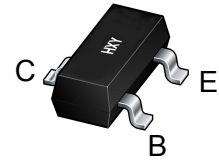




## FEATURES

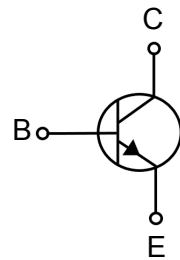
- Collector Current:  $I_C=0.6A$
- Power Dissipation of 300mw



SOT-23

## Package Marking and Ordering Information

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



## MAXIMUM RATINGS (Ta=25 unless otherwise noted)

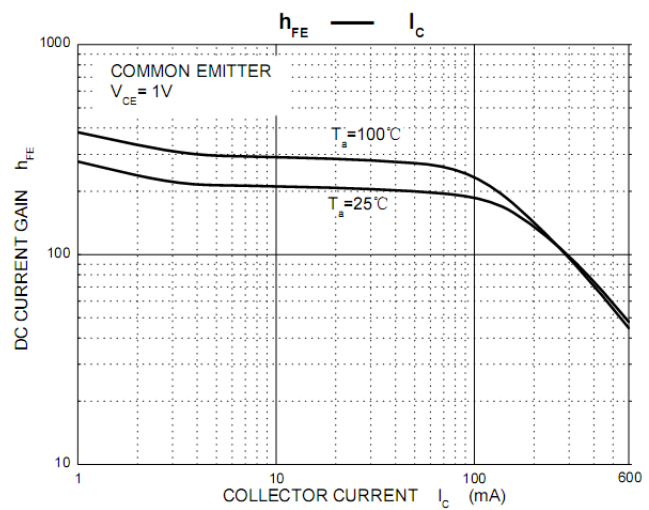
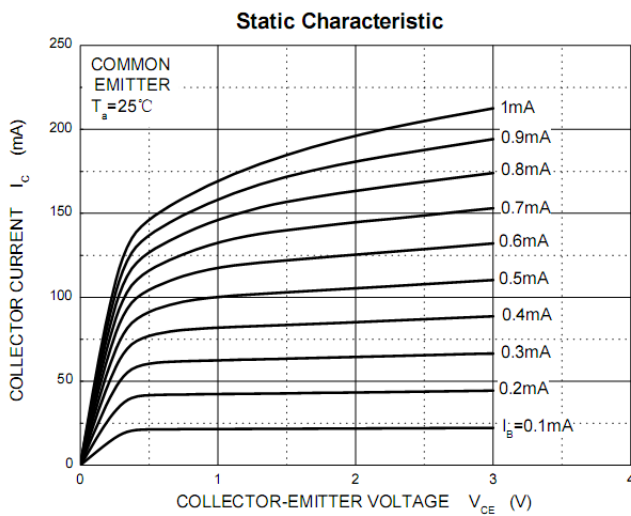
Parameter	Symbol	Limit	Unit
Collector-Base Voltage	$V_{CBO}$	60	V
Collector-Emitter Voltage	$V_{CEO}$	40	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	600	mA
Collector Power Dissipation	$P_C$	300	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	417	$^{\circ}C/W$
Junction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

