



MMBTA05, MMBTA06, MMBTA55, MMBTA56

NPN AND PNP HIGH VOLTAGE TRANSISTOR

VOLTAGE 60~80 Volts **POWER** 225 mWatts

SOT-23 Unit: inch (mm)

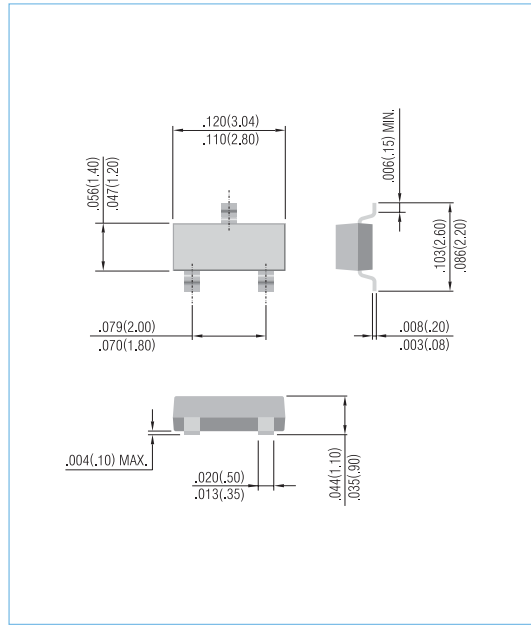
FEATURES

- NPN and PNP silicon, planar design
- Collector current $I_C = 100\text{mA}$
- In compliance with EU RoHS 2002/95/EC directives

MECHANICAL DATA

- Case: SOT-23, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.008 gram
- Marking :

MMBTA05=B05	MMBTA06=B06	MMBTA55=B55	MMBTA56=B56
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MAXIMUM RATINGS

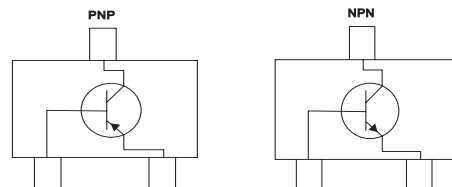
PARAMETER	SYMBOL	MMBTA05	MMBTA55	MMBTA06	MMBTA56	UNITS
Collector-Emitter Voltage	V_{CE0}	60		80		V
Collector-Base Voltage	V_{CBO}	60		80		V
Emitter-Base Voltage	V_{EBO}	4.0				V
Collector Current-Continuous	I_C	500				mA
Circuit Figure		NPN	PNP	NPN	PNP	

THERMAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MAX	UNIT
Total Device Dissipation FR-5 Board (Note 1) $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	225 1.8	mW mW/°C
Thermal Resistance , Junction to Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate (Note 2) $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	300 2.4	mW mW/°C
Thermal Resistance , Junction to Ambient	$R_{\theta JA}$	417	°C
Junction and Storage Temperature	T_J, T_{STG}	-55 to 150	°C

1.FR-4=70 x 60 x 1mm.

2.Alumina=0.4 x 0.3 x 0.024 in. 99.5 alumina





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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 (Note 3) ($I_C = 1.0\text{ mA}$, $I_B = 0$)	MMBTA05, MMBTA55 MMBTA06, MMBTA56 $V_{(BR)CEO}$	60 80	- -	V
Emitter-Base Breakdown Voltage ($I_E = 100\ \mu\text{A}$, $I_C = 0$)	$V_{(BR)EBO}$	4.0	-	V
Collector Cutoff Current ($V_{CE} = 60\text{V}$, $I_B = 0$)	I_{CES}	-	0.1	μA
Collector Cutoff Current ($V_{CB} = 60\text{V}$, $I_E = 0$) ($V_{CB} = 80\text{V}$, $I_E = 0$)	MMBTA05, MMBTA55 MMBTA06, MMBTA56 I_{CBO}	- -	0.1 0.1	μA

