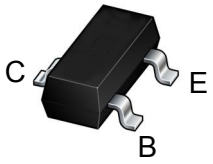
MMBTA44

FEATURES

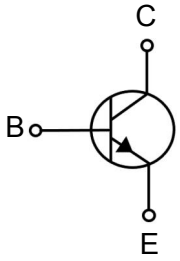
- Collector Current: I_C=0.2A
- Power Dissipation of 350mw



SOT-23

Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
MMBTA44	SOT-23		3000



MAXIMUM RATINGS (Ta=25℃ unless otherwise noted)

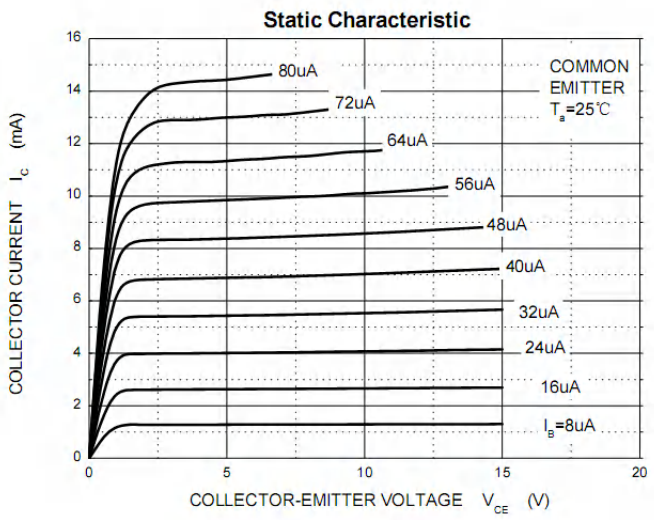
Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	350	V
Collector-Emitter Voltage	V_{CEO}	350	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	200	mA
Collector Power Dissipation	P_C	350	mW
Thermal Resistance From Junction To Ambient	$R_{\Theta JA}$	357	℃/W
Junction Temperature	T_j	150	℃
Storage Temperature	T_{stg}	-55～+150	℃

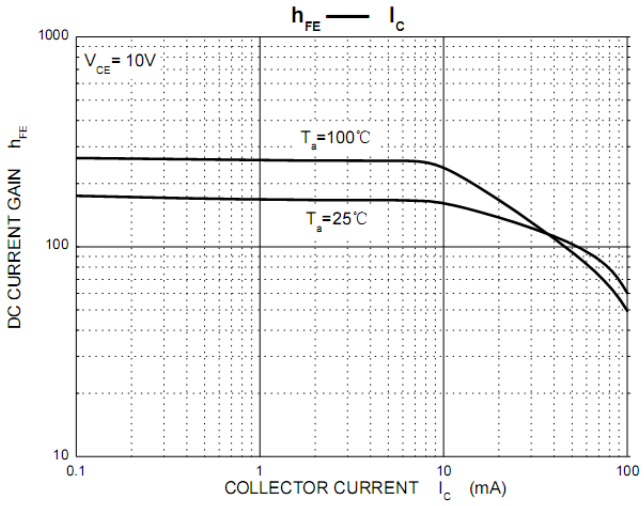
ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

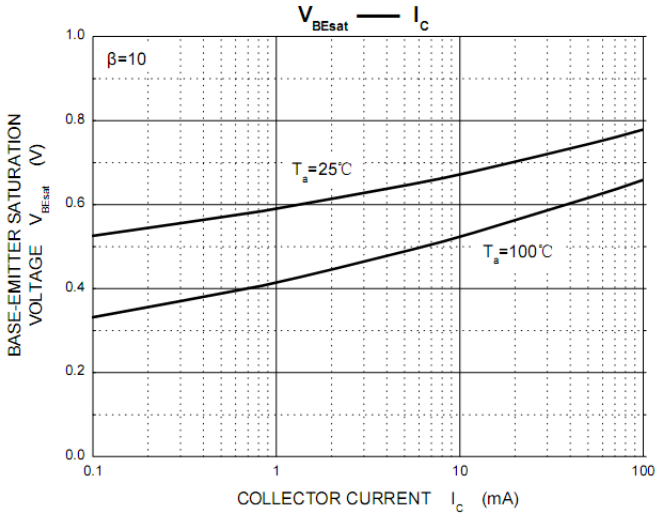
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μA, I_E=0	350			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$*	I_C=1mA, I_B=0	350			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	6			V
Collector cut-off current	I_{CBO}	V_{CB}=300V, I_E=0			0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=4V, I_C=0			0.1	μA
DC current gain	$h_{FE(1)}$ *	V_{CE}=10V, I_C=1mA	40			
	$h_{FE(2)}$ *	V_{CE}=10V, I_C=10mA	50		200	
	$h_{FE(3)}$ *	V_{CE}=10V, I_C=50mA	45			
	$h_{FE(4)}$ *	V_{CE}=10V, I_C=100mA	40			
Collector-emitter saturation voltage	$V_{CE(sat)1}$*	I_C=1mA, I_B=0.1mA			0.4	V
	$V_{CE(sat)2}$*	I_C=10mA, I_B=1mA			0.5	V
	$V_{CE(sat)3}$*	I_C=50mA, I_B=5mA			0.75	V
Base-emitter saturation voltage	$V_{BE(sat)}$*	I_C=10mA, I_B=1mA			0.75	V
Collector output capacitance	C_{ob}	V_{CB}=20V, I_E=0, f=1MHz			7	pF
Emitter input capacitance	C_{ib}	V_{EB}=0.5V, I_C=0, f=1MHz			130	pF
Transition frequency	f_T	V_{CE}=20V, I_C=10mA,f=30MHz	50			MHz

