

NPN Epitaxial Silicon Transistor

1 Description

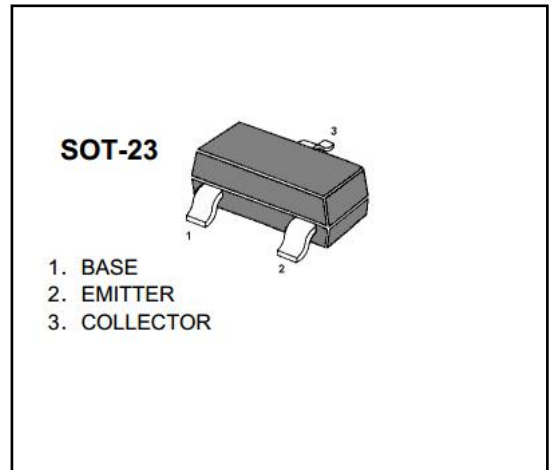
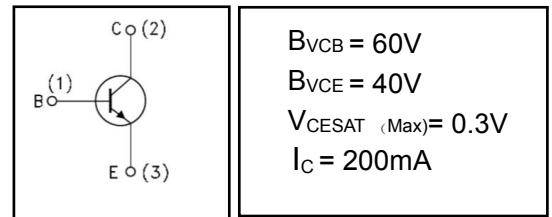
The MMBT3904 is a medium power low voltage transistor
MARKING: 1AM

2 Features

- High current output up to 0.2A
- Low saturation voltage
- Complement to MMBT3906

3 Applications

- WELL SUITABLE FOR PORTABLE EQUIPMENT
- SMALL LOAD SWITCH TRANSISTOR WITH
- HIGH GAIN AND LOW SATURATION VOLTAGE



4 Electrical Characteristics

4.1 Absolute Maximum Ratings (T_c=25°C, unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current (DC)	I_C	200	mA
*Collector Current (Pulse)	I_{CP}	300	mA
Base Current (DC)	I_B	50	mA
Collector Dissipation (T _c =25°C)	P_C	200	W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	- 55 ~ 150	°C

