

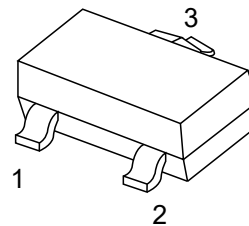
1.Features

- Complementary to MMBT5401
- MMBT5551 TRANSISTOR (NPN)
- Ideal for Medium Power Amplification and Switching

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}	180	V
Collector-Emitter Voltage	V_{CEO}	160	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	600	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	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}$, $I_E = 0$	180			V
Collector-emitter breakdown voltage	$V_{(BR)CEO^*}$	$I_C = 1\text{mA}$, $I_B = 0$	160			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}$, $I_C = 0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB} = 120\text{V}$, $I_E = 0$			50	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = 4\text{V}$, $I_C = 0$			50	nA
DC current gain	$h_{FE(1)^*}$	$V_{CE} = 5\text{V}$, $I_C = 1\text{mA}$	80			
	$h_{FE(2)^*}$	$V_{CE} = 5\text{V}$, $I_C = 10\text{mA}$	100		300	
	$h_{FE(3)^*}$	$V_{CE} = 5\text{V}$, $I_C = 50\text{mA}$	50			
Collector-emitter saturation voltage	$V_{CE(sat)1^*}$	$I_C = 10\text{mA}$, $I_B = 1\text{mA}$			0.15	V
	$V_{CE(sat)2^*}$	$I_C = 50\text{mA}$, $I_B = 5\text{mA}$			0.2	V
Base-emitter saturation voltage	$V_{BE(sat)1^*}$	$I_C = 10\text{mA}$, $I_B = 1\text{mA}$			1	V
	$V_{BE(sat)2^*}$	$I_C = 50\text{mA}$, $I_B = 5\text{mA}$			1	V
Transition frequency	f_T	$V_{CE} = 10\text{V}$, $I_C = 10\text{mA}$, $f = 100\text{MHz}$	100		300	MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$			6	pF

*pulse test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycles $\leq 2.0\%$.

