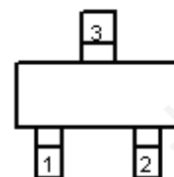


Features

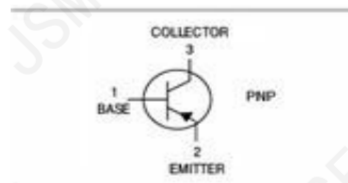
- Epitaxial planar die construction
- Complimentary to BC817
- High collector current
- High current gain
- Low collector-emitter saturation voltage



SOT-23

Mechanical Data

- Case: SOT-23
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BC807-25-JSM	SOT-23	3000 pcs / Tape & Reel	5B

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V _{CBO}	-50	V
Collector-Emitter Breakdown Voltage	V _{CEO}	-45	V
Emitter-Base Breakdown Voltage	V _{EBO}	-5	V
Continuous Collector Current	I _C	-0.5	A

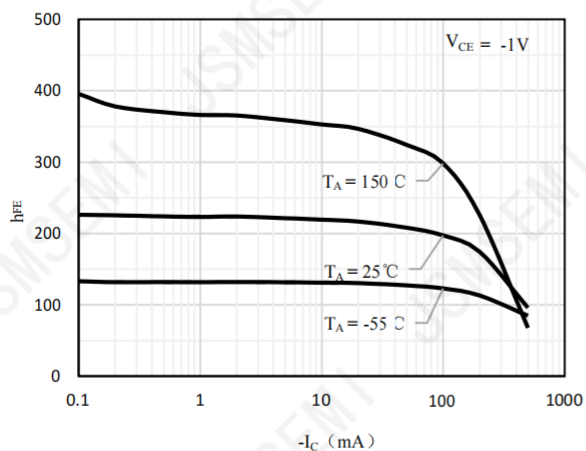
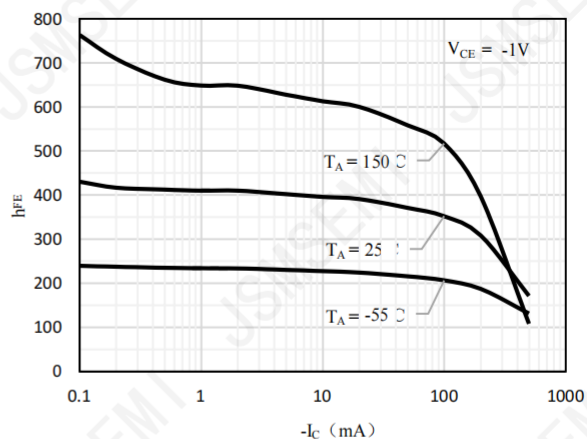
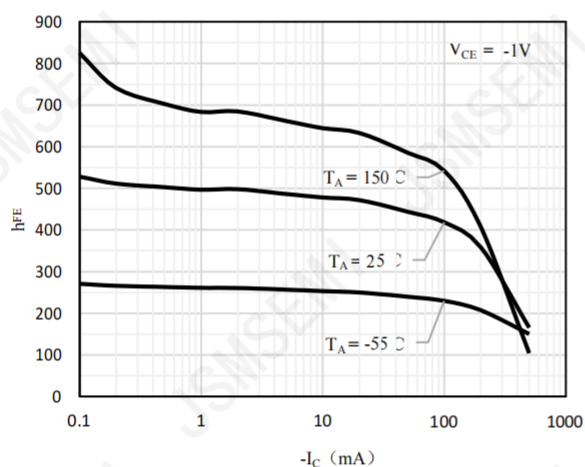
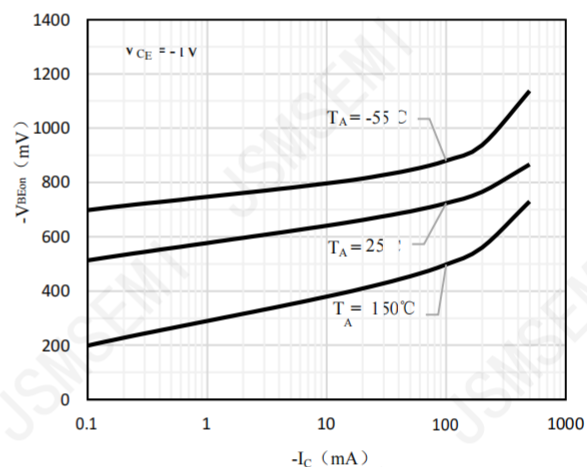
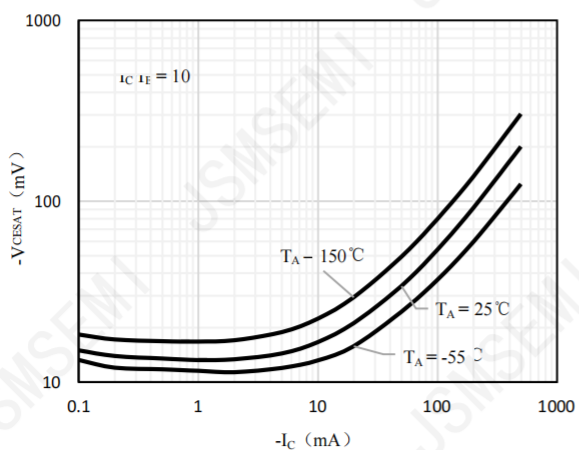
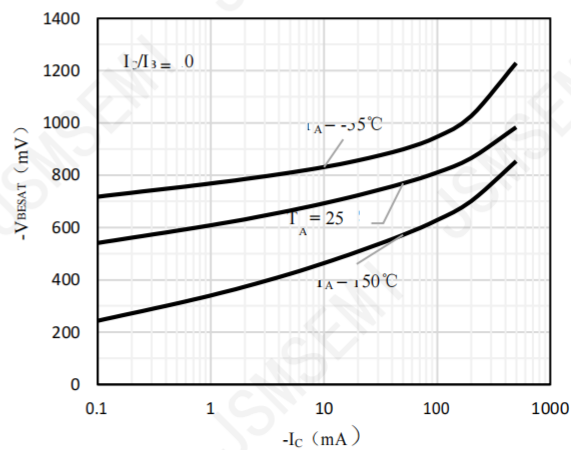
Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	300	mW
Thermal Resistance Junction-to-Air *1	R _{θJA}	395	°C/W
Thermal Resistance Junction-to-Case *1	R _{θJC}	218	°C/W
Thermal Resistance Junction-to-Lead *1	R _{θJL}	191	°C/W
Operating junction Temperature	T _J	-55 ~ +150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C

