

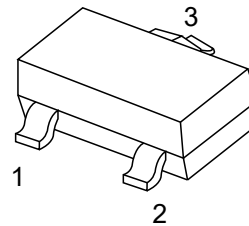
1.Features

- For Switching and Amplifier Applications
- Complementary Type PNP Transistor MMBTA56
- MMBTA06 TRANSISTOR (NPN)

2.Pinning Information

Pin	Symbol	Description
1	B	BASE
2	E	EMITTER
3	C	COLLECTOR

SOT-23



3.Absolute Maximum Ratings $T_A = 25^{\circ}\text{C}$

Parameter	Symbol	Value	Units
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	500	mA
Collector Power Dissipation	P_C	300	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	416	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 to 150	$^{\circ}\text{C}$

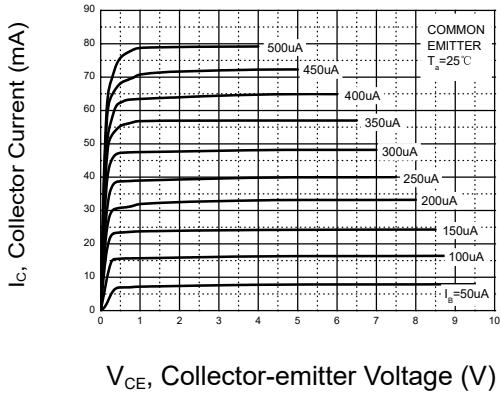
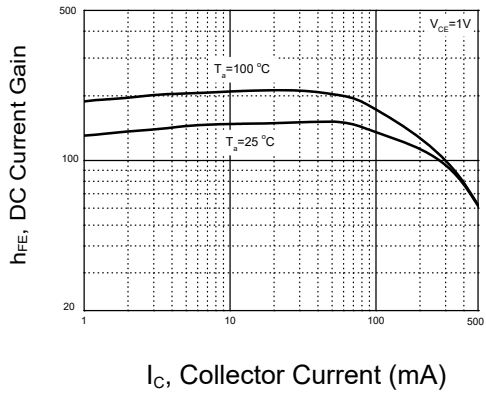
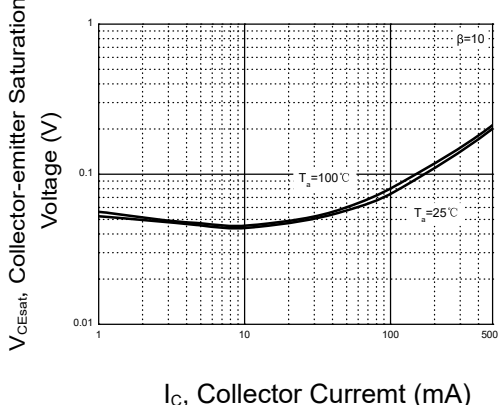
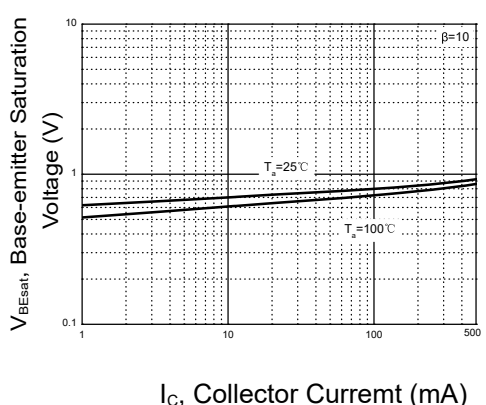
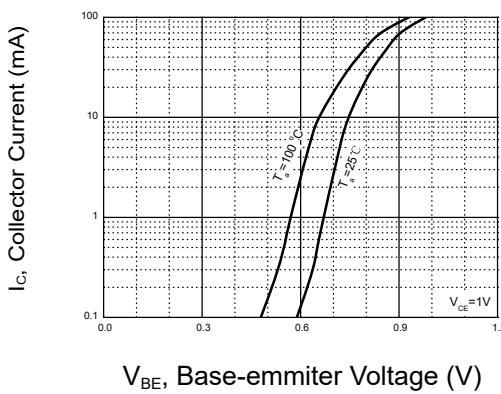
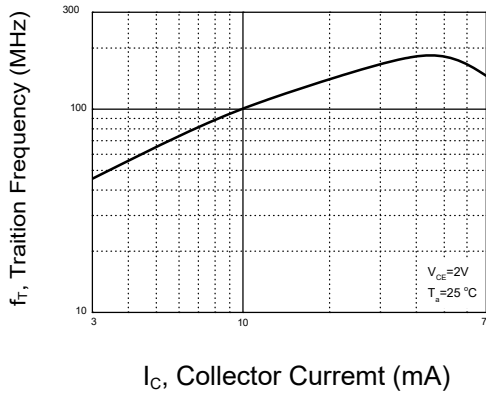


