

MMBTA05,06CASE 318-02/03, STYLE 6
SOT-23 (TO-236AA/AB)**DRIVER TRANSISTOR**

NPN SILICON

MAXIMUM RATINGS

Rating	Symbol	Value		Unit
		MMBTA05	MMBTA06	
Collector-Emitter Voltage	V_{CE0}	60	80	Vdc
Collector-Base Voltage	V_{CB0}	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
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage(1) ($I_C = 1.0 \text{ mAdc}$, $I_B = 0$)	$V_{(BR)CEO}$	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 ($V_{CB} = 60 \text{ Vdc}$, $I_E = 0$) ($V_{CB} = 80 \text{ Vdc}$, $I_E = 0$)	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) ($I_C = 10 \text{ mA}$, $V_{CE} = 2.0 \text{ V}$, $f = 100 \text{ MHz}$)	f_T	100	—	MHz

(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.