* PW≤10ms, Duty Cycle≤50%

4.2 Thermal Characteristics

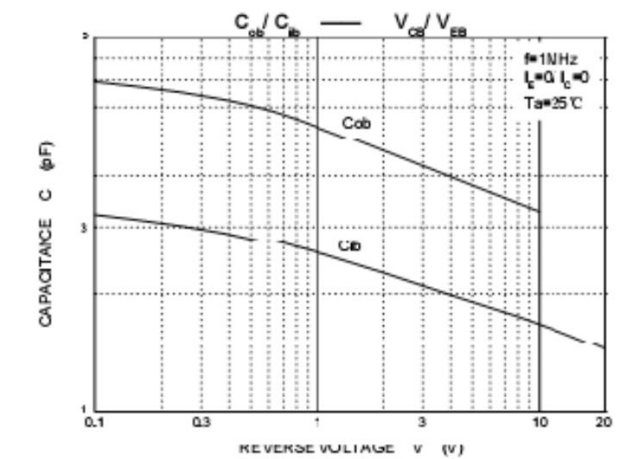
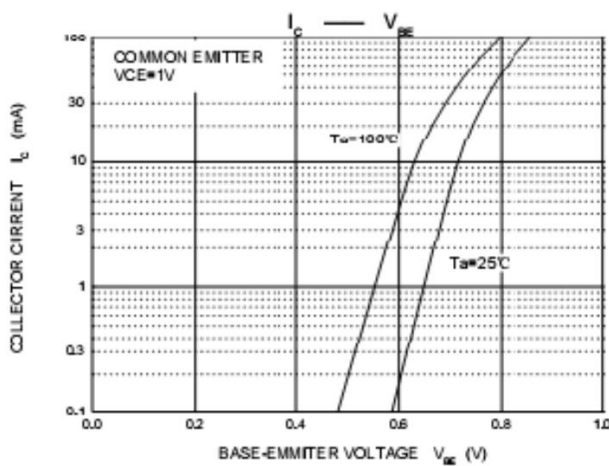
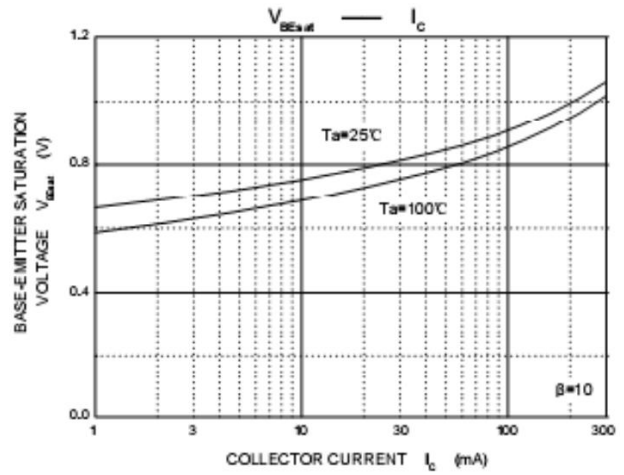
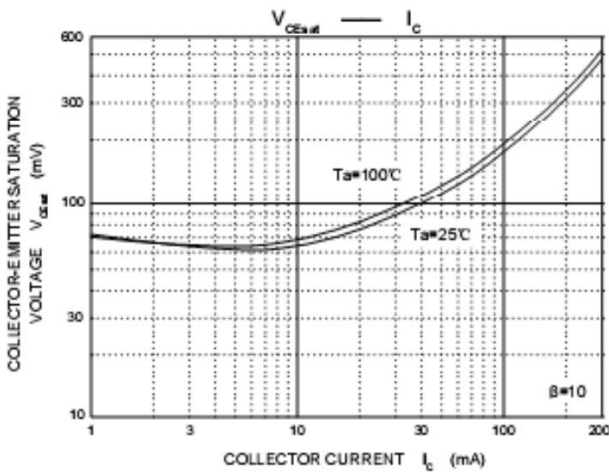
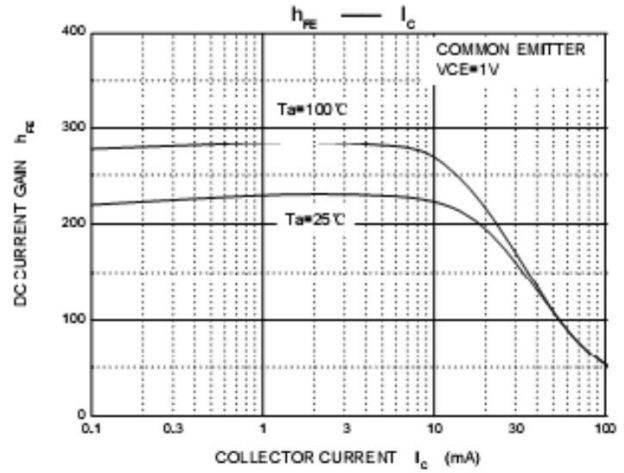
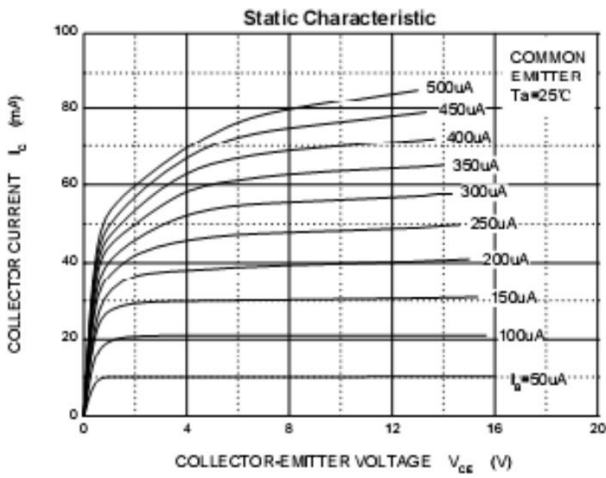
PARAMETER	SYMBOL	VALUE	UNIT
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	625	°C/W

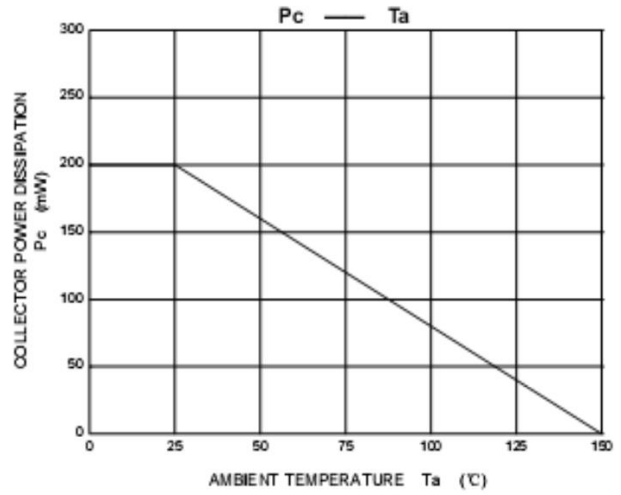
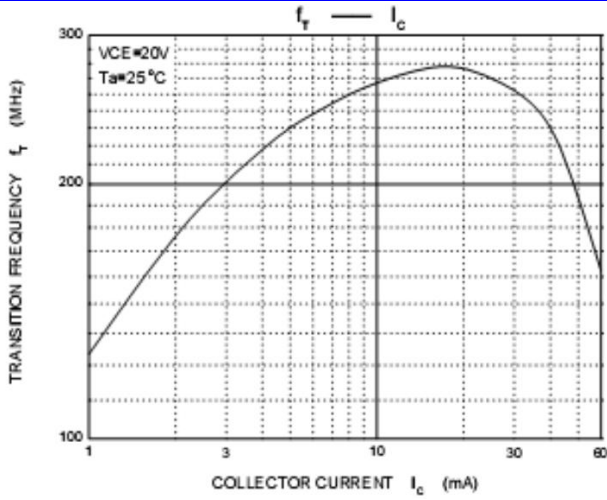
4.3 Electrical Characteristics (Tc=25°C, unless otherwise noted)

