

FEATURES

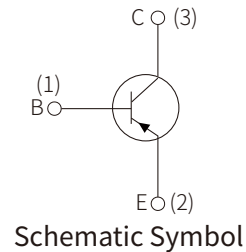
- Complementary to MMBT3904
- Power dissipation of 200mW
- High stability and high reliability

MECHANICAL DATA

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

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 _{θJA}	625	°C/W
Operation Junction and Storage Temperature Range	T _J , T _{STG}	-55~+150	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C)

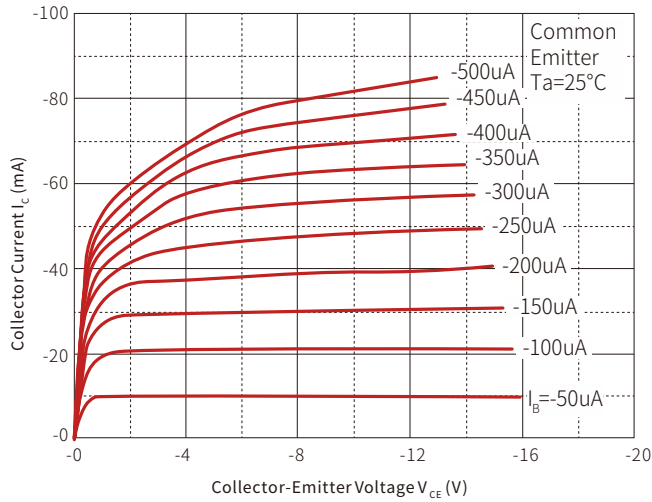
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0$	-40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -1mA, I_B = 0$	-40			
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0$	-5			
Collector cut-off 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 $h_{FE(1)}$

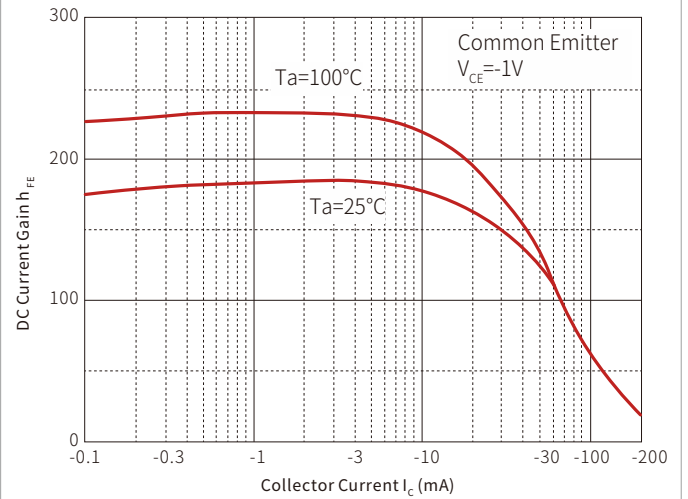
HFE	100-300	
Rank	L	H
Range	100-200	200-300