5. Classification of $h_{FE(2)}$

Rank	L	H
Range	100-200	200-300



6.1 Typical Characteristics

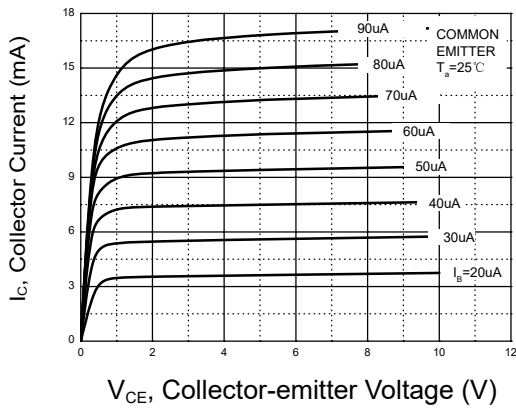
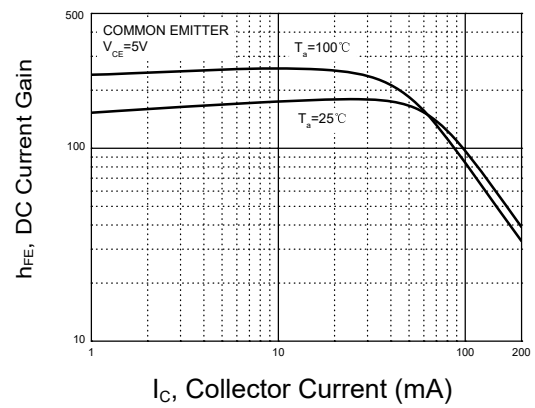
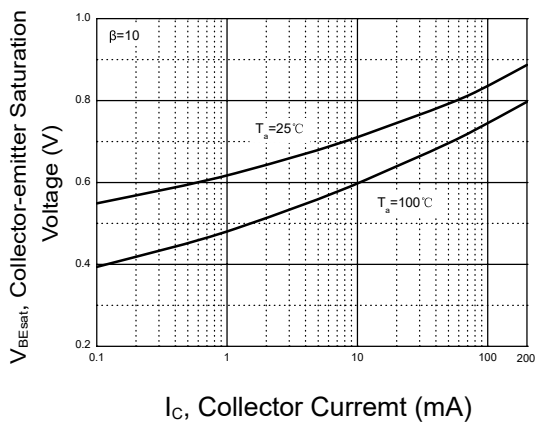
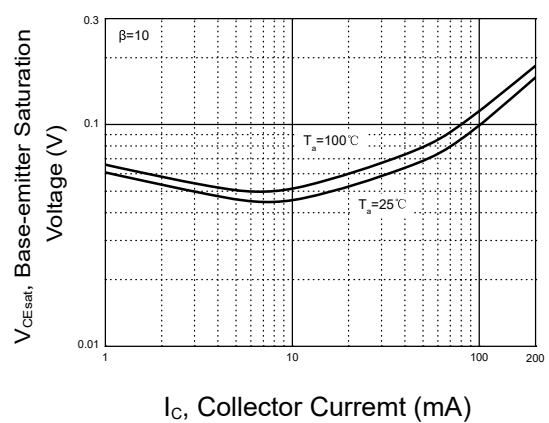
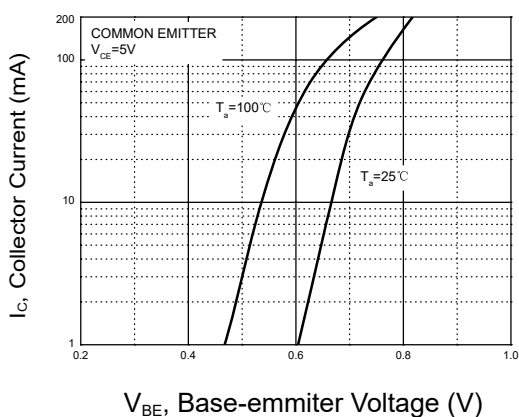
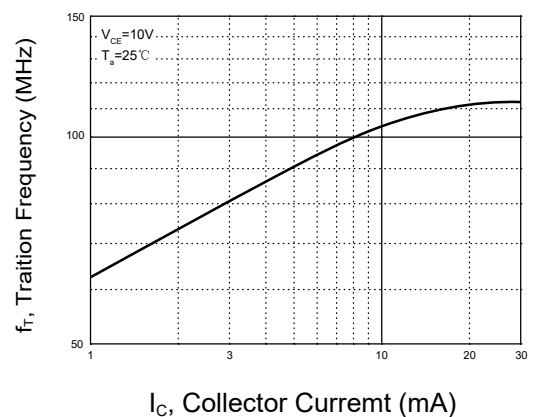
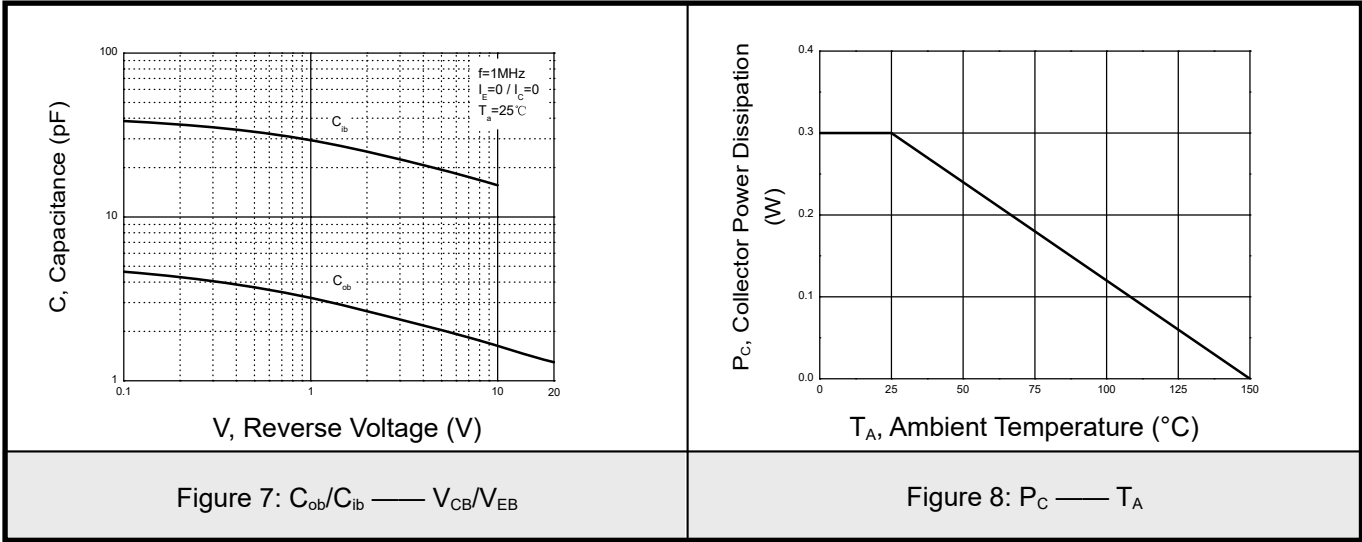


