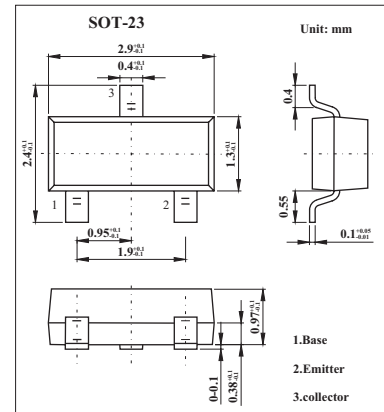
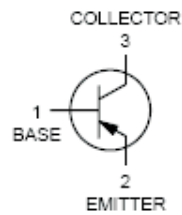


General Purpose Amplifier

MMBTA20

■ Features

- General Purpose Amplifier.

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

Parameter	Symbol	Rating	Unit
Collector-emitter voltage	V_{CE0}	40	V
Emitter-base voltage	V_{EB0}	4	V
Collector current	I_C	100	mA
Total Device Dissipation FR-5 Board (* 1) @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	225 1.8	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	556	$^\circ\text{C}/\text{W}$
Total Device Dissipation Alumina Substrate, (* 2) @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	300 2.4	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	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.

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 1.0 \text{ mA}, I_B = 0$	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 10 \mu\text{A}, I_C = 0$	4.0			V
Collector cutoff current	I_{CBO}	$V_{CB} = 30 \text{ V}, I_E = 0$			100	nA
DC current gain	HFE	$I_C = 5.0 \text{ mA}, V_{CE} = 10 \text{ V}$	40		400	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10 \text{ mA}, I_B = 1.0 \text{ mA}$			0.25	V
Current-gain-bandwidth product	f_T	$I_C = 5.0 \text{ mA}, V_{CE} = 10 \text{ V}, f = 100 \text{ MHz}$	125			MHz
Output capacitance	C_{obo}	$V_{CB} = 5.0 \text{ V}, I_E = 0, f = 1.0 \text{ MHz}$			4.0	pF

■ Marking

Marking	1C