

MMBTA05, MMBTA06, MMBTA55, MMBTA56

NPN AND PNP HIGH VOLTAGE TRANSISTOR

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

SOT-23 Unit : inch(mm)

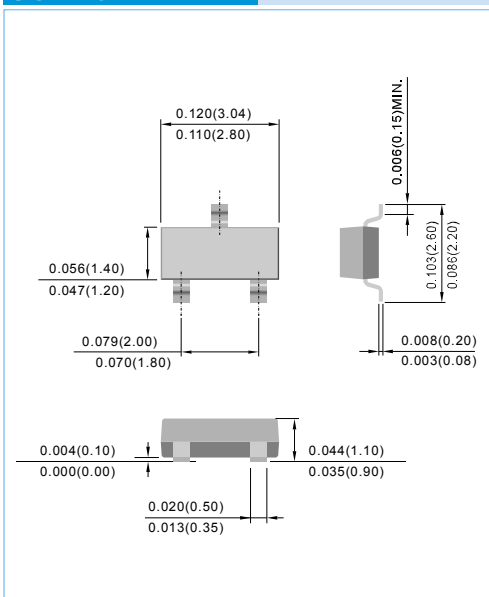
FEATURES

- NPN and PNP silicon, planar design
- Collector current $I_C = 500\text{mA}$
- Lead free in comply with EU RoHS 2002/95/EC directives.
- Green molding compound as per IEC61249 Std. . (Halogen Free)

MECHANICAL DATA

- Case: SOT-23, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0003 ounces, 0.0084 grams
- Marking :

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

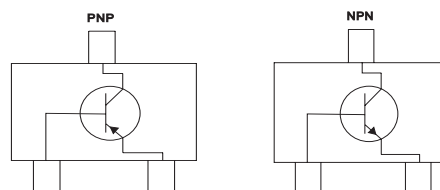
PARAMETER	SYMBOL	MMBTA05	MMBTA55	MMBTA06	MMBTA56	UNITS
Collector-Emitter Voltage	V_{CEO}	60		80		V
Collector-Base Voltage	V_{CBO}	60		80		V
Emitter-Base Voltage	V_{EBO}	4.0				V
Collector Current-Continuous	I_C	500				mA
Circuit Figure		NPN	PNP	NPN	PNP	

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

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°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 mA, I _B =0)	MMBTA05, MMBTA55 MMBTA06, MMBTA56	V _{(BR)CEO}	60 80	- -	V
Emitter-Base Breakdown Voltage (I _E =100 μA, I _C =0)		V _{(BR)EBO}	4.0	-	V
Collector Cutoff Current (V _{CE} =60V, I _B =0)		I _{CES}	-	0.1	μA
Collector Cutoff Current (V _{CB} =60V, I _E =0) (V _{CB} =80V, I _E =0)	MMBTA05, MMBTA55 MMBTA06, MMBTA56	I _{CBO}	- -	0.1 0.1	μA

ON CHARACTERISTICS

DC Current Gain (I _C =10mA, V _{CE} =1.0V) (I _C =100mA, V _{CE} =1.0V)		h _{FE}	100 100	- -	-
Collector-Emitter Saturation Voltage (I _C =100mA, I _B =10mA)		V _{CE(sat)}	-	0.25	V
Base-Emitter On Voltage (I _C =100mA, V _{CE} =1.0V)		V _{BE(on)}	-	1.2	V

SMALL-SIGNAL CHARACTERISTICS

Current-Gain-Bandwidth Product (Note 4) (I _C =10mA, V _{CE} =2.0V, f=100MHz)		f _T	100	-	MHz
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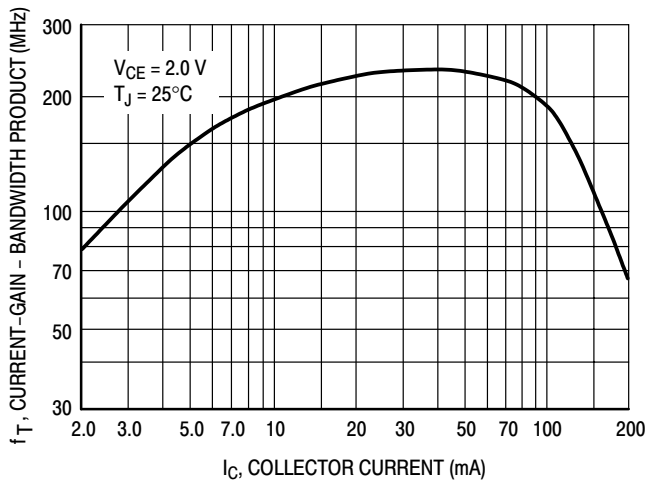