Figure 1: Static Characteristic

Figure 2: h_{FE} — I_C Figure 3: V_{BEsat} — I_C Figure 4: V_{CEsat} — I_C Figure 5: I_C — V_{BE} Figure 6: f_T — I_C

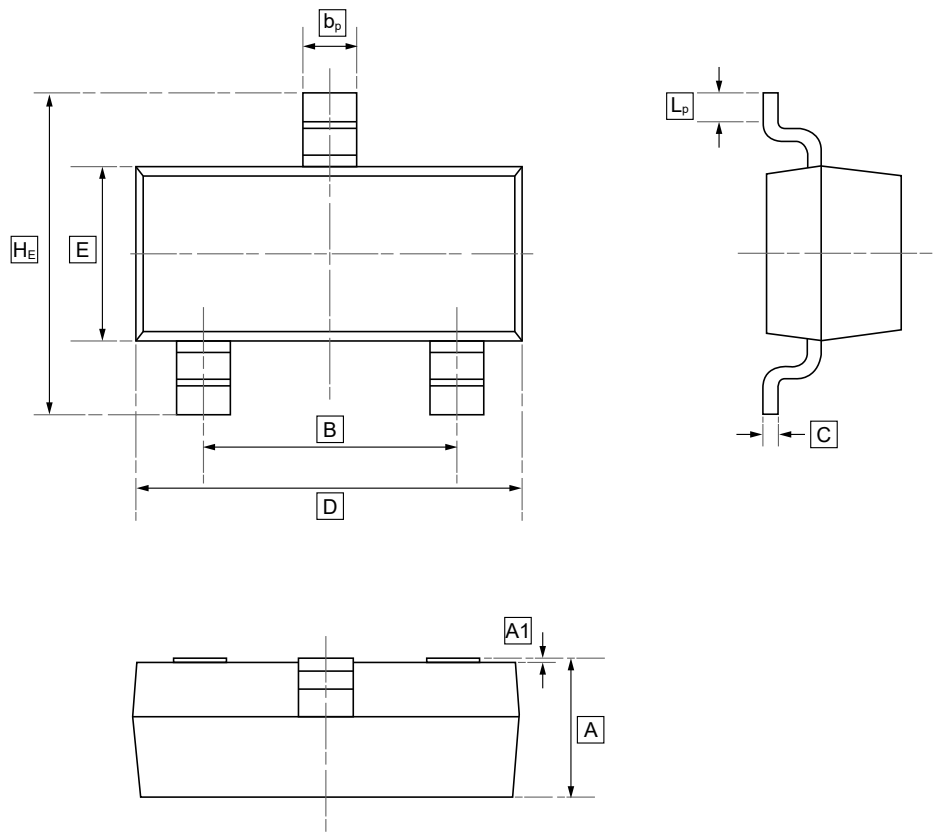


6.2Typical Characterisitics





7.SOT-23 Package Outline Dimensions

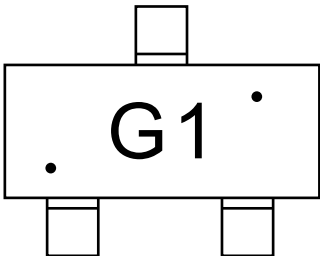


DIMENSIONS (mm are the original dimensions)

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 MMBT5551	SOT-23	3000	Tape and reel



9.Disclaimer

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