ON CHARACTERISTICS

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

SMALL-SIGNAL CHARACTERISTICS

Current-Gain-Bandwidth Product (Note 4) ($I_C = 10\text{mA}$, $V_{CE} = 2.0\text{V}$, $f = 100\text{MHz}$)	f_T	100	-	MHz
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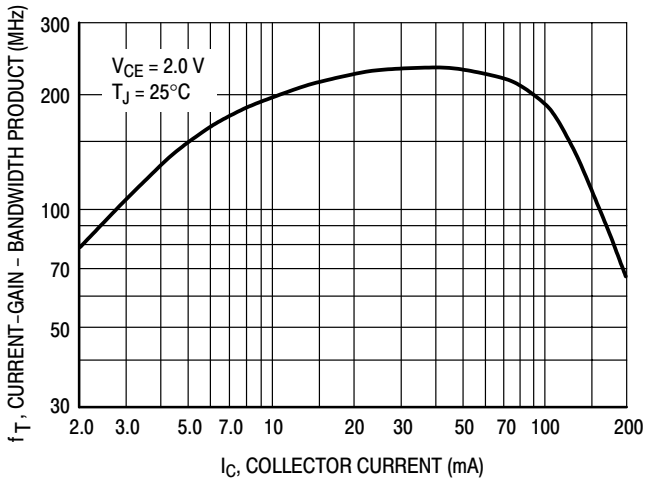