Figure 2. Current-Gain — Bandwidth Product

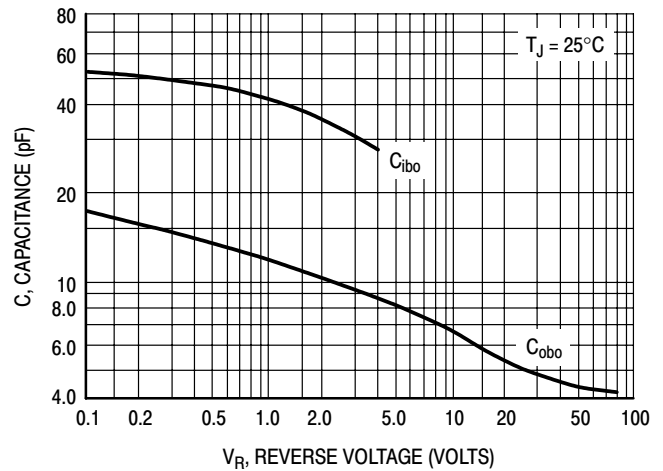


Figure 3. Capacitance

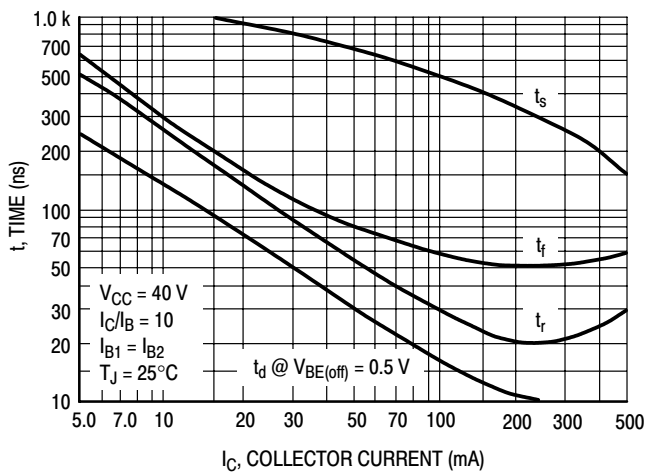


Figure 4. Switching Time

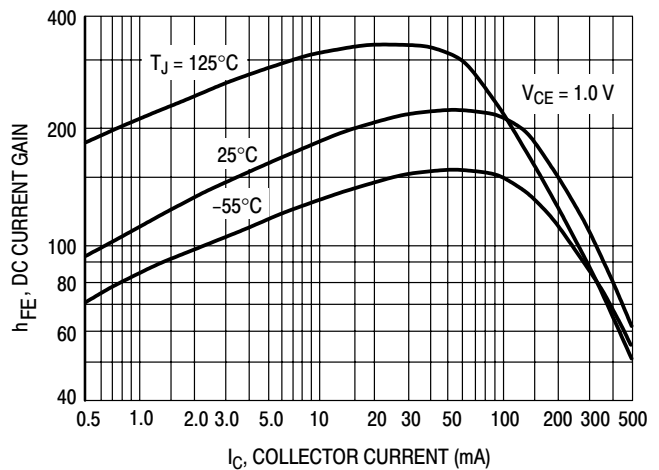


Figure 5. DC Current Gain

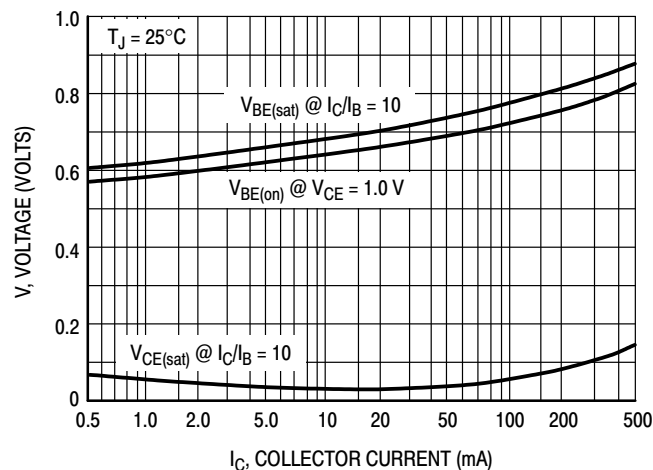


Figure 6. "ON" Voltages

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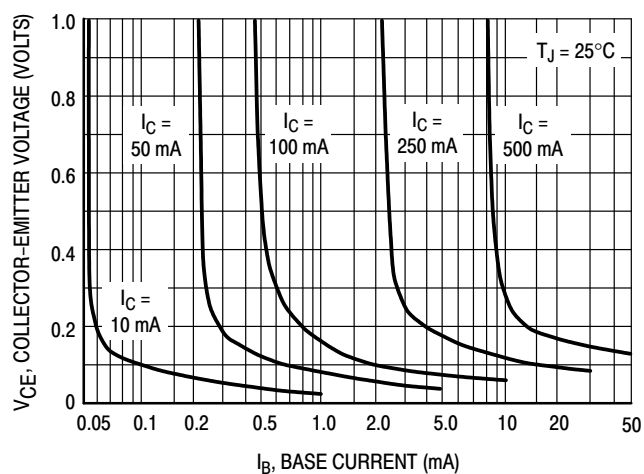


Figure 7. Collector Saturation Region

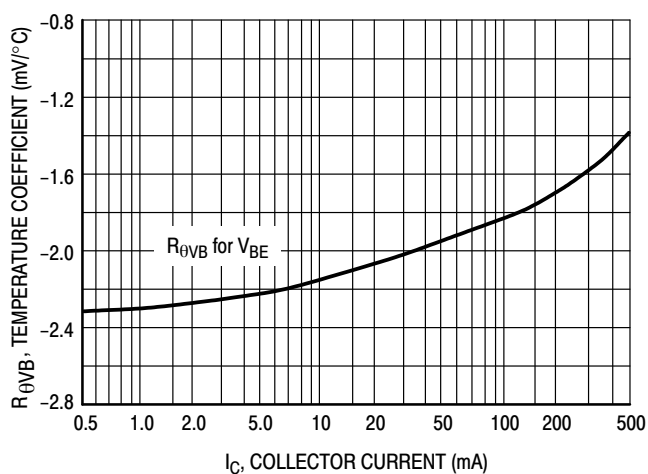
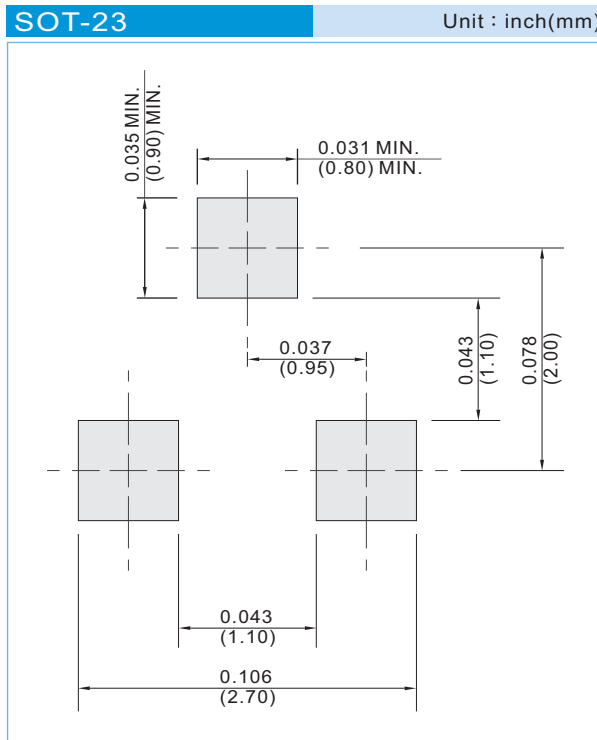


Figure 8. Base-Emitter Temperature Coefficient

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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

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Part No_packing code_Version

MMBTA05_R1_00001

MMBTA05_R2_00001

For example :

RB500V-40_R2_00001

Part No.

Serial number

Version code means HF

Packing size code means 13"

Packing type means T/R

Packing Code XX				Version Code XXXXX		
Packing type	1 st Code	Packing size code	2 nd Code	HF or RoHS	1 st Code	2 nd ~5 th Code
Tape and Ammunition Box (T/B)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			



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