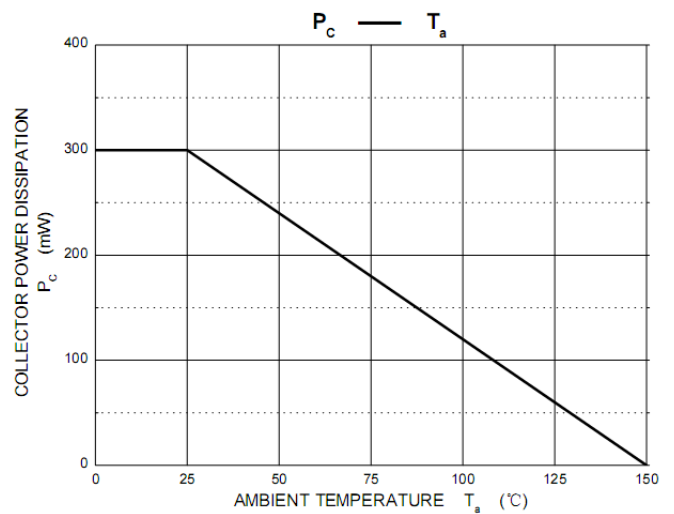
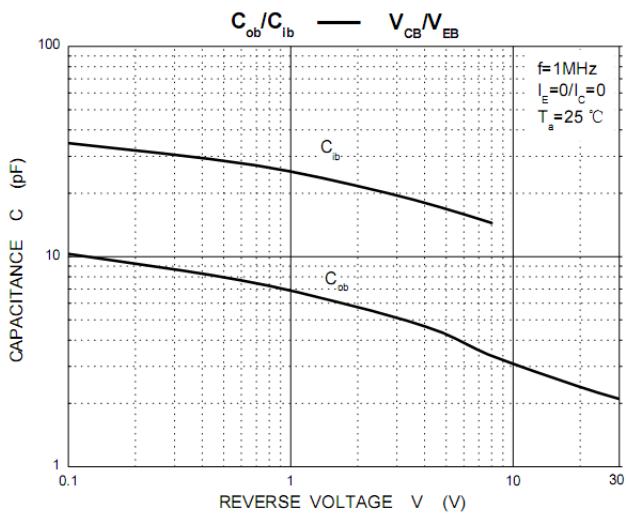
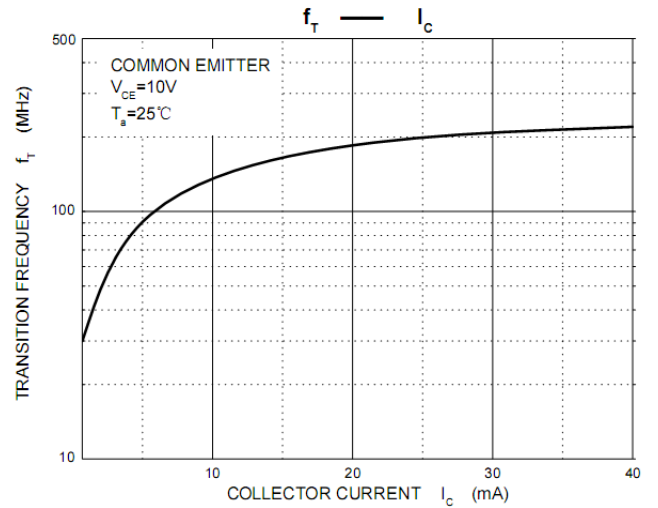
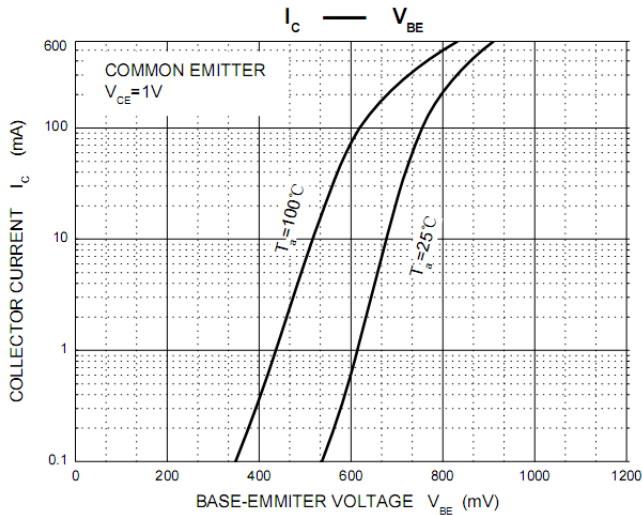
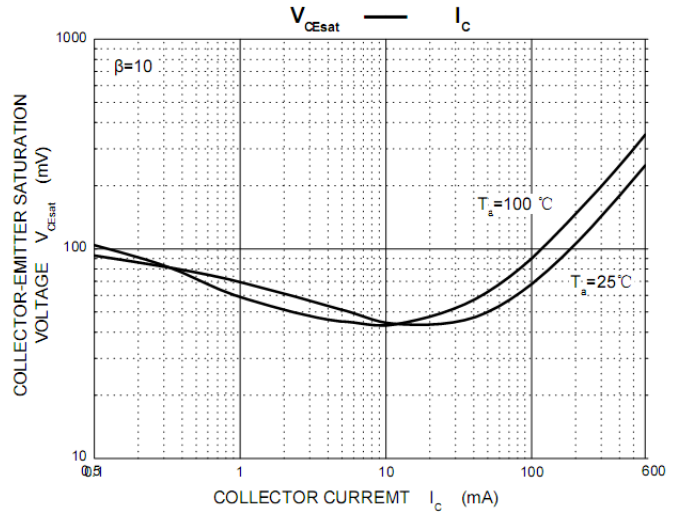
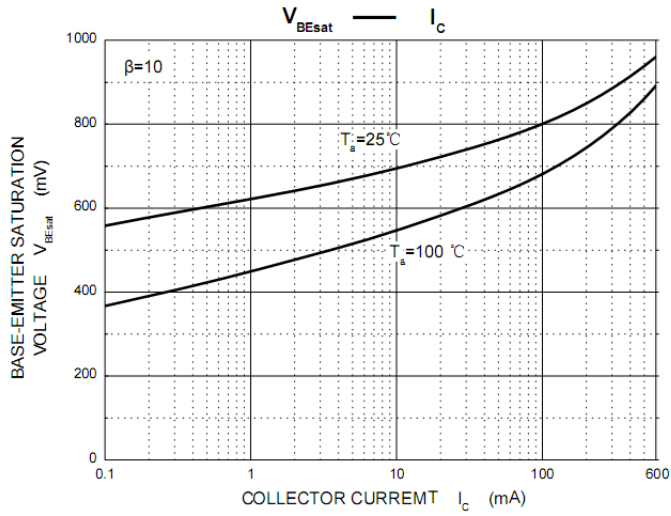


