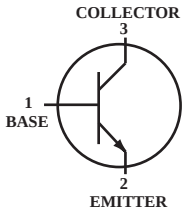
WEITRON

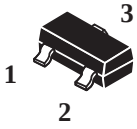
MMBTA44

High-Voltage NPN Transistor
Surface Mount

Lead(Pb)-Free



SOT-23



Maximum Ratings

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	400	Vdc
Collector-Base Voltage	V_{CBO}	450	Vdc
Emitter-Base VOltage	V_{EBO}	6.0	Vdc
Collector Current-Continuous	I_C	300	mAdc

Thermal Characteristics

Characteristics	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (1) TA=25°C	P_D	225	mW
Derate above 25°C		1.8	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate, (2) TA=25°C	P_D	350	mW
Derate above 25°C		2.8	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	357	°C/W
Junction and Storage, Temperature	$T_{J,Tstg}$	-55 to +150	°C

Device Marking

MMBTA44=3D

Electrical Characteristics (TA=25°C Unless Otherwise noted)

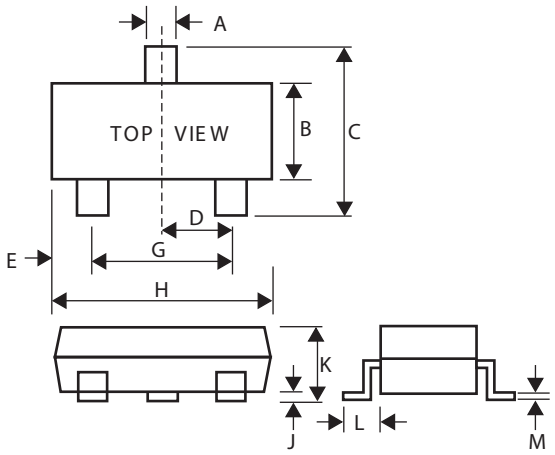
Characteristics	Symbol	Min	Max	Unit
Off Characteristics				
Collector-Emitter Breakdown Voltage(3) (I_C=1.0mAdc.I_B=0)	$V_{(BR)CEO}$	400	-	Vdc
Collector-Base Breakdown Voltage (I_C=100 uAdc, I_E=0)	$V_{(BR)CBO}$	450	-	Vdc
Emitter-Base Breakdown Voltage (I_E=10 uAdc, I_C=0)	$V_{(BR)EBO}$	6.0	-	Vdc
Base Cutoff Current (V_{CB}=400 Vdc, I_E=0)	I_{CBO}	-	100	nAdc
Emitter Cutoff Current V_{EB}=4V, I_C=0	I_{EBO}	-	100	nAdc

1.FR-5=1.0 x 0.75 x 0.062 in.
2.Alumina=0.4 x 0.3 x 0.024 in. 99.5% alumina.
3.Pulse Test:Pulse Width≦300 μS, Duty Cycle≦2.0%.

Electrical Characteristics (T_A=25 °C unless otherwise noted) (Countinued)

Characteristics	Symbol	Min	Max	Unit
On Characteristics				
DC Current Gain (I_C= 1.0 mAdc, V_{CE}=10Vdc) (I_C= 10 mAdc, V_{CE}= 10Vdc) (I_C= 50 mAdc, V_{CE}= 10Vdc) (I_C= 100 mAdc, V_{CE}= 10Vdc)	$H_{FE(1)}$ $H_{FE(2)}$ $H_{FE(3)}$ $H_{FE(4)}$	40 50 45 20	- 2.00 - -	-
Collector-Emitter Saturation Voltage(3) (I_C= 1.0 mAdc, I_B= 0.1 mAdc) (I_C= 10 mAdc, I_B= 1.0 mAdc) (I_C= 50 mAdc, I_B= 5.0 mAdc)	$V_{CE(sat)}$	-	0.40 0.50 0.75	Vdc
Base-Emitter Saturation Voltage(3) (I_C= 10 mAdc, I_B= 1.0 mAdc)	$V_{BE(sat)}$	-	0.75	Vdc
Current-Gain-Bandwidth Product (I_C= 10 mAdc, V_{CE}= 10 Vdc, f=10MHz)	f_T	20	-	MHz

SOT-23 Package Outline Dimension



SOT-23		
Dim	**Min**	**Max**
A	0.35	0.51
B	1.19	1.40
C	2.10	3.00
D	0.85	1.05
E	0.46	1.00
G	1.70	2.10
H	2.70	3.10
J	0.01	0.13
K	0.89	1.10
L	0.30	0.61
M	0.076	0.25