SYMBOL	PARAMETER	Test Conditions	Min	Typ	Max	Unit
I _{CES}	Collector Cut-off Current (V _{BE} = 0)	V _{CE} =60V	-	-	0.1	uA
I _{CEO}	Collector Cut-off Current (I _B = 0)	V _{CE} =30V	-	-	0.1	uA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} =5V	-	-	0.1	uA
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage (I _B = 0)	I _C =1mA	40	-	-	V
V _{(BR)CBO}	Collector-Base Breakdown Voltage (I _E = 0)	I _C =10uA	60	-	-	V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage (I _C = 0)	I _E =10uA	6	-	-	V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C =50mA I _B =5mA	-	-	0.3	V
		I _C =10mA I _B =0.1mA	-	-	0.2	
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C =50mA I _B =5mA	-	-	0.95	
h _{FE}	DC Current Gain	I _C =10mA, V _{CE} =1V	100	-	300	
		I _C =50mA, V _{CE} =1V*	60	-	300	
		I _C =100mA, V _{CE} =1V	30	-	300	
f _T	Transition Frequency	V _{CE} =20V, I _C =10mA, f=100MHZ	300	-	-	MHZ

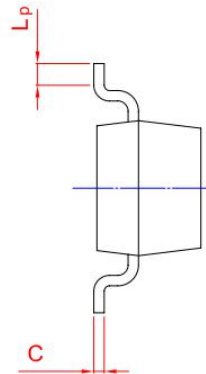
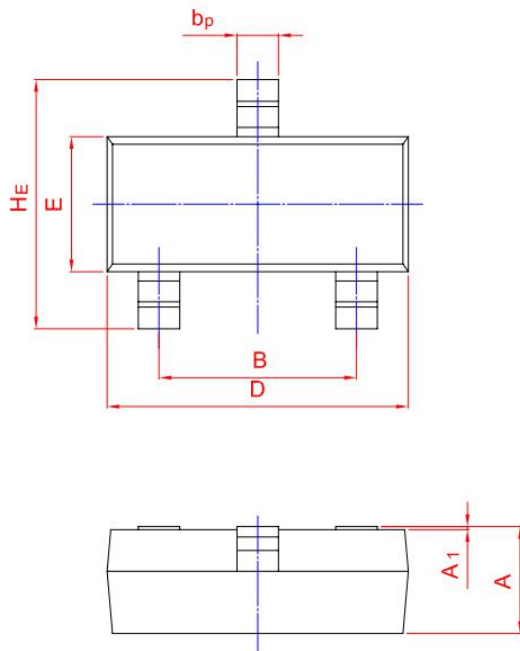
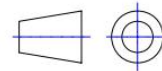
*Pulse test: pulse width ≤300μs, duty cycle ≤ 2.0%.

5 Typical characteristics diagrams





6 Dimensions



UNIT	A	B	b_p	C	D	E	HE	A1	Lp
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20

7 Attentions

- ROUM Semiconductor Technology CO.,LTD. reserves the right to change the specification without prior notice! The customer should obtain the latest version of the information before making the order and verify that the information is complete and up to date.
- It is the responsibility of the purchaser for any failure or failure of any semiconductor product under certain conditions. It is the responsibility of the purchaser to comply with safety standards and to take safety measures in the system design and machine manufacturing of Roma products in order to avoid potential risk of failure. Injury or property damage.
- Product promotion is endless, our company will be dedicated to provide customers with better products.

8 Appendix

Revision history:

Date	REV.	Description	Page
2017.08.11	1.0	Original	