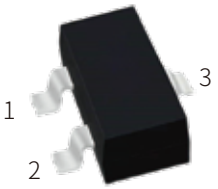
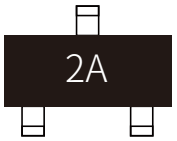
FEATURES

- Complementary to MMBT3904
- Power dissipation of 200mW
- High stability and high reliability



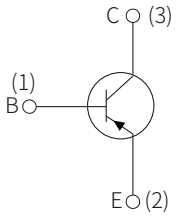
SOT-23



Marking

MECHANICAL DATA

- SOT-23 small outline plastic package
- Epoxy UL: 94V-0
- Mounting position: Any



Schematic Symbol

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS (T_A=25°C)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-40	V
Collector-Emitter Voltage	V_{CEO}	-40	
Emitter-Base Voltage	V_{EBO}	-5	
Collector Current	I_C	-0.2	A
Collector Power Dissipation	P_C	0.2	W
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	625	°C/W
Operation Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C)

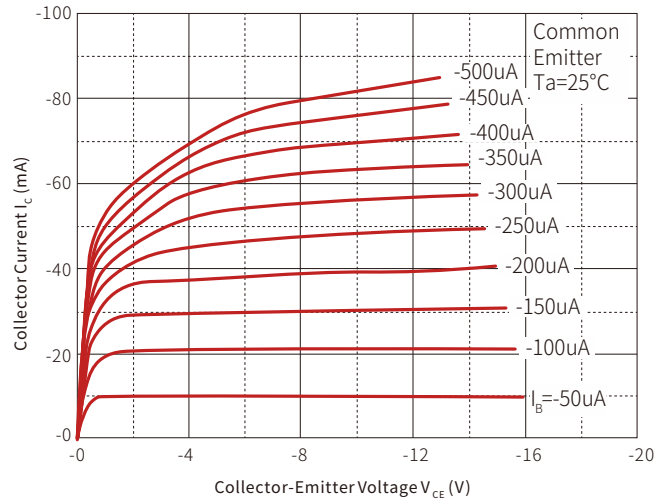
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-10uA,I_E=0	-40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=-1mA,I_B=0	-40			
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-10uA,I_C=0	-5			
Collector cut-off current	I_{CEX}	V_{CE}=-30V, $V_{EB(off)}$=-3V			-100	nA
Collector cut-off current	I_{CBO}	V_{CB}= -40V, I_E=0			-50	
Emitter cut-off current	I_{EBO}	V_{EB}=-5V, I_C=0			-50	
DC current gain	$h_{FE(1)}$	V_{CE}=-1V, I_C=-10mA		100	300	
	$h_{FE(2)}$	V_{CE}=-1V, I_C=-50mA		60		
	$h_{FE(3)}$	V_{CE}=-1V, I_C=-100mA		30		
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-50mA, I_B=-5mA			-0.30	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=-50mA, I_B=-5mA			-0.95	
Transition frequency	f_T	V_{CE}=-20V,I_C=-10mA, f=100MHz		300		MHz
Delay time	t_d	V_{CC}=-3V, $V_{BE(off)}$=-0.5V I_C=-10mA,I_{B1}=-1mA			35	nS
Rise time	t_r	V_{CC}=-3V, $V_{BE(off)}$=-0.5V I_C=-10mA,I_{B1}=-1mA			35	
Storage time	t_s	V_{CC}=-3V, I_C=-10mA, I_{B1}= I_{B2}=-1mA			225	
Fall time	t_f	V_{CC}=-3V, I_C=-10mA, I_{B1}= I_{B2}=-1mA			75	

CLASSIFICATION OF $H_{FE(1)}$

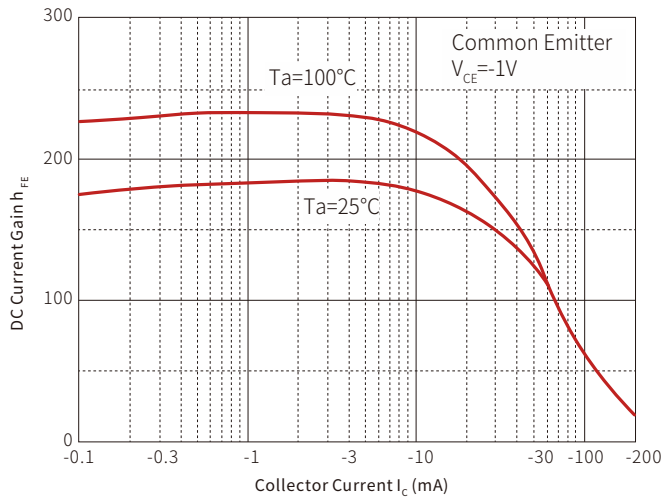
HFE	100-300	
Rank	L	H
Range	100-200	200-300

