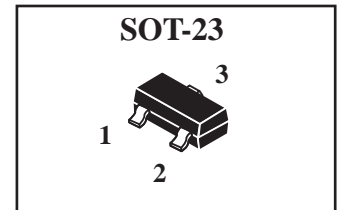
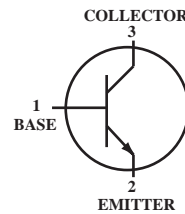


High-Voltage NPN Transistor Surface Mount

 Lead(Pb)-Free



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⁾ T _A =25 °C	P _D	225	mW
Derate above 25 °C		1.8	mW/°C
Thermal Resistance, Junction to Ambient	R _{θJA}	556	°C/W
Total Device Dissipation Alumina Substrate, ⁽²⁾ T _A =25 °C	P _D	350	mW
Derate above 25 °C		2.8	mW/°C
Thermal Resistance, Junction to Ambient	R _{θJA}	357	°C/W
Junction and Storage, Temperature	T _J , T _{stg}	-55 to +150	°C

Device Marking

MMBTA44=3D

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

Characteristics	Symbol	Min	Max	Unit
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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.

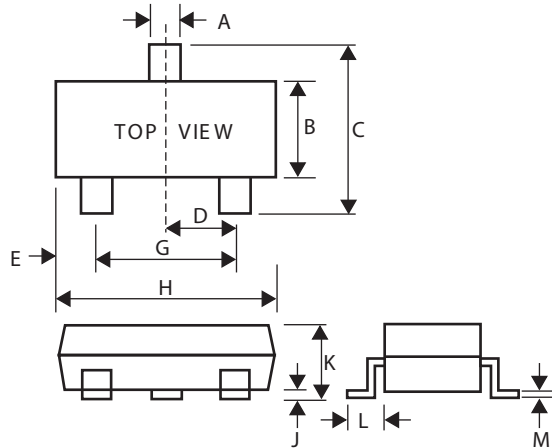
2.Alumina=0.4 x 0.3 x 0.024 in. 99.5% alumina.

3.Pulse Test:Pulse Width ≤300 μs, Duty Cycle ≤2.0%.

Electrical Characteristics ($T_A=25\text{ }^\circ\text{C}$ unless otherwise noted) (Continued)

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