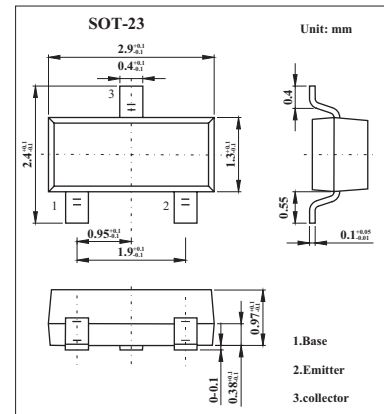


## General Purpose Transistor

## MMBTA70

## ■ Features

- General Purpose Transistor

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

Parameter	Symbol	Rating	Unit
Collector-emitter voltage	$V_{CE0}$	-40	V
Emitter-base voltage	$V_{EBO}$	-4	V
Collector current	$I_C$	-100	mA
Total Device Dissipation FR-5 Board (* 1) @ $T_a = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	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 $25^\circ\text{C}$	$P_D$	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 □ 0.75 □ 0.062 in.

\* 2. Alumina = 0.4 □ 0.3 □ 0.024 in. 99.5% alumina.

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

Parameter	Symbol	Testconditions	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	$V_{(BR)EBO}$	$I_E = -100\ \mu\text{A}, I_C = 0$	-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	$C_{obo}$	$V_{CB} = -10\text{ V}, I_E = 0, f = 1.0\text{ MHz}$			4.0	pF

## ■ Marking

Marking	M2C
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