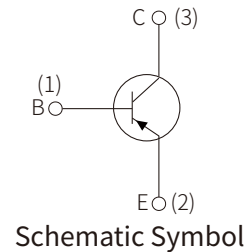


## FEATURES

- | Epitaxial planar die construction
- | Complementary NPN Type available(MMBT2222A)



## APPLICATIONS

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

## APPROVALS

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

## MAXIMUM RATINGS (T<sub>A</sub>=25°C)

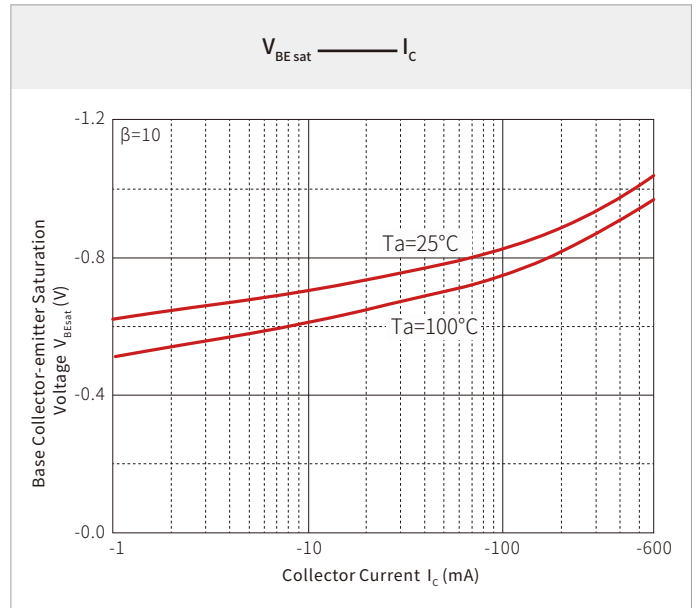
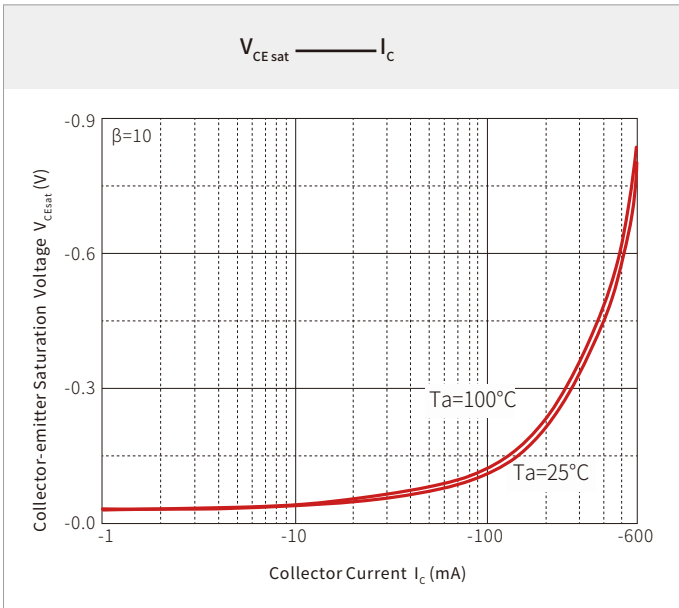
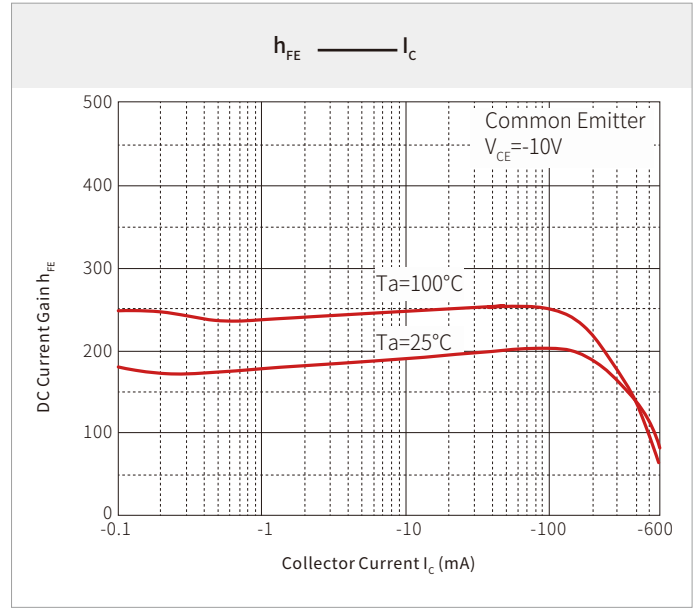
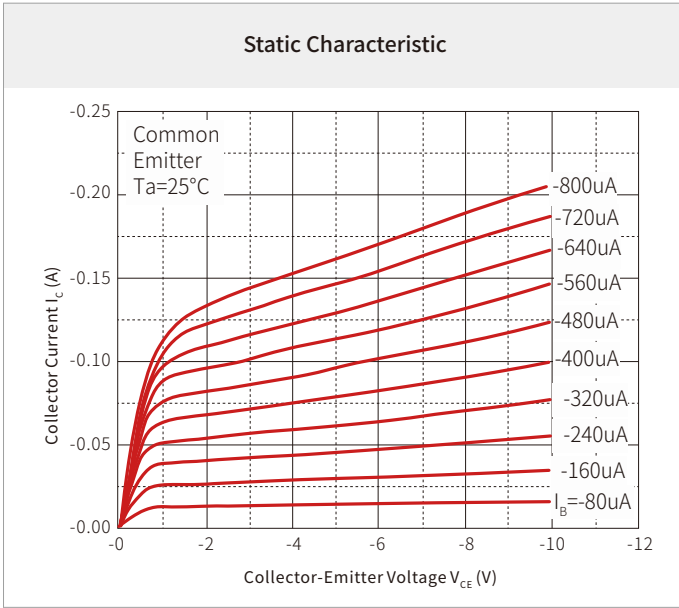
Parameter	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CBO</sub>	-60	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-60	
Emitter-Base Voltage	V <sub>EBO</sub>	-5	
Collector Current -Continuous	I <sub>C</sub>	-600	mA
Total Device Dissipation	P <sub>D</sub>	250	mW
Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	500	°C/W
Operation Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