TYPICAL CHARACTERISTICS

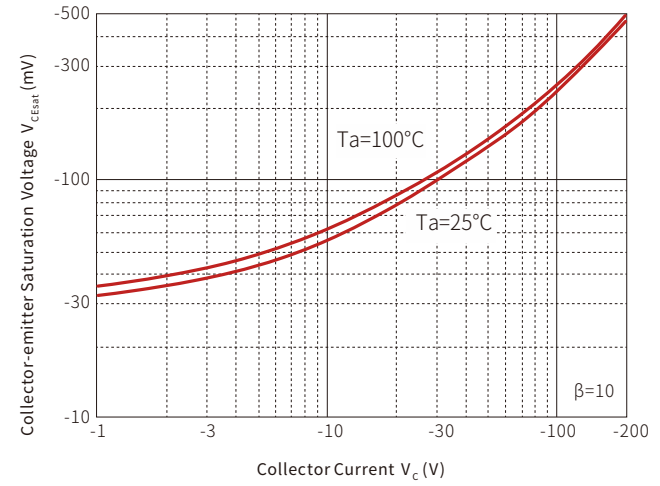
Static Characteristic



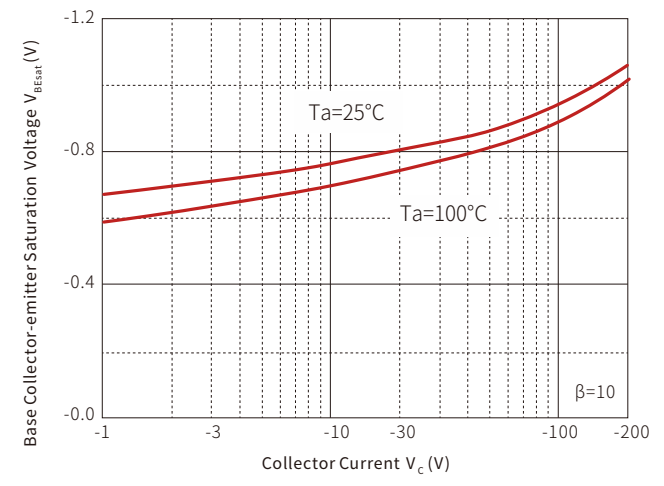
h_{FE} ——— I_C



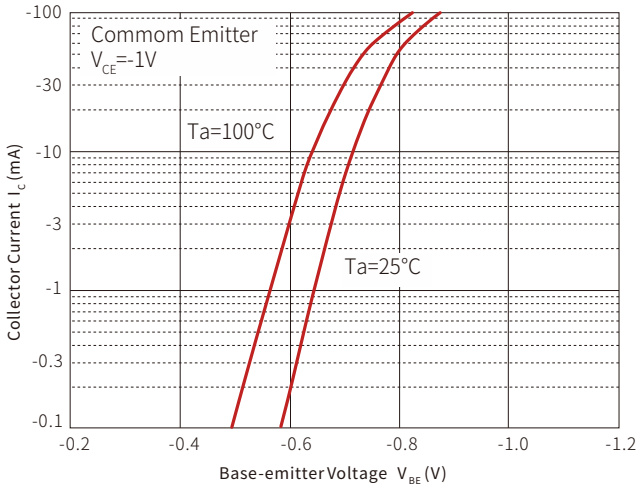
$V_{BE\,sat}$ ——— I_C



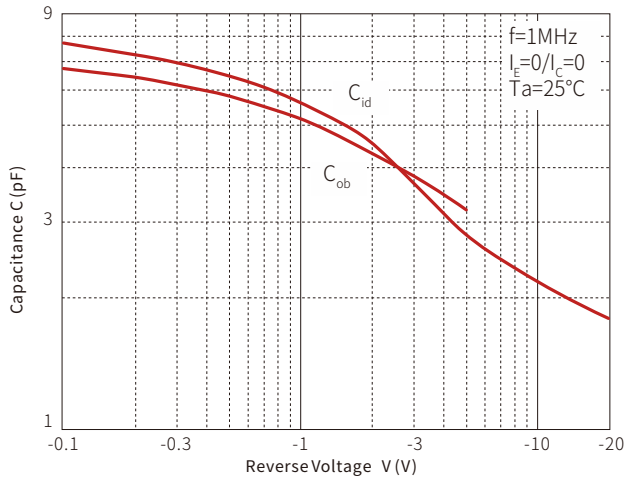
$V_{CE\,sat}$ ——— I_C



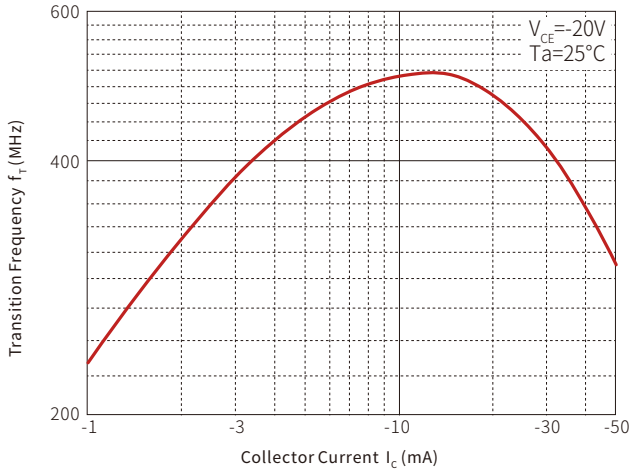
I_C ——— V_{BE}



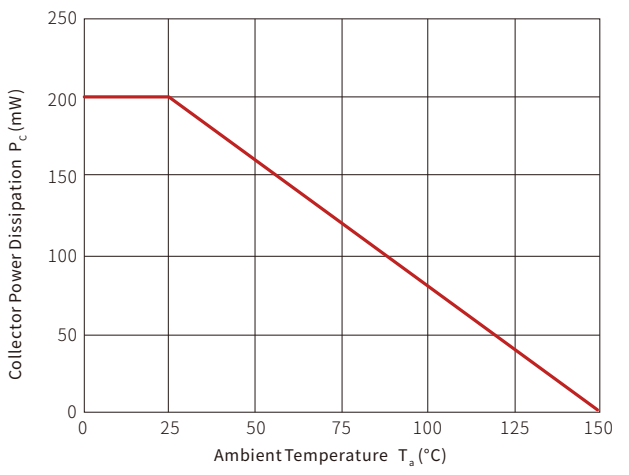
C_{ob}/C_{ib} ——— V_{CB}/V_{EB}



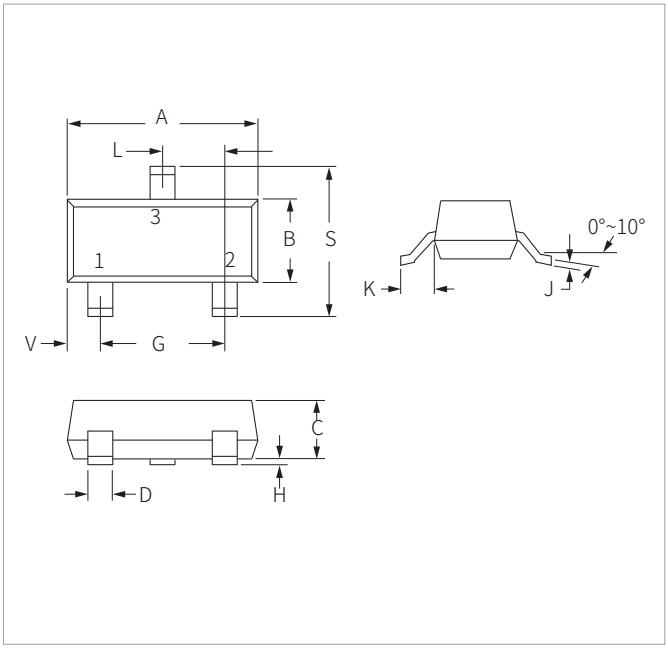
f_T ——— I_C



P_C ——— T_a

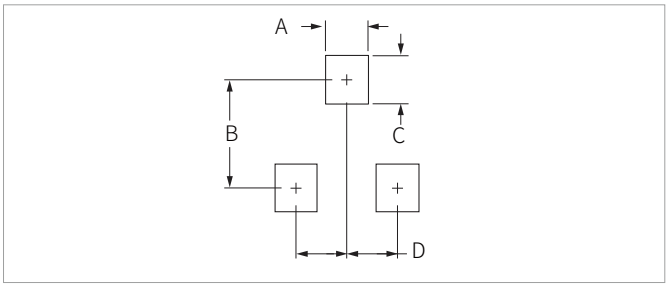


SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.05	0.110	0.120
B	1.20	1.40	0.047	0.055
C	0.90	1.15	0.035	0.045
D	0.37	0.50	0.015	0.020
G	1.75	2.05	0.069	0.081
H	0.01	0.100	0.001	0.004
J	0.085	0.180	0.003	0.007
K	0.35	0.69	0.014	0.029
L	0.89	1.02	0.035	0.040
S	2.10	2.65	0.083	0.104
V	0.45	0.60	0.018	0.024

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
MMBT3906	SOT-23	3000PCS	7”

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Minhang Shanghai China
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Email: sales18@semiware.com

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Email: sales17@semiware.com

Technical Support
Tel: 86-21-3463-7654
Email: fae01@semiware.com

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Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

By QR Code

Website Wechat

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