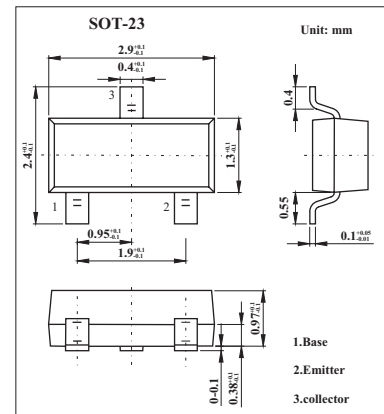


High Voltage Transistors

MMBT6517

■ Features

- NPN Silicon

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-emitter voltage	V_{CEO}	350	V
Collector-base voltage	V_{CBO}	350	V
Emitter-base voltage	V_{EBO}	5	V
Base current	I_B	250	mA
Collector current-continuous	I_C	500	mA
Total device dissipation FR-5 board *1			
@ $T_A = 25^\circ\text{C}$	P_D	225	mW
Derate above 25°C		1.8	mW/ $^\circ\text{C}$
Thermal resistance, junction-to-ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Total device dissipation alumina substrate *2			
@ $T_A = 25^\circ\text{C}$	P_D	300	mW
derate above 25°C		2.4	mW/ $^\circ\text{C}$
Thermal resistance, junction-to-ambient	$R_{\theta JA}$	417	$^\circ\text{C/W}$
Junction and storage temperature	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$

* 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.

MMBT6517

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-emitter breakdown voltage *	$V_{(BR)CEO}$	$I_C = 1.0 \text{ mA}, I_B = 0$	350			V
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 100 \text{ } \mu\text{A}, I_E = 0$	350			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 10 \text{ } \mu\text{A}, I_C = 0$	6			V
Collector cutoff current	I_{CBO}	$V_{CB} = 250 \text{ V}, I_E = 0$			50	nA
Emitter cutoff current	I_{EBO}	$V_{EB} = 5.0 \text{ V}, I_C = 0$			50	nA
DC current gain *	h_{FE}	$I_C = 1.0 \text{ mA}, V_{CE} = 10 \text{ V}$	20			
		$I_C = 10 \text{ mA}, V_{CE} = 10 \text{ V}$	30			
		$I_C = 30 \text{ mA}, V_{CE} = 10 \text{ V}$	30		200	
		$I_C = 50 \text{ mA}, V_{CE} = 10 \text{ V}$	20		200	
		$I_C = 100 \text{ mA}, V_{CE} = 10 \text{ V}$	15			
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = 10 \text{ mA}, I_B = 1.0 \text{ mA}$			0.30	V
		$I_C = 20 \text{ mA}, I_B = 2.0 \text{ mA}$			0.35	V
		$I_C = 30 \text{ mA}, I_B = 3.0 \text{ mA}$			0.50	V
		$I_C = 50 \text{ mA}, I_B = 5.0 \text{ mA}$			1.0	V
Base-emitter saturation voltage *	$V_{BE(sat)}$	$I_C = 10 \text{ mA}, I_B = 1.0 \text{ mA}$			0.75	V
		$I_C = 20 \text{ mA}, I_B = 2.0 \text{ mA}$			0.85	V
		$I_C = 30 \text{ mA}, I_B = 3.0 \text{ mA}$			0.90	V
Base-emitter on voltage	$V_{BE(on)}$	$I_C = 100 \text{ mA}, V_{CE} = 10 \text{ V}$			2	V
Current-gain - bandwidth product	f_T	$I_C = 10 \text{ mA}, V_{CE} = 20 \text{ V}, f = 20 \text{ MHz}$	40		200	MHz
Collector-base capacitance	C_{cb}	$V_{CB} = 20 \text{ V}, I_E = 0, f = 1.0 \text{ MHz}$			6	pF
Emitter-base capacitance	C_{eb}	$V_{CB} = 0.5 \text{ V}, I_E = 0, f = 1.0 \text{ MHz}$			80	pF

* Pulse Test: Pulse Width = 300 μs , Duty Cycle=2.0%.

■ Marking

Marking	1Z
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