

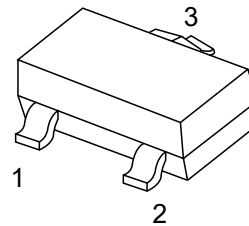
1.Features

- Excellent h_{FE} Linearity
- High DC Current Gain
- M28S 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}	40	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	1	A
Collector Power Dissipation	P_C	200	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	625	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 to 150	$^{\circ}\text{C}$



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

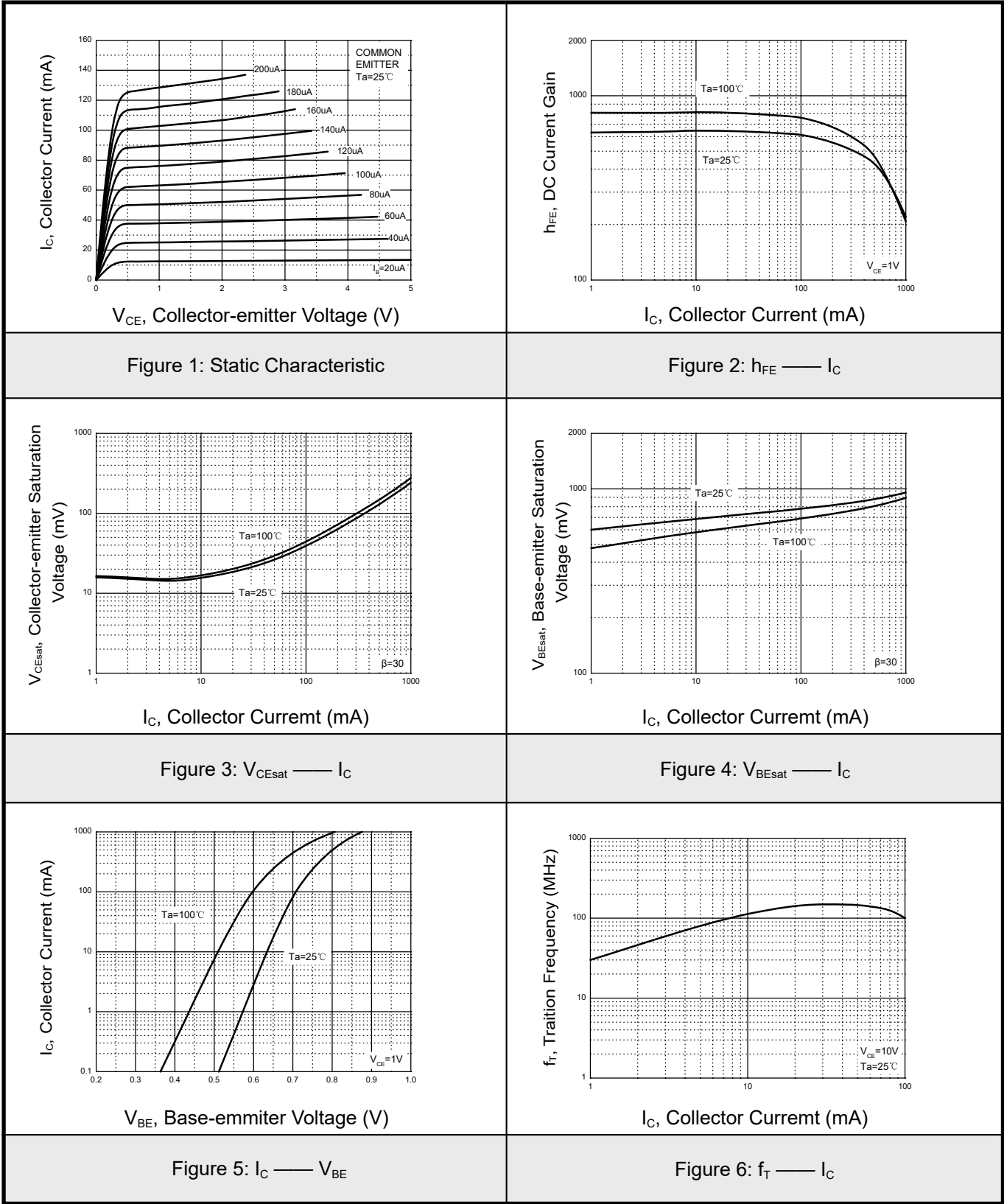
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=0.1\text{mA}$, $I_E=0$	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}$, $I_B=0$	20			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=0.1\text{mA}$, $I_C=0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB}=35\text{V}$, $I_E=0$			0.1	μA
Collector cut-off current	I_{CEO}	$V_{CE}=20\text{V}$, $I_B=0$			5	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=5\text{V}$, $I_C=0$			0.1	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=1\text{V}$, $I_C=1\text{mA}$	290			
	$h_{FE(2)}$	$V_{CE}=1\text{V}$, $I_C=100\text{mA}$	300		1000	
	$h_{FE(3)}$	$V_{CE}=1\text{V}$, $I_C=300\text{mA}$	300			
	$h_{FE(4)}$	$V_{CE}=1\text{V}$, $I_C=500\text{mA}$	300			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=600\text{mA}$, $I_B=20\text{mA}$			0.55	V
Transition frequency	f_T	$V_{CE}=10\text{V}$, $I_E=50\text{mA}$, $f=1\text{MHz}$	100			MHz
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1\text{MHz}$		9		pF