TYPICAL CHARACTERISTICS

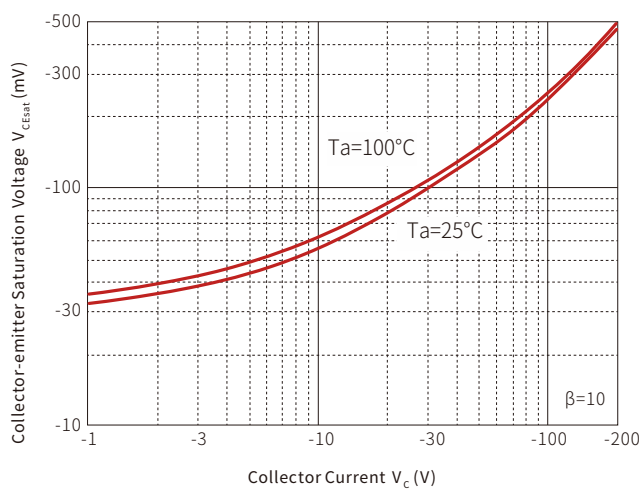
Static Characteristic



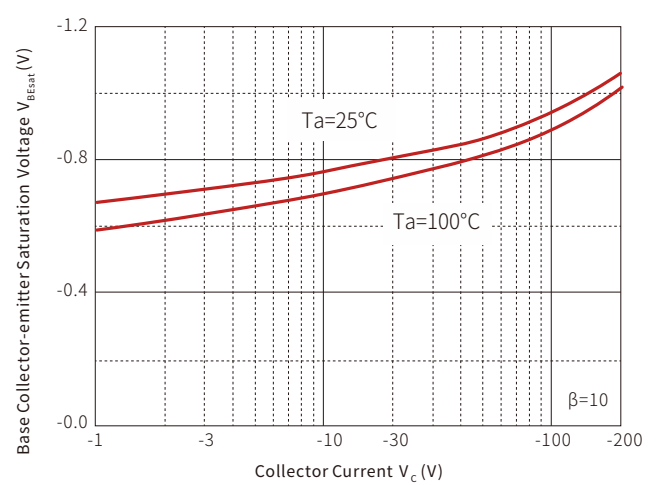
h_{FE} — I_C

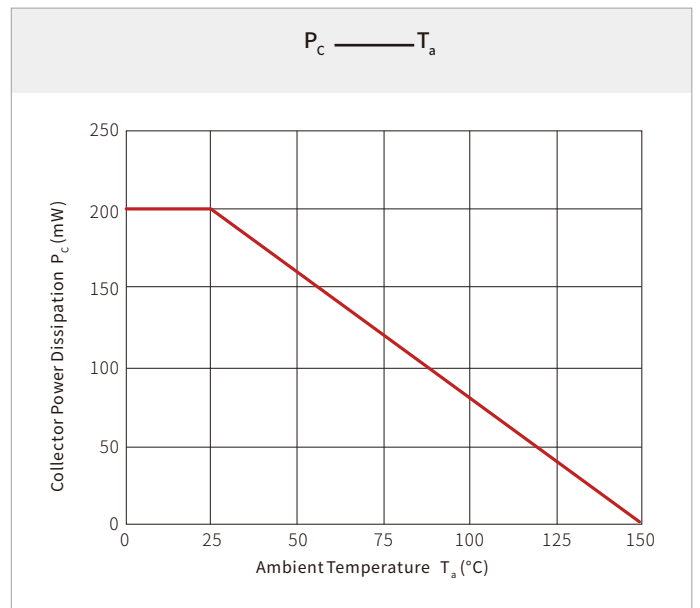
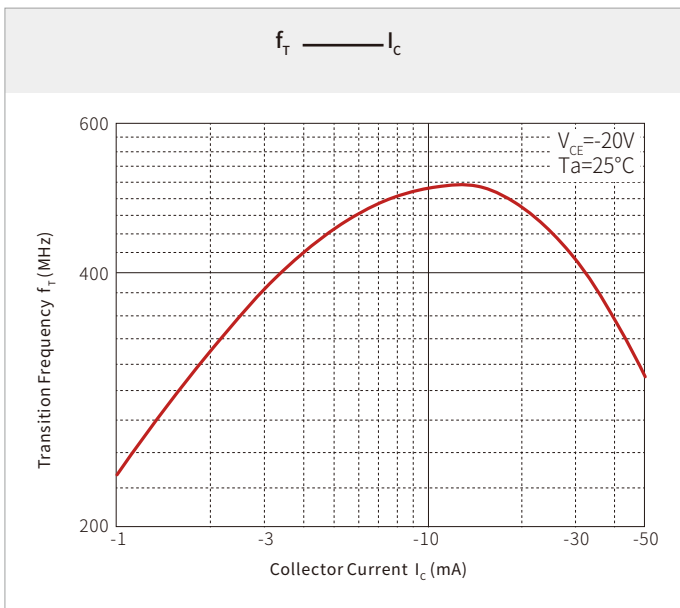
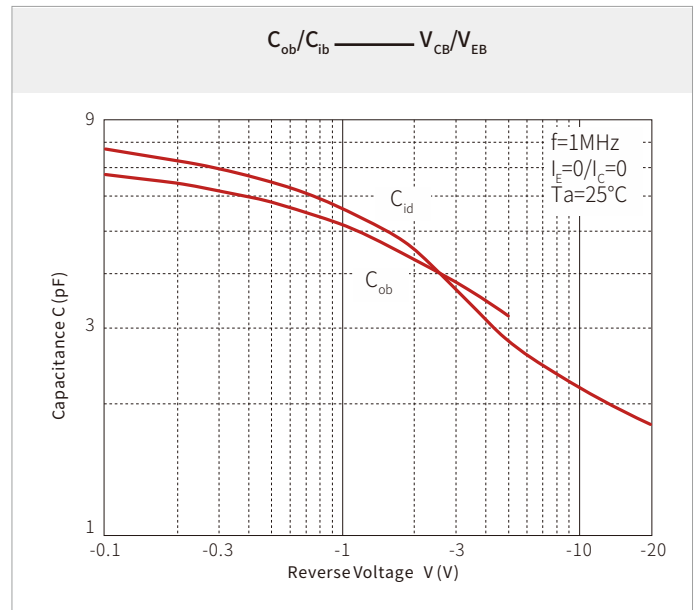
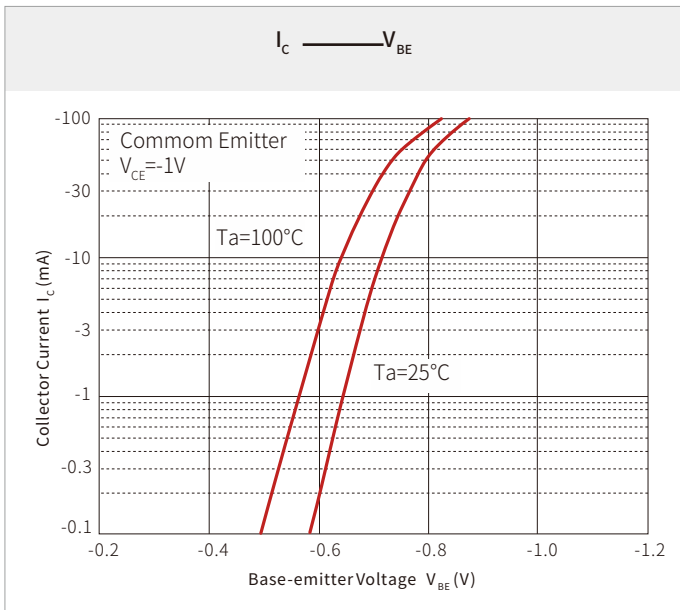


