

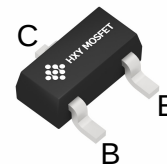


Features

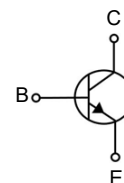
- Collector Current: $I_C=0.6A$
- Power Dissipation of 300mw

Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
MMBT4401	SOT-23	2X	3000



SOT-23



Maxmim Ratings (Ta=25 unless otherwise noted)

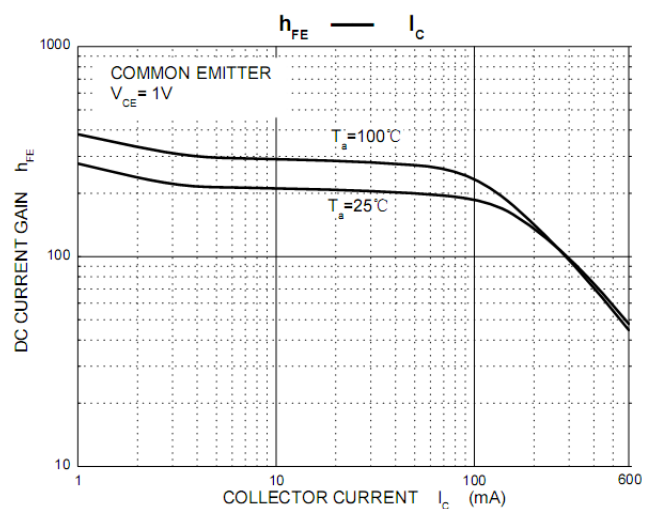
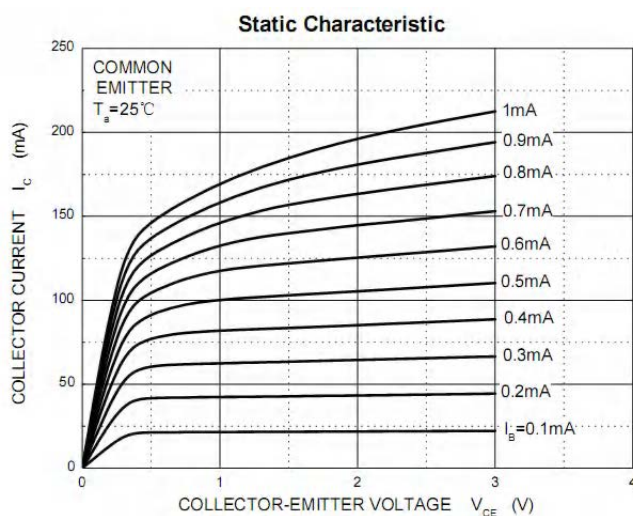
Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	600	mA
Collector Power Dissipation	P_C	300	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	417	°C/W
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55~+150	°C

