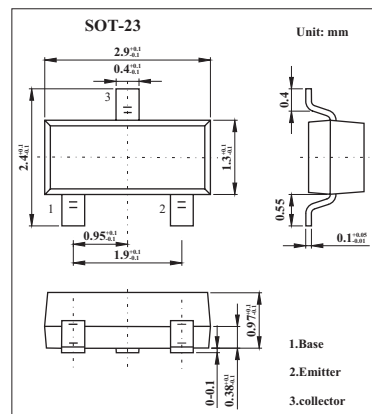


MMBTA93

■ Features

- PNP Silicon



■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector-emitter voltage	V _{CEO}	-200	V
Collector-base voltage	V _{CBO}	-200	V
Emitter-base voltage	V _{EBO}	-5	V
Collector current-continuous	I _C	-500	mA
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 _{θJA}	556	°C/W
Total device dissipation alumina substrate *2			
@TA = 25°C	P _D	300	mW
derate above 25°C		2.4	mW/°C
Thermal resistance, junction-to-ambient	R _{θJA}	417	°C/W
Junction and storage temperature	T _J , T _{stg}	-55 to +150	°C

* 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.

MMBTA93

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-emitter breakdown voltage *	$V_{(BR)CEO}$	$I_C = -1.0 \text{ mA}, I_B = 0$	-200			V
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -100 \mu\text{A}, I_E = 0$	-200			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -100 \mu\text{A}, I_C = 0$	-5			V
Collector cutoff current	I_{CBO}	$V_{CB} = -160 \text{ V}, I_E = 0$			-0.25	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = -3.0 \text{ V}, I_C = 0$			-0.1	μA
DC current gain *	h_{FE}	$I_C = -1.0 \text{ mA}, V_{CE} = -10 \text{ V}$	25			
		$I_C = -10 \text{ mA}, V_{CE} = -10 \text{ V}$	40			
		$I_C = -30 \text{ mA}, V_{CE} = -10 \text{ V}$	25			
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = -20 \text{ mA}, I_B = -2.0 \text{ mA}$			-0.5	V
Base-emitter saturation voltage *	$V_{BE(sat)}$	$I_C = -20 \text{ mA}, I_B = -2.0 \text{ mA}$			-0.9	V
Current-gain - bandwidth product	f_T	$I_C = -10 \text{ mA}, V_{CE} = -20 \text{ V}, f = 100 \text{ MHz}$	50			MHz
Collector-base capacitance	C_{cb}	$V_{CB} = -20 \text{ V}, I_E = 0, f = 1.0 \text{ MHz}$			8	pF

* Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.

■ Marking

Marking	2E
---------	----