**ELECTRICAL CHARACTERISTICS (Ta=25 unless otherwise specified)**

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	$\mu A$
Collector cut-off current	$I_{CEX}$	$V_{CE}=35V, V_{EB}=0.4V$			0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=5V, I_C=0$			0.1	$\mu A$
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	$t_r$	$I_C=150mA, I_{B1}=15mA$			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

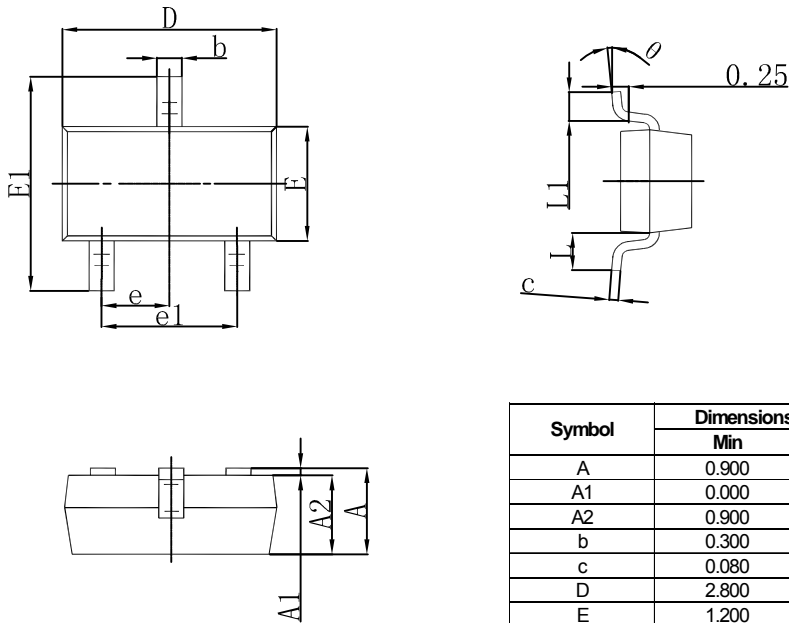
**Typical Characteristics**





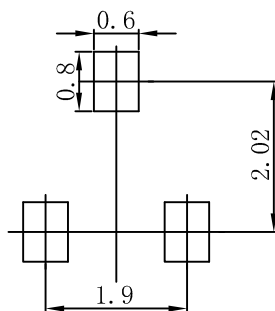


### SOT-23 Package Outline Dimensions



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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