4. Electrical Characteristics $T_A = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=0.1\text{mA}$, $I_E=0$	80			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}$, $I_B=0$	80			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=0.1\text{mA}$, $I_C=0$	4			V
Collector cut-off current	I_{CBO}	$V_{CB}=80\text{V}$, $I_E=0$			0.1	μA
Collector cut-off current	I_{CES}	$V_{CE}=60\text{V}$, $I_B=0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=3\text{V}$, $I_C=0$			0.1	μA
DC current gain	h_{FE1}	$V_{CE}=1\text{V}$, $I_C=10\text{mA}$	100		400	
	h_{FE2}	$V_{CE}=1\text{V}$, $I_C=100\text{mA}$	100			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=100\text{mA}$, $I_B=10\text{mA}$			0.25	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=100\text{mA}$, $I_B=10\text{mA}$			1.2	V
Transition frequency	f_T	$V_{CE}=2\text{V}$, $I_C=10\text{mA}$, $f=100\text{MHz}$	100			MHz

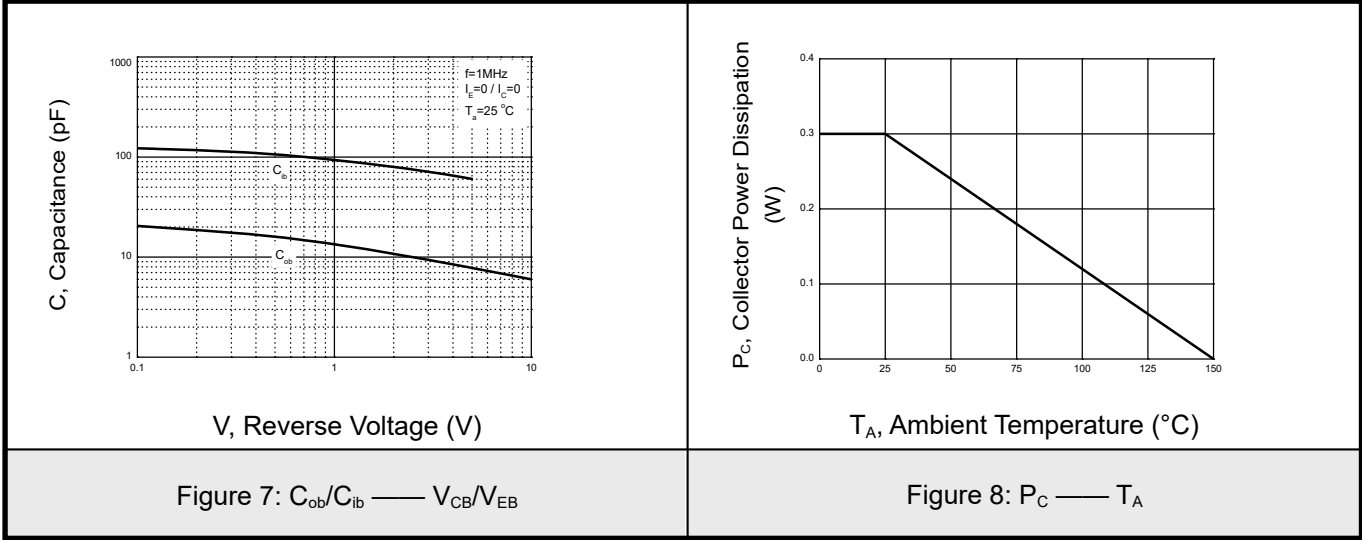


5.1 Typical Characteristics

 I_C, Collector Current (mA) V_{CE}, Collector-emitter Voltage (V)	 h_{FE}, DC Current Gain I_C, Collector Current (mA)
Figure 1: Static Characteristic	Figure 2: h_{FE} — I_C
