

1.Features

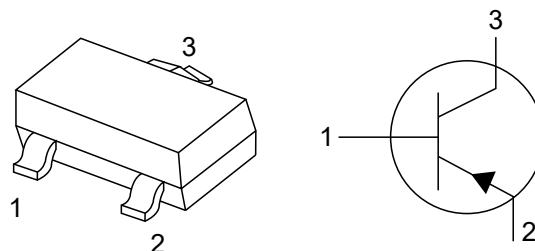
■ General Purpose Amplifier Applications

■ MMBTA56 TRANSISTOR (PNP)

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	225	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	555	$^\circ\text{C/W}$
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	$V_{(BR)CBO}$	$I_C = -100\mu\text{A}$, $I_E = 0$	-80			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}$, $I_B = 0$	-80			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -100\mu\text{A}$, $I_C = 0$	-4			V
Collector cut-off current	I_{CBO}	$V_{CB} = -80\text{V}$, $I_E = 0$			-0.1	μA
Collector cut-off current	I_{CEO}	$V_{CB} = -60\text{V}$, $I_E = 0$			-0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -3\text{V}$, $I_C = 0$			-0.1	μA
DC current gain	h_{FE}	$V_{CE} = -1\text{V}$, $I_C = -10\text{mA}$	100		400	
	h_{FE}	$V_{CE} = -1\text{V}$, $I_C = -100\text{mA}$	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	$V_{BE(sat)}$	$V_{CE} = -1\text{V}$, $I_C = -100\text{mA}$			-1.2	V
Transition frequency	f_T	$V_{CE} = -1\text{V}$, $I_C = -100\text{mA}$, $f = 100\text{MHz}$	50			MHz