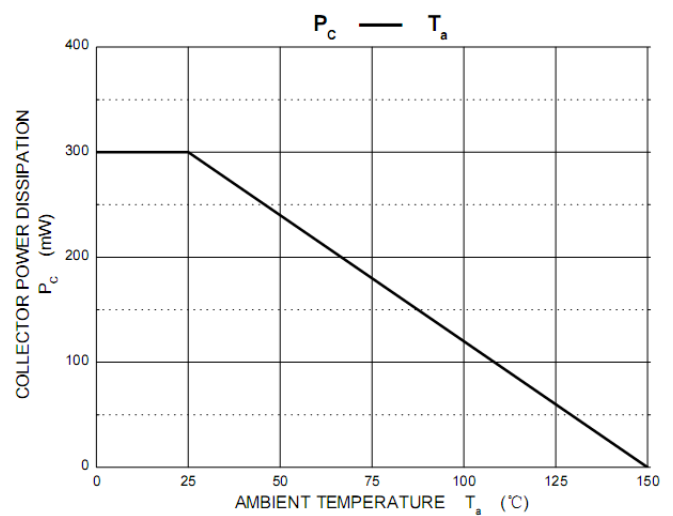
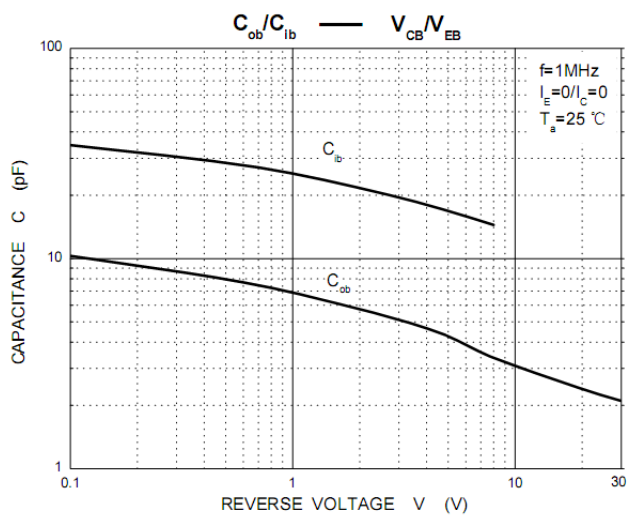
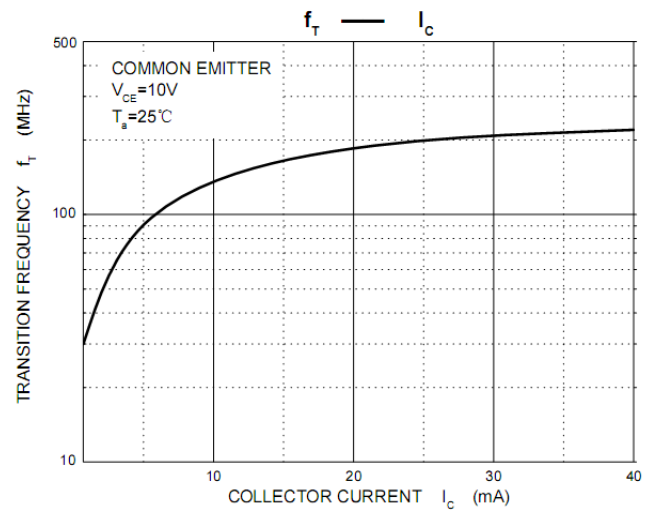
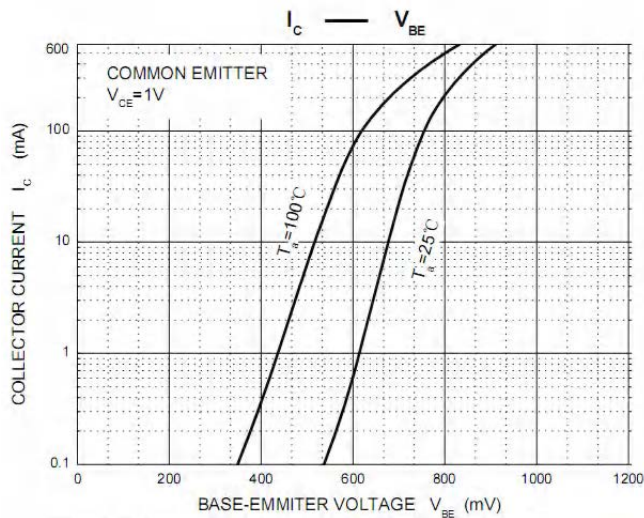
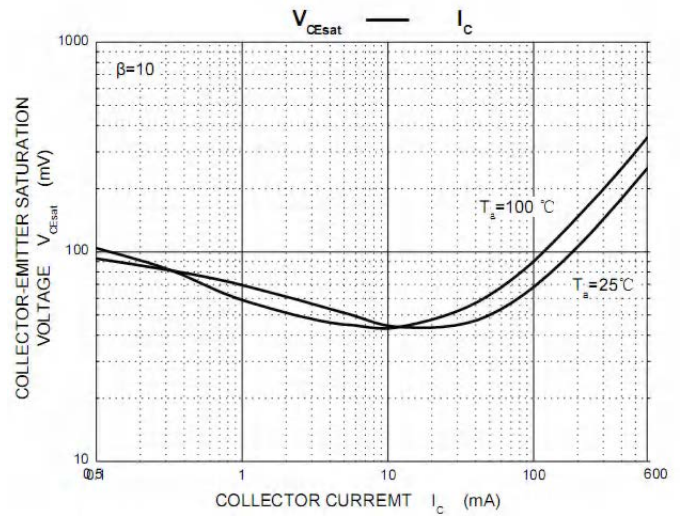
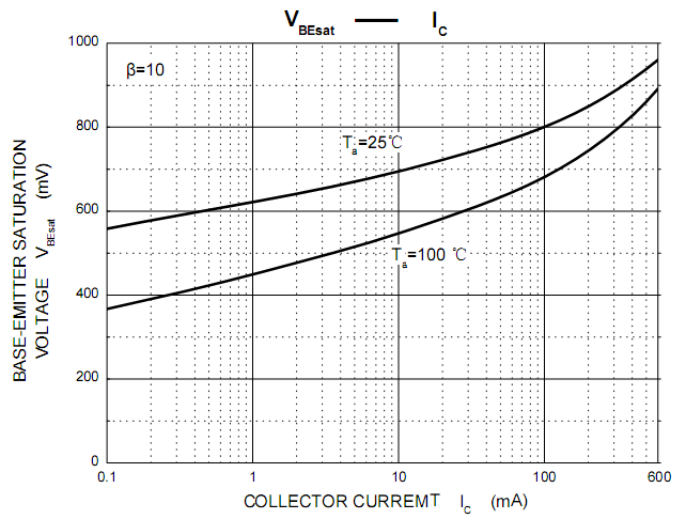


Electrcal Charcteristics ($T_a=25$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu A, I_C=0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB}=50V, I_E=0$			0.1	μA
Collector cut-off current	I_{CEX}	$V_{CE}=35V, V_{EB}=0.4V$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=5V, I_C=0$			0.1	μA
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	$V_{CC}=30V, V_{BE(off)}=-2V$			15	ns
Rise time	t_r	$I_C=150mA, I_B=15mA$			20	ns
Storage time	t_s	$V_{CC}=30V, I_C=150mA$			225	ns
Fall time	t_f	$I_{B1}=I_{B2}=15mA$			60	ns

Typical Characteristics







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°

SOT-23 Suggested Pad Layout



Note:
1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.



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