Figure 2. Current-Gain — Bandwidth Product

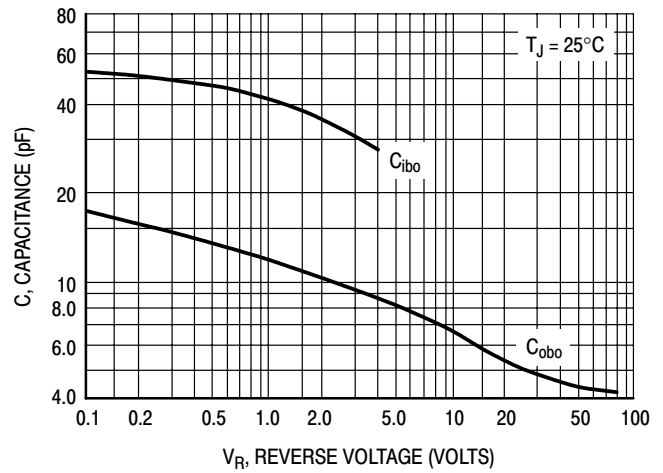


Figure 3. Capacitance

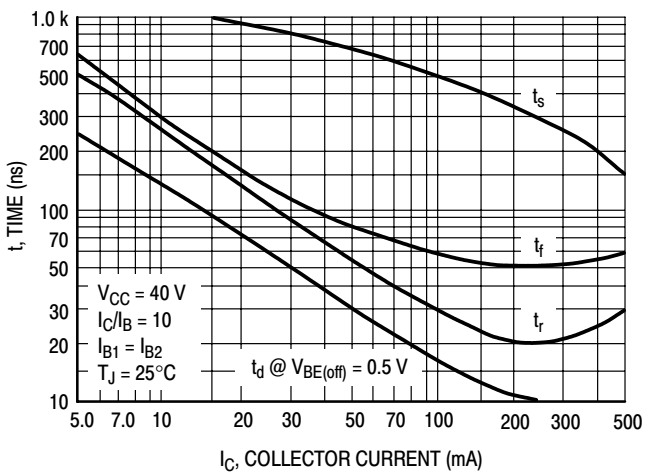


Figure 4. Switching Time

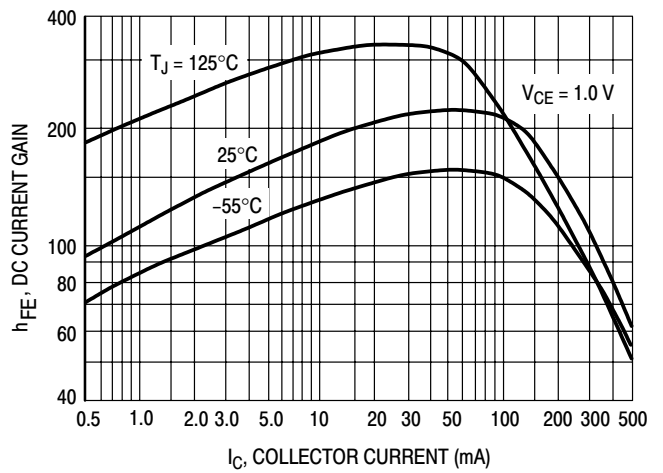


Figure 5. DC Current Gain

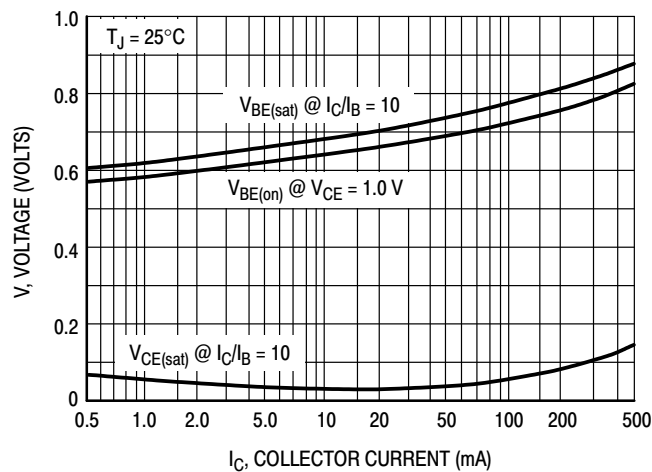


Figure 6. "ON" Voltages



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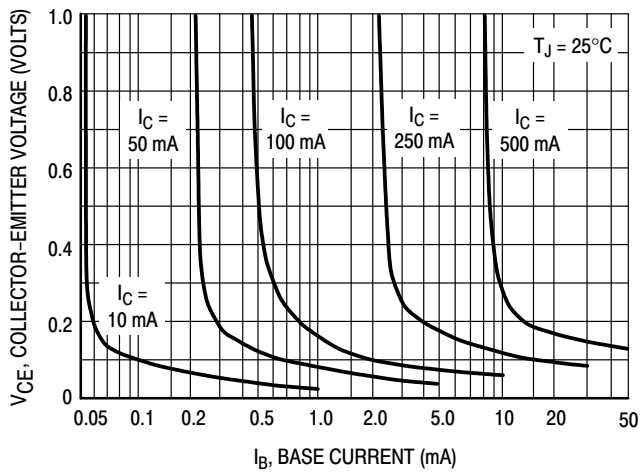


Figure 7. Collector Saturation Region

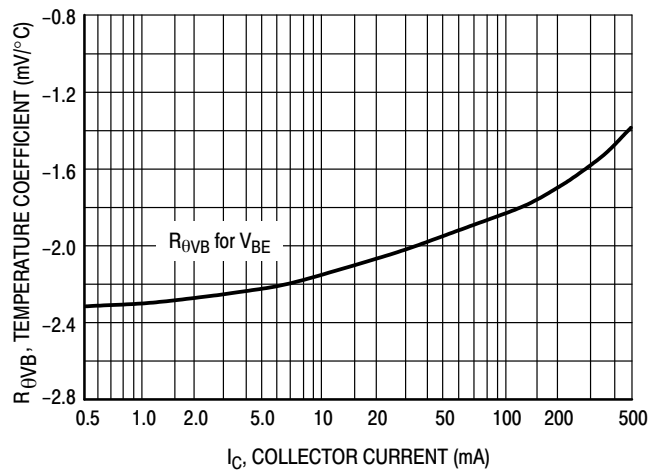
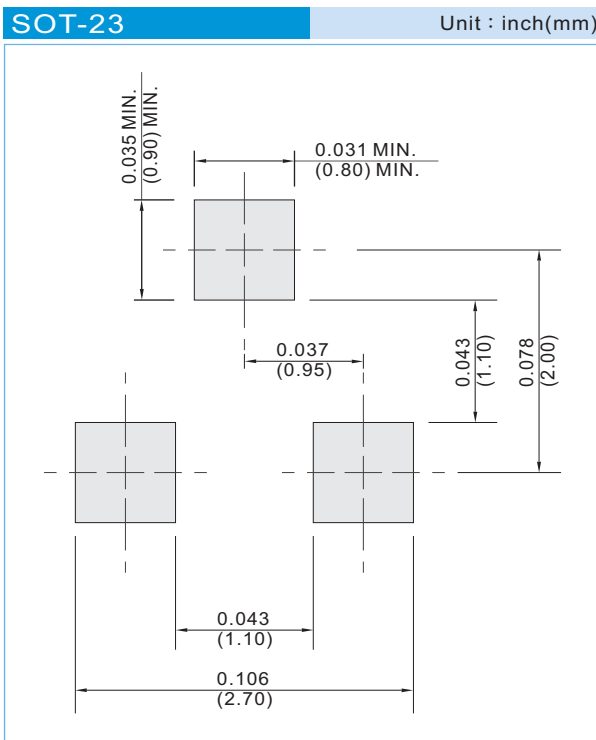


Figure 8. Base-Emitter Temperature Coefficient



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MOUNTING PAD LAYOUT



ORDER INFORMATION

- Packing information

T/R - 12K per 13" plastic Reel

T/R - 3K per 7" plastic Reel

LEGAL STATEMENT

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