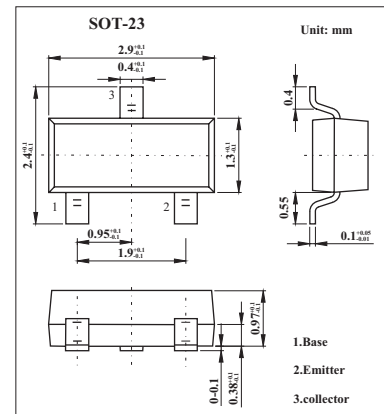


High Voltage Transistors

MMBT5550

■ Features

- NPN Silicon

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

Parameter	Symbol	Rating	Unit
Collector-emitter voltage	V_{CE0}	140	V
Collector-base voltage	V_{CB0}	160	V
Emitter-base voltage	V_{EB0}	6	V
Collector current -continuous	I_C	600	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	$^\circ\text{C}/\text{W}$
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	$^\circ\text{C}/\text{W}$
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.

MMBT5550

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-emitter breakdown voltage *	$V_{(BR)CEO}$	$I_C = 1.0 \text{ mA}, I_B = 0$	140			V
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 100 \text{ } \mu\text{A}, I_E = 0$	160			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}	$V_{CB} = 100 \text{ V}, I_E = 0$			100	nA
		$V_{CB} = 100 \text{ V}, I_E = 0, T_a = 100^\circ\text{C}$			100	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 4.0 \text{ V}, I_C = 0$			50	nA
DC current gain	h_{FE}	$I_C = 1.0 \text{ mA}, V_{CE} = 5 \text{ V}$	60			
		$I_C = 10 \text{ mA}, V_{CE} = 5 \text{ V}$	60		250	
		$I_C = 50 \text{ mA}, V_{CE} = 5 \text{ V}$	20			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10 \text{ mA}, I_B = 1.0 \text{ mA}$			0.15	V
		$I_C = 50 \text{ mA}, I_B = 5.0 \text{ mA}$			0.25	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 10 \text{ mA}, I_B = 1.0 \text{ mA}$			1.0	V
		$I_C = 50 \text{ mA}, I_B = 5.0 \text{ mA}$			1.2	V
Collector emitter cut-off	I_{CES}	$V_{CB} = 10 \text{ V}$			50	nA
		$V_{CB} = 75 \text{ V}$			100	nA

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

■ Marking

Marking	M1F
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