5. Classification of $h_{FE(1)}$

Rank	B	C	D
Range	300-550	500-700	650-1000
Marking	28S		

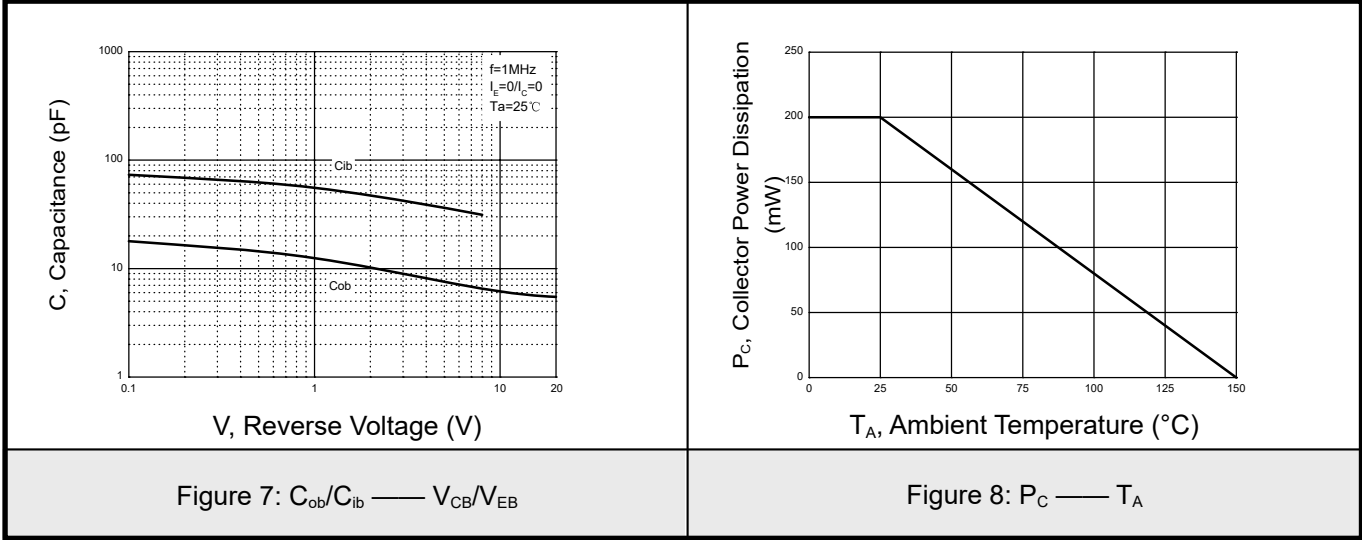


6.1 Typical Characteristics



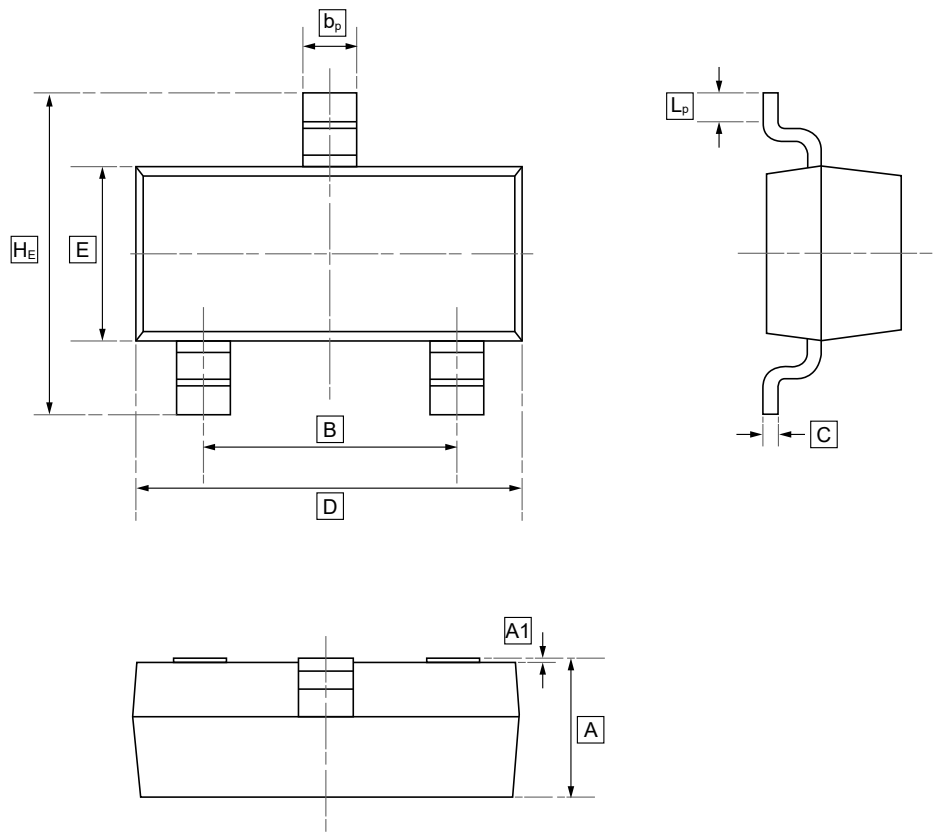


6.2Typical Characterisitcs





7.SOT-23 Package Outline Dimensions

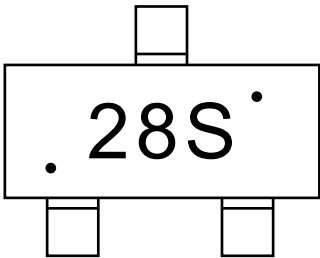


DIMENSIONS (mm are the original dimensions)

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 M28S	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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