5. Classification of h_{FE}

Rank	L	H	G
Range	100-200	200-300	300-400



6. Typical Characteristics

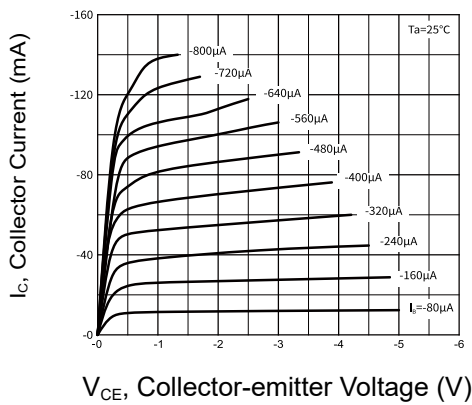


Figure 1: Static Characteristic

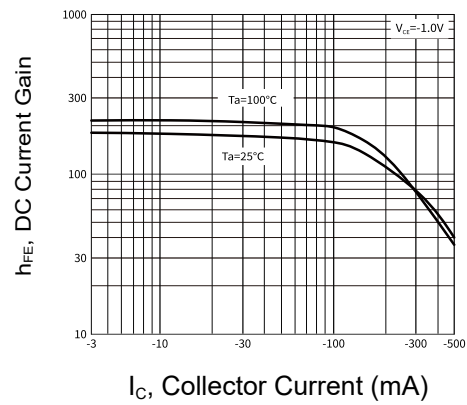


Figure 2: DC Current Gain

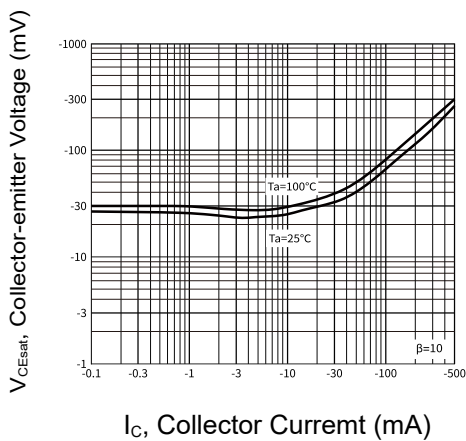


Figure 3: Collector-Emitter Saturation Voltage

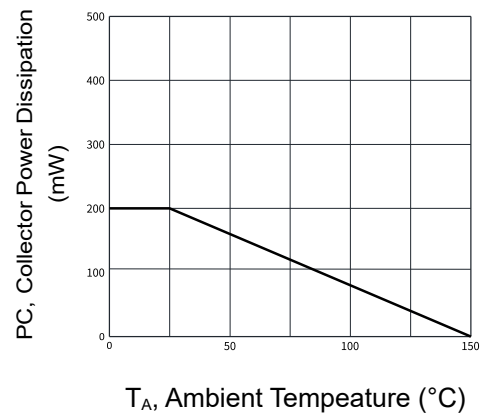


Figure 4: Power Derating Curve

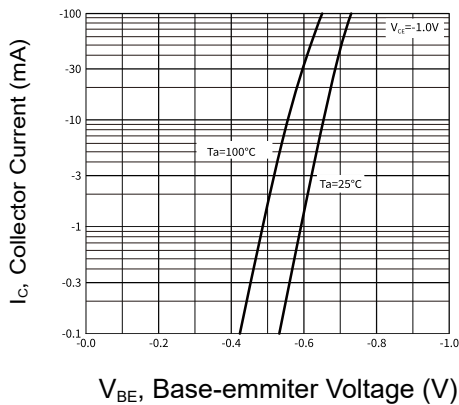


Figure 5: Base-Emitter On Voltage

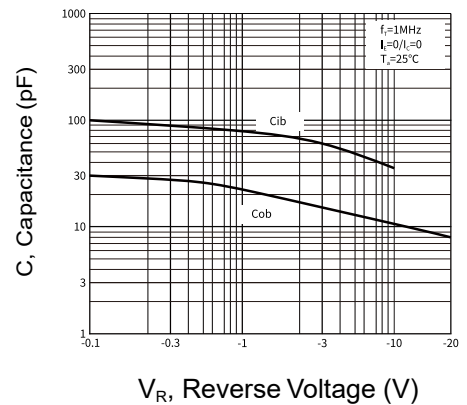
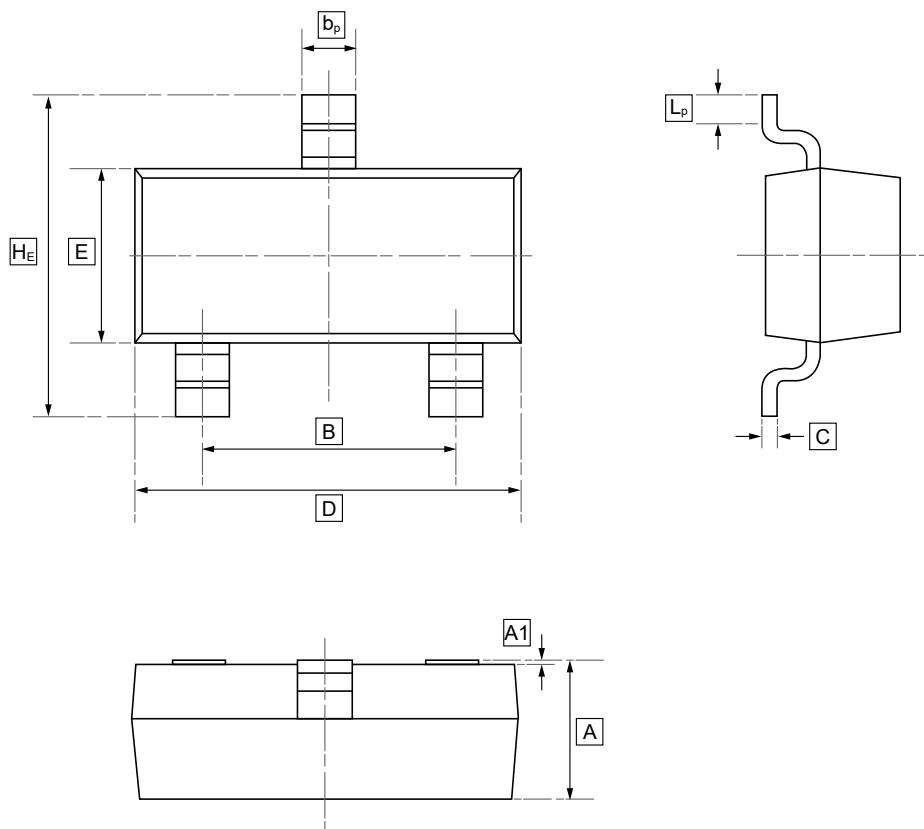


Figure 6: $C_{ob}/C_{ib}-V_{CE} V_{EB}$



7.SOT-23 Package Outline Dimensions

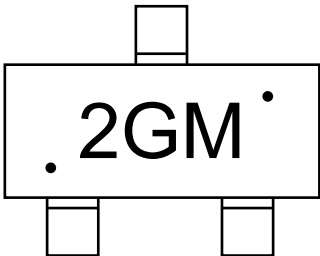


DIMENSIONS (mm are the original dimensions)

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



8.Ordering information



Order Code	Package	Base QTY	Delivery Mode
UMW MMBTA56	SOT-23	3000	Tape and reel



9.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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