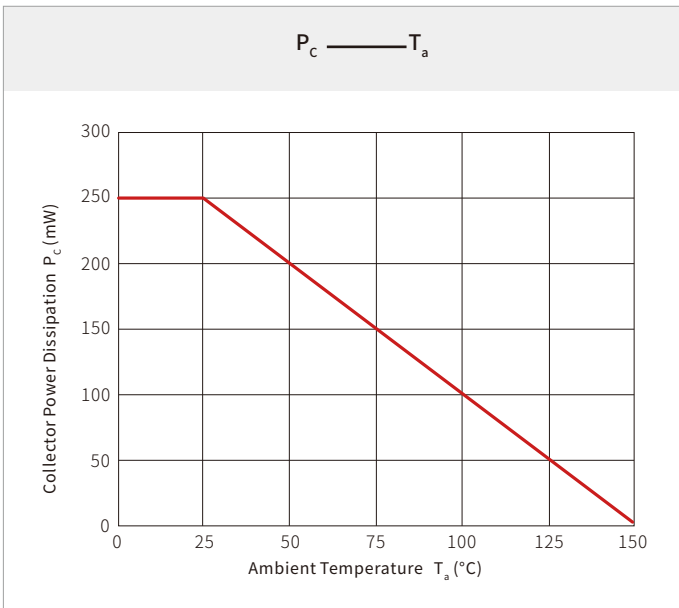
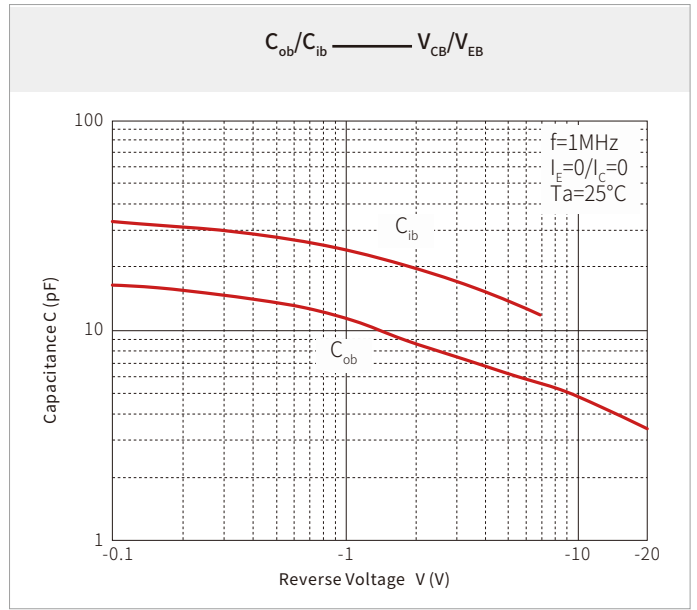
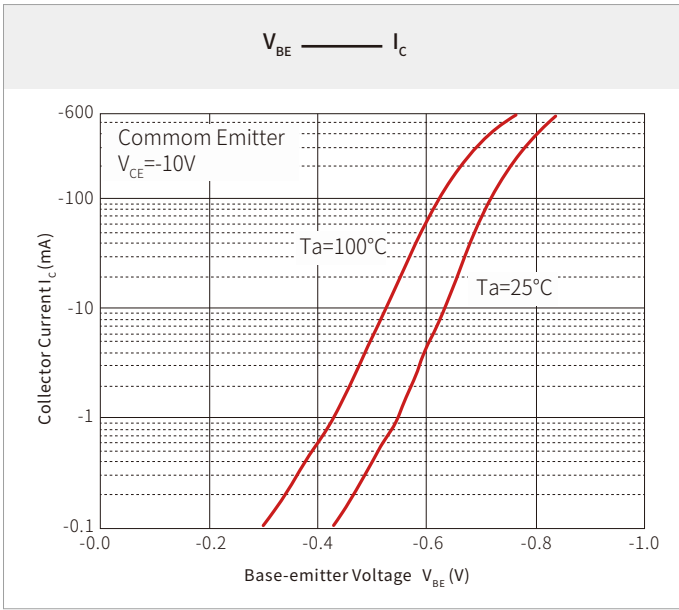
## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =-10μA, I <sub>E</sub> =0	-60			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO*</sub>	I <sub>C</sub> =-10mA, I <sub>B</sub> =0	-60			
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =-10μA, I <sub>C</sub> =0	-5			
Collector cut-off current	I <sub>CEX</sub>	V <sub>CE</sub> =-30V, V <sub>BE(off)</sub> =-0.5V			-50	nA
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =-50V, I <sub>E</sub> =0			-20	
Base cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =-3V, I <sub>C</sub> =0			-10	
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =-10V, I <sub>C</sub> =-150mA	100		300	
	h <sub>FE(2)</sub>	V <sub>CE</sub> =-10V, I <sub>C</sub> =-0.1mA	75			
	h <sub>FE(3)</sub>	V <sub>CE</sub> =-10V, I <sub>C</sub> =-1mA	100			
	h <sub>FE(4)</sub>	V <sub>CE</sub> =-10V, I <sub>C</sub> =-10mA	100			
	h <sub>FE(5)</sub>	V <sub>CE</sub> =-10V, I <sub>C</sub> =-500mA	50			
Collector-emitter saturation voltage	V <sub>CE(sat)1*</sub>	I <sub>C</sub> =-150mA, I <sub>B</sub> =-15mA			-0.4	V
	V <sub>CE(sat)2*</sub>	I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA			-1.6	
Base-emitter saturation voltage	V <sub>BE(sat)1*</sub>	I <sub>C</sub> =-150mA, I <sub>B</sub> =-15mA			-1.3	
	V <sub>BE(sat)2*</sub>	I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA			-2.6	
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =-20V, I <sub>C</sub> =-50mA, f=100MHz	200			MHz
Delay time	td	V <sub>CE</sub> =-30V I <sub>C</sub> =-150mA, I <sub>B1</sub> =-15mA			10	nS
Rise time	tr				25	
Storage time	ts	V <sub>CE</sub> =-6V, I <sub>C</sub> =-150mA, I <sub>B1</sub> =-I <sub>B2</sub> =-15mA			225	
Fall time	tf				60	

