

MMBTA55,56

CASE 318-02/03, STYLE 6
SOT-23 (TO-236AA/AB)

DRIVER TRANSISTOR

PNP SILICON

MAXIMUM RATINGS

Rating	Symbol	MMBTA55	MMBTA56	Unit
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, $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	350 2.8	mW mW/ $^\circ\text{C}$
Storage Temperature	T_{stg}	150	$^\circ\text{C}$
*Thermal Resistance Junction to Ambient	$R_{\theta JA}$	357	$^\circ\text{C/W}$

*Package mounted on 99.5% alumina 10 x 8 x 0.6 mm.

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

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}	50 50	—	—
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(2) ($I_C = 100 \text{ mAdc}$, $V_{CE} = 1.0 \text{ Vdc}$, $f = 100 \text{ MHz}$)		f_T	50	—	MHz
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(1) Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.

(2) f_T is defined as the frequency at which $|h_{fe}|$ extrapolates to unity.