MMBTA05,MMBTA06,MMBTA55,MMBTA56

NPN AND PNP HIGH VOLTAGE TRANSISTOR

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

FEATURES

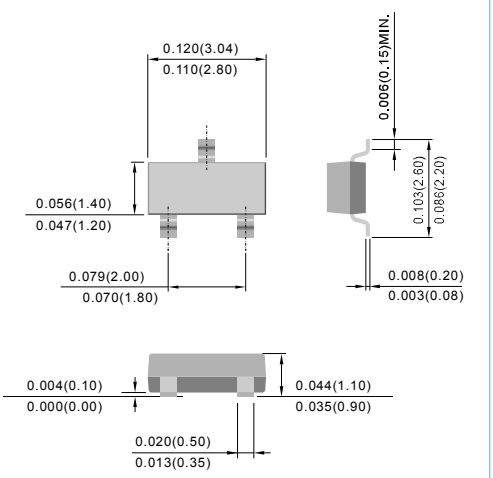
- NPN and PNP silicon, planar design
- Collector current I_C = 500mA
- Lead free in comply with EU RoHS 2002/95/EC directives.
- Green molding compound as per IEC61249 Std. . (Halogen Free)

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

SOT-23 Unit : inch(mm)



MAXIMUM RATINGS

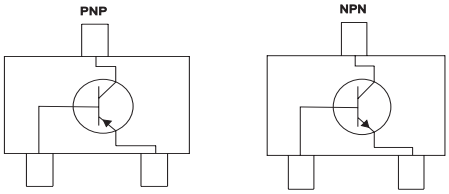
PARAMETER	SYMBOL	MMBTA05	MMBTA55	MMBTA06	MMBTA56	UNITS
Collector-Emitter Voltage	V_{CEO}	60		80		V
Collector-Base Voltage	V_{CBO}	60		80		V
Emitter-Base Voltage	V_{EBO}	4.0				V
Collector Current-Continuous	I_C	500				mA
Circuit Figure		NPN	PNP	NPN	PNP	

THERMAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MAX	UNIT
Total Device Dissipation FR-5 Board (Note 1)T_A =25°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°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



MMBTA05,MMBTA06,MMBTA55,MMBTA56

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

CHARACTERISTIC		SYMBOL	MIN	MAX	UNIT
OFF CHATACTERISTICS					
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 CHATACTERISTICS					
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