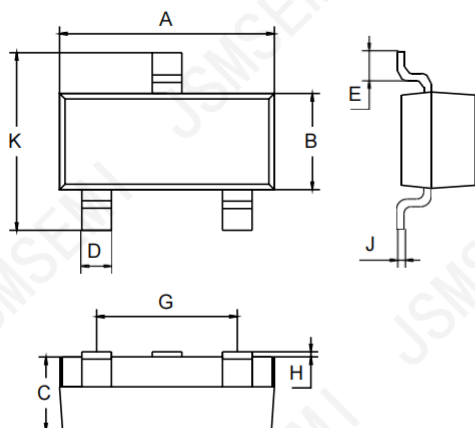
Note 1: The data tested by surface mounted on a 15mm * 15mm * 1mm FR4-epoxy P.C.B

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter		Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0$	-50	-	-	V
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C = -10\text{mA}, I_B = 0$	-45	-	-	V
Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	$I_E = -10\mu\text{A}, I_C = 0$	-5	-	-	V
Collector Cut-off Current		I_{CBO}	$V_{CB} = -25\text{V}, I_E = 0$	-	-	-100	nA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = -4\text{V}, I_C = 0$	-	-	-100	nA
DC Current Gain	BC807-16	h_{FE}	$V_{CE} = -1\text{V}, I_C = -100\text{mA}$	100	197	250	-
	BC807-25			160	352	400	-
	BC807-40			250	418	600	-
	BC807-16		$V_{CE} = -1\text{V}, I_C = -300\text{mA}$	60	-	-	-
	BC807-25			100	-	-	-
	BC807-40			170	-	-	-
	BC807-40		$V_{CE} = -1\text{V}, I_C = -500\text{mA}$	40	-	-	-
Collector-emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$	-	-	-0.7	V
Base-emitter Saturation Voltage		$V_{BE(sat)}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$	-	-	-1.2	V
Transition Frequency		f_T	$I_C = -10\text{mA}, V_{CE} = -5\text{V}$	-	200	-	MHz
Collector Output Capacitance		C_{OBO}	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$	-	-	10	pF

Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Fig 1 h_{FE} vs. I_C (BC807-16)

Fig 2 h_{FE} vs. I_C (BC807-25)

Fig 3 h_{FE} vs. I_C (BC807-40)

Fig 4 $V_{BE(ON)}$ vs. I_C

Fig 5 $V_{CE(sat)}$ vs. I_C

Fig 6 $V_{BE(sat)}$ vs. I_C

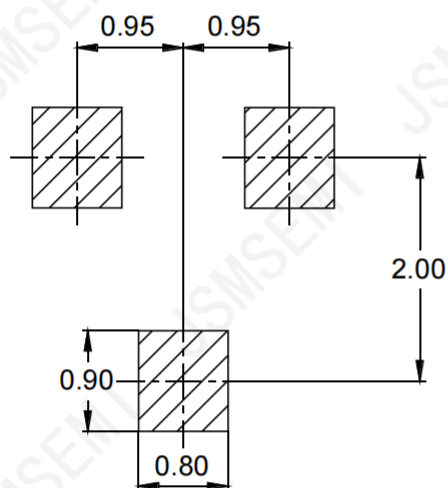
Package Outline Dimensions (Unit: mm)



SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.9	1.1
D	0.3	0.5
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.05	0.15
K	2.20	2.60

Package Outline Dimensions (Unit: mm)

SOT-23



Revision History

Rev.	Change	Date
V1.0	Initial version	2/23/2024

Important Notice

JSMSEMI Semiconductor (JSMSEMI) PRODUCTS ARE NEITHER DESIGNED NOR INTENDED FOR USE IN MILITARY AND/OR AEROSPACE, AUTOMOTIVE OR MEDICAL DEVICES OR SYSTEMS UNLESS THE SPECIFIC JSMSEMI PRODUCTS ARE SPECIFICALLY DESIGNATED BY JSMSEMI FOR SUCH USE. BUYERS ACKNOWLEDGE AND AGREE THAT ANY SUCH USE OF JSMSEMI PRODUCTS WHICH JSMSEMI HAS NOT DESIGNATED FOR USE IN MILITARY AND/OR AEROSPACE, AUTOMOTIVE OR MEDICAL DEVICES OR SYSTEMS IS SOLELY AT THE BUYER' S RISK.

JSMSEMI assumes no liability for application assistance or customer product design. Customers are responsible for their products and applications using JSMSEMI products.

Resale of JSMSEMI products or services with statements diferent from or beyond the parameters stated by JSMSEMI for that product or service voids all express and any implied warranties for the associated JSMSEMI product or s ervice. JSMSEMI is not responsible or liable for any such statements.

JSMSEMI All Rights Reserved. Information and data in this document are owned by JSMSEMI wholly and may not be edited, reproduced, or redistributed in any way without the express written consent from JSMSEMI.

Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the JSMSEMI product that you intend to use.

For additional information please contact Kevin@jsemsemi.com or visit www.jsemsemi.com