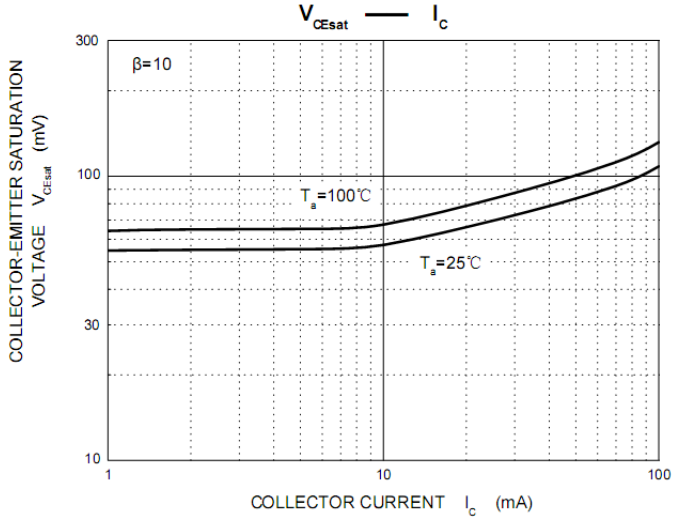
*Pulse test: pulse width ≤300μs, duty cycle≤ 2.0%.

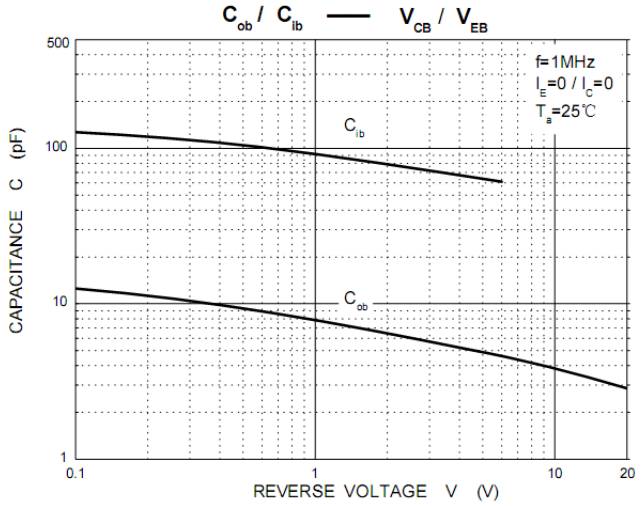
Typical Characteristics

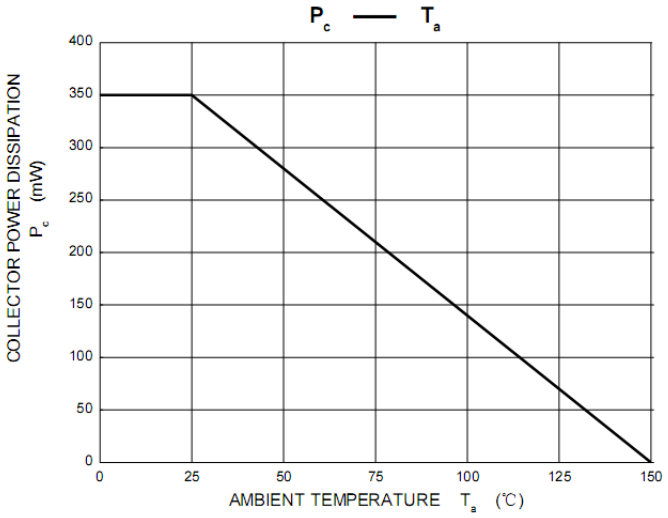




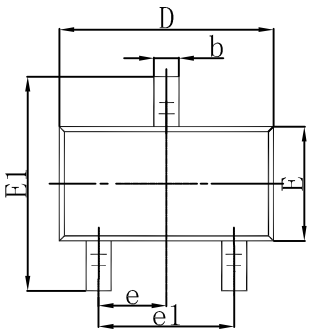

VBEsat — IC
β=10
Ta=25℃
Ta=100℃
BASE-EMITTER SATURATION VOLTAGE VBEsat (V)
1.0
0.8
0.6
0.4
0.2
0.0
0.1
1
10
100
COLLECTOR CURRENT IC (mA)

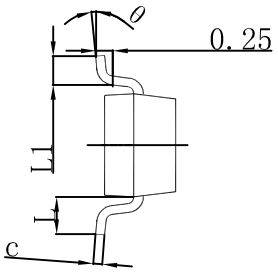

VCEsat — IC
β=10
Ta=100℃
Ta=25℃
COLLECTOR-EMITTER SATURATION VOLTAGE VCEsat (mV)
300
100
30
10
1
10
100
COLLECTOR CURRENT IC (mA)

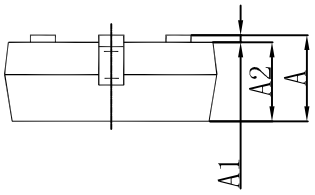

Cob / Cib — VCB / VEB
f=1MHz
IE=0 / IC=0
Ta=25℃
Cib
Cob
CAPACITANCE C (pF)
500
100
10
1
0.1
1
10
20
REVERSE VOLTAGE V (V)


Pc — Ta
COLLECTOR POWER DISSIPATION Pc (mW)
400
350
300
250
200
150
100
50
0
0
25
50
75
100
125
150
AMBIENT TEMPERATURE Ta (℃)

SOT-23 Package Outline Dimensions

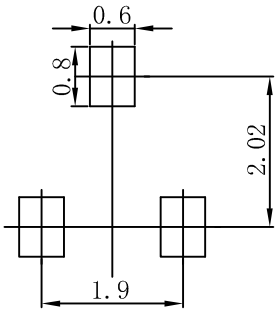






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 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:± 0.05mm.
3.The pad layout is for reference purposes only.

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