MMBTA05,MMBTA06,MMBTA55,MMBTA56

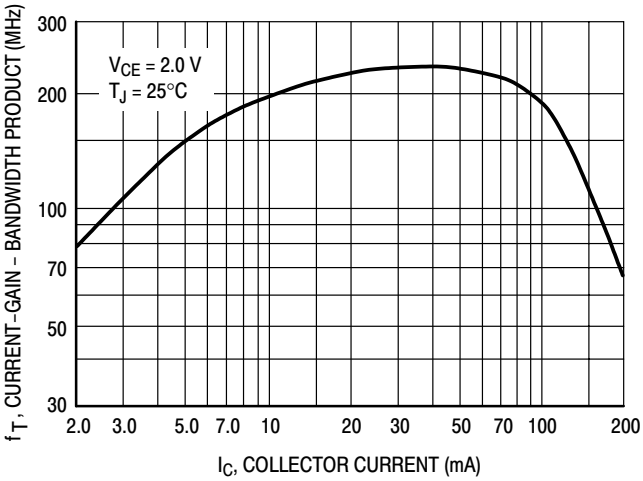


Figure 2. Current–Gain — Bandwidth Product

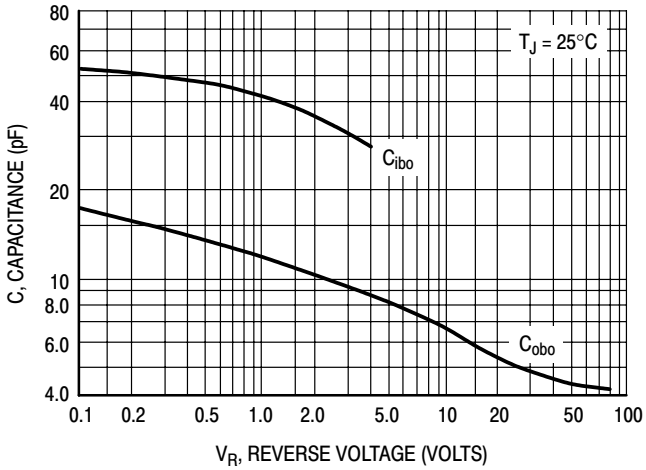


Figure 3. Capacitance

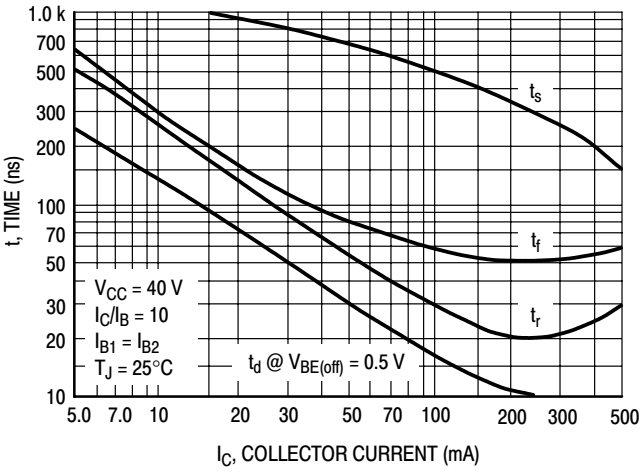


Figure 4. Switching Time

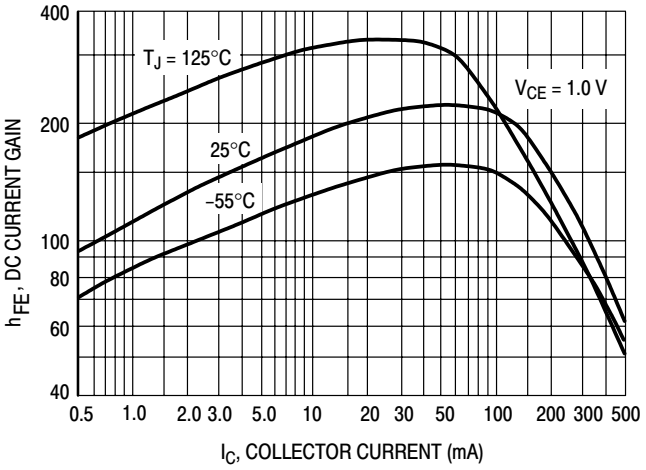


Figure 5. DC Current Gain

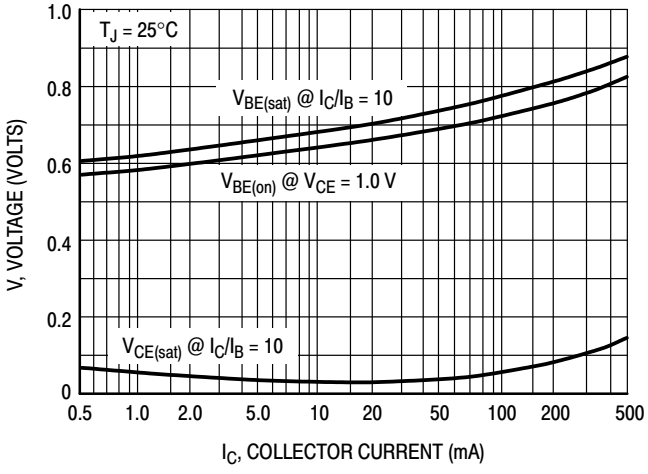


Figure 6. “ON” Voltages

MMBTA05,MMBTA06,MMBTA55,MMBTA56

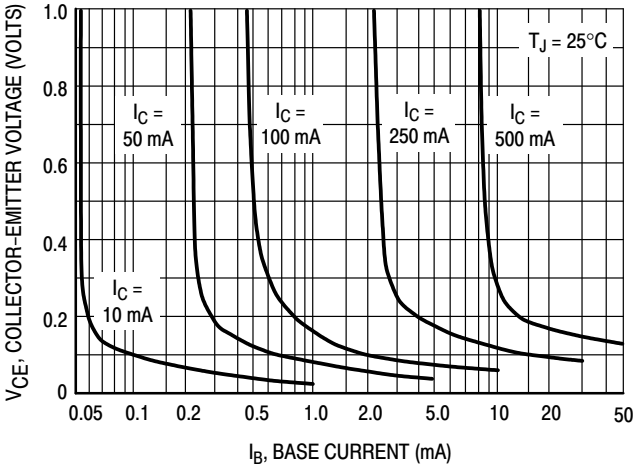


Figure 7. Collector Saturation Region

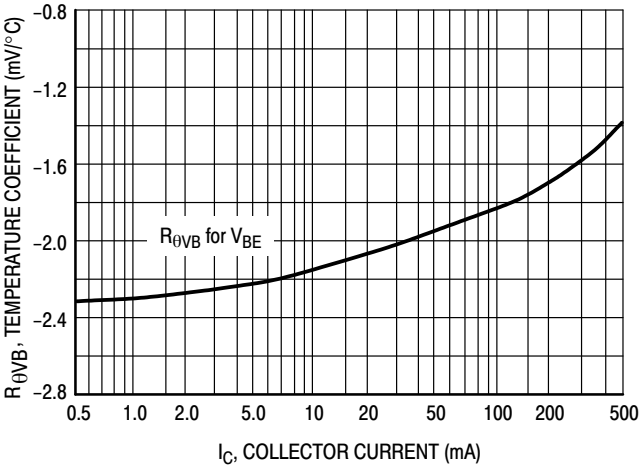
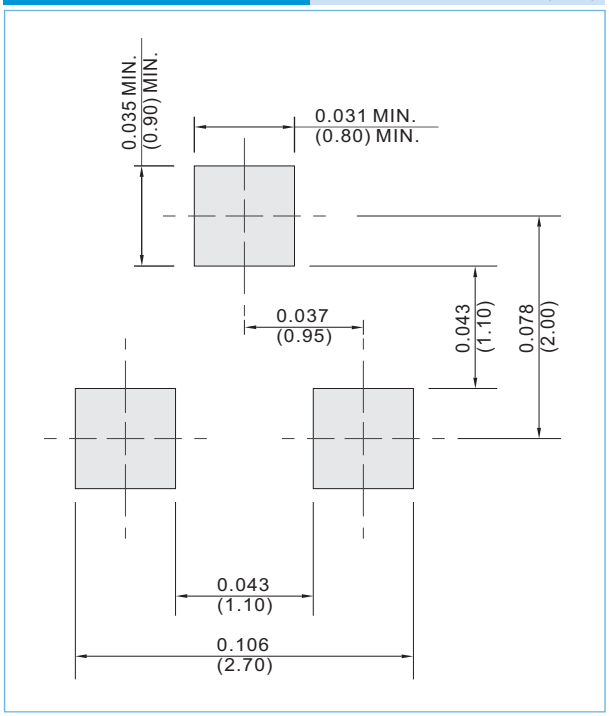


Figure 8. Base–Emitter Temperature Coefficient

MMBTA05,MMBTA06,MMBTA55,MMBTA56

MOUNTING PAD LAYOUT

SOT-23 Unit : inch(mm)



ORDER INFORMATION

- Packing information

  T/R - 12K per 13" plastic Reel

  T/R - 3K per 7" plastic Reel

MMBTA05,MMBTA06,MMBTA55,MMBTA56

Part No_packing code_Version

MMBTA05_R1_00001
MMBTA05_R2_00001

For example :

RB500V-40_R2_00001

- Part No.
- Packing type means T/R
- Packing size code means 13"
- Version code means HF
- Serial number

Packing Code XX				Version Code XXXXX		
Packing type	1st Code	Packing size code	2nd Code	HF or RoHS	1st Code	2nd~5th 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			

MMBTA05,MMBTA06,MMBTA55,MMBTA56

Disclaimer

- Reproducing and modifying information of the document is prohibited without permission from Panjit International Inc..
- Panjit International Inc. reserves the rights to make changes of the content herein the document anytime without notification. Please refer to our website for the latest document.
- Panjit International Inc. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Panjit International Inc. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Panjit International Inc. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Panjit International Inc. for any damages resulting from such improper use or sale.