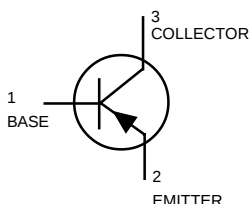
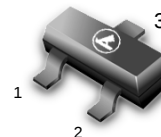


Driver Transistors

PNP Silicon



MMBTA55LT1
MMBTA56LT1



CASE 318-08, STYLE 6
SOT-23 (TO-236AB)

MAXIMUM RATINGS

Rating	Symbol	Value		Unit
		MMBTA55	MMBTA56	
Collector-Emitter Voltage	V_{CE0}	-60	-80	Vdc
Collector-Base Voltage	V_{CBO}	-60	-80	Vdc
Emitter-Base Voltage	V_{EBO}	-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°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	$^\circ\text{C}$

DEVICE MARKING

MMBTA55LT1 = 2H; MMBTA56LT1 = 2GM

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

1. FR-5 = $1.0 \times 0.75 \times 0.062$ in.

2. Alumina = $0.4 \times 0.3 \times 0.024$ in. 99.5% alumina.

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

MMBTA55LT1 MMBTA56LT1**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 ($I_C = -10\text{ mA}$, $V_{CE} = -1.0\text{ Vdc}$) ($I_C = -100\text{ mA}$, $V_{CE} = -1.0\text{ Vdc}$)	h_{FE}	100 100	— —	—
Collector–Emitter Saturation Voltage ($I_C = -100\text{ mA}$, $I_B = -10\text{ mA}$)	$V_{CE(sat)}$	—	–0.25	Vdc
Base–Emitter On Voltage ($I_C = -100\text{ mA}$, $V_{CE} = -1.0\text{ Vdc}$)	$V_{BE(on)}$	—	–1.2	Vdc

SMALL–SIGNAL CHARACTERISTICS

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