 V_{CEsat}, Collector-emitter Saturation Voltage (V) I_C, Collector Current (mA)	 V_{BEsat}, Base-emitter Saturation Voltage (V) I_C, Collector Current (mA)
Figure 3: V_{CEsat} — I_C	Figure 4: V_{BEsat} — I_C
 I_C, Collector Current (mA) V_{BE}, Base-emitter Voltage (V)	 f_T, Transition Frequency (MHz) I_C, Collector Current (mA)
Figure 5: I_C — V_{BE}	Figure 6: f_T — I_C

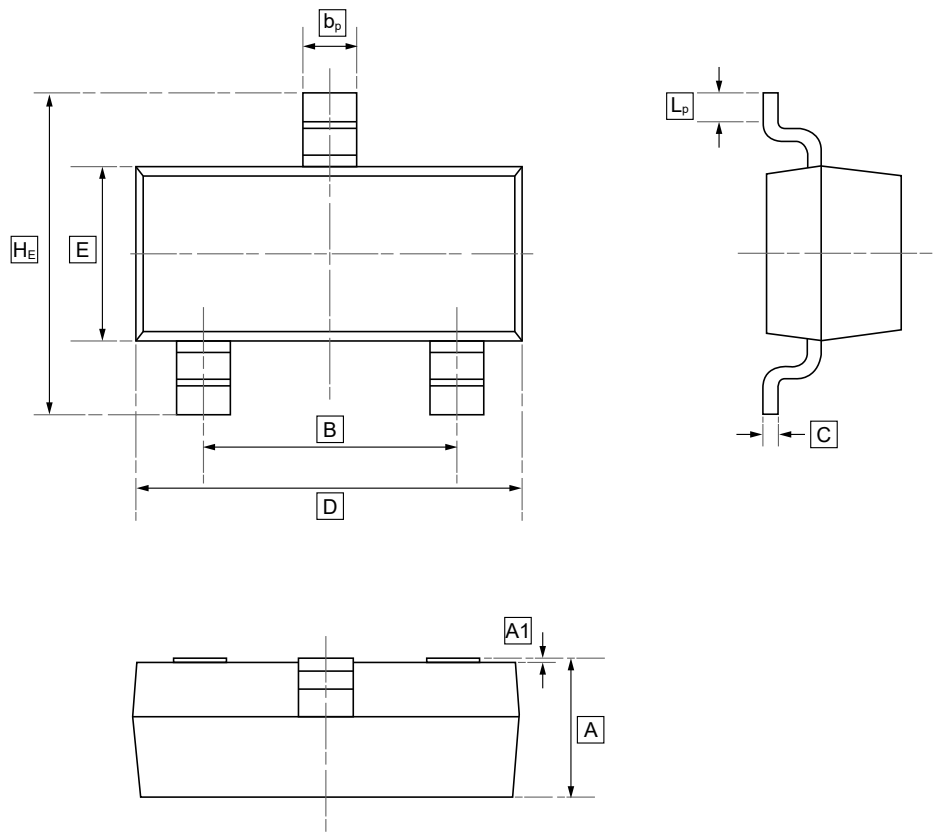


5.2Typical Characterisitics





6.SOT-23 Package Outline Dimensions

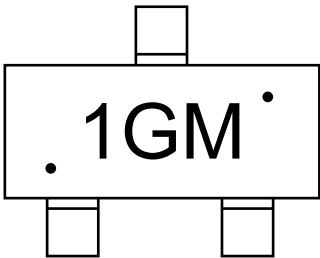


DIMENSIONS (mm are the original dimensions)

Symbol	A	B	b _p	C	D	E	H _E	A1	L _p
Min	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20
Max	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50



7.Ordering information



Order Code	Package	Base QTY	Delivery Mode
UMW MMBTA06	SOT-23	3000	Tape and reel



8.Disclaimer

UMW reserves the right to make changes to all products, specifications. Customers should obtain the latest version of product documentation and verify the completeness and currency of the information before placing an order.

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