$V_{BE sat}$ — I_C

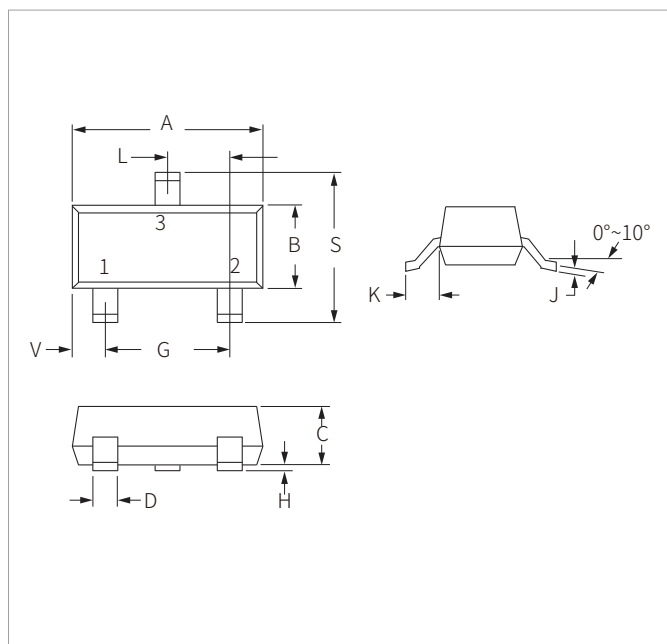


$V_{CE sat}$ — I_C



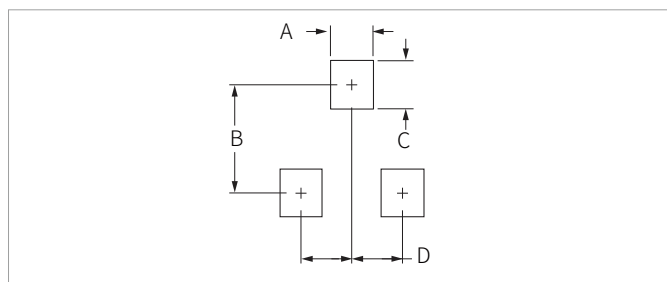


SOT-23 PACKAGE INFORMATION



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"

Headquarters

No.3387 Shendu Road
Pujiang I&E Park
Minhang Shanghai China
201000

Hotline

400-021-5756

Web

<https://www.semiware.com>

Sales Center

Tel: 86-21-3463-7458
Email: sales18@semiware.com

Customer Service

Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support

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

Complaint & Suggestions

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

By QR Code

Website



Wechat

To find your local partner within Semiware's global website: www.semiware.com

© 2022 Semiware Semiconductor Inc.

The content of this document has been carefully checked and understood. However, neither Semiware nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Semiware does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Chinese law and resulting disputes shall be settled by the courts at the place of business of Semiware. Latest publications and a complete disclaimer can be downloaded from the Semiware website. All trademarks recognized.