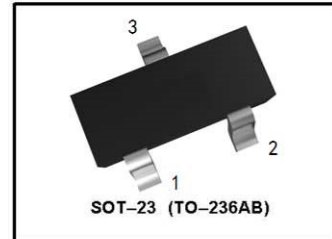
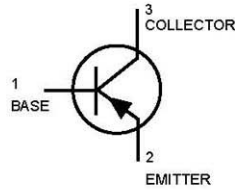


## PNP Silicon



### ● MAXIMUM RATINGS

Rating	Symbol	Value		Unit
		MMBTA55	MMBTA56	
Collector-Emitter Voltage	$V_{CE0}$	-60	-80	Vdc
Collector-Base Voltage	$V_{CB0}$	-60	-80	Vdc
Emitter-Base Voltage	$V_{EB0}$	-4.0		Vdc
Collector Current — Continuous	$I_C$	-500		mAdc

### ● THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (1) $T_A = 25^\circ\text{C}$	$P_D$	225	mW
Derate above $25^\circ\text{C}$		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 $25^\circ\text{C}$		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	$^\circ\text{C}$

### ● DEVICE MARKING

MMBTA55 = 2H; MMBTA56 = 2GM
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### ● ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Max	Unit
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#### OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage (3) ( $I_C = -1.0\text{ mAdc}, I_B = 0$ )	$V_{(BR)CE0}$			Vdc
MMBTA55		-60	—	
MMBTA56		-80	—	
Emitter-Base Breakdown Voltage ( $I_E = -100\ \mu\text{Adc}, I_C = 0$ )	$V_{(BR)EB0}$	-4.0	—	Vdc
Collector Cutoff Current ( $V_{CE} = -60\text{ Vdc}, I_B = 0$ )	$I_{CE0}$	—	-0.1	$\mu\text{Adc}$
Collector Cutoff Current ( $V_{CB} = -60\text{ Vdc}, I_E = 0$ )	$I_{CB0}$	—	-0.1	$\mu\text{Adc}$
MMBTA55		—	-0.1	
MMBTA56		—	-0.1	

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.

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

● **ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted) (Continued)

Characteristic	Symbol	Min	Max	Unit
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**ON CHARACTERISTICS**

DC Current Gain ( $I_C = -10\text{ mAdc}$ , $V_{CE} = -1.0\text{ Vdc}$ ) ( $I_C = -100\text{ mAdc}$ , $V_{CE} = -1.0\text{ Vdc}$ )	$h_{FE}$	100 100	— —	—
Collector–Emitter Saturation Voltage ( $I_C = -100\text{ mAdc}$ , $I_B = -10\text{ mAdc}$ )	$V_{CE(sat)}$	—	-0.25	Vdc
Base–Emitter On Voltage ( $I_C = -100\text{ mAdc}$ , $V_{CE} = -1.0\text{ Vdc}$ )	$V_{BE(on)}$	—	-1.2	Vdc

● **SMALL-SIGNAL CHARACTERISTICS**

Current–Gain–Bandwidth Product(4) ( $V_{CE} = -1.0\text{ Vdc}$ , $I_C = -100\text{ mAdc}$ , $f = 100\text{ MHz}$ )	$f_T$	50	—	MHz
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4.  $f_T$  is defined as the frequency at which  $|h_{fe}|$  extrapolates to unity.