _E =0			100	nA
Emitter cut-off current	I _{EBO}	V _{EB} =5V, I _C =0			100	nA
DC current gain	h _{FE}	V _{CE} =1V, I _C =150mA	100		300	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =150mA, I _B =15mA			0.4	V
Collector-emitter saturation voltage	V _{BE(sat)}	I _C =150mA, I _B =15mA			0.95	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,			15	ns
Rise time	t _r	I _{B1} =15mA			20	ns
Storage time	t _s	V _{CC} =30V, I _C =150mA, I _{B1} = I _{B2} =15mA			225	ns
Fall time	t _f				30	ns

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SOT-23 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°