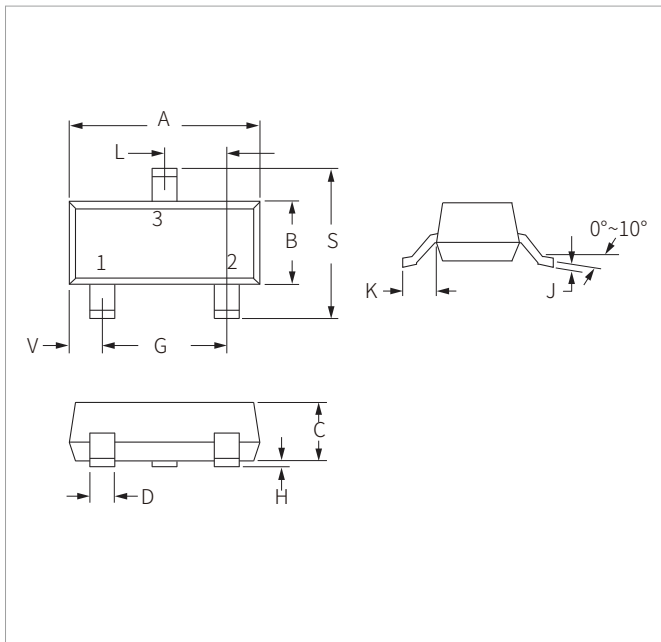
\*Pulse test: tp ≤ 300μs, δ ≤ 0.02

# TYPICAL CHARACTERISTICS



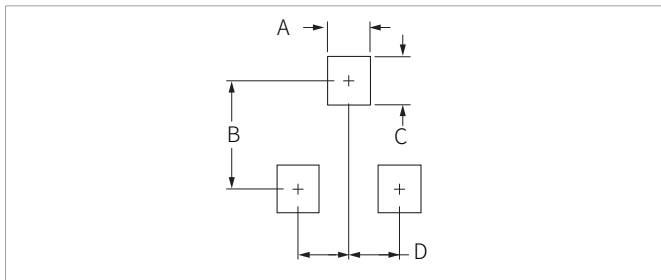


## SOT-23 PACKAGE INFORMATION



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
MMBT2907A	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](mailto:sales18@semiware.com)

**Customer Service**

Tel: 86-21-5484-1001  
Email: [sales17@semiware.com](mailto:sales17@semiware.com)

**Technical Support**

Tel: 86-21-3463-7654  
Email: [fae01@semiware.com](mailto:fae01@semiware.com)

**Complaint & Suggestions**

Tel: 86-21-3463-7172  
Ext: 8868  
Email: [cs03@semiware.com](mailto:cs03@semiware.com)

**By QR Code**

Website



Wechat

To find your local partner within Semiware' s global website: [www.semiware.com](http://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.