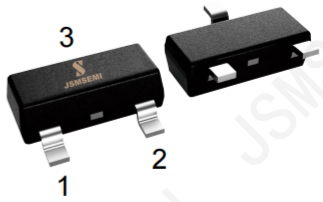
FEATURES

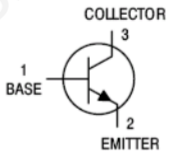
- High current gain
- Excellent h_{FE} linearity
- Low noise between 30Hz and 15kHz
- For AF input stages and driver applications



SOT-23

APPLICATIONS

- General purpose switching and amplification



ORDERING INFORMATION

Type No.	Marking	Package Code
BC847C,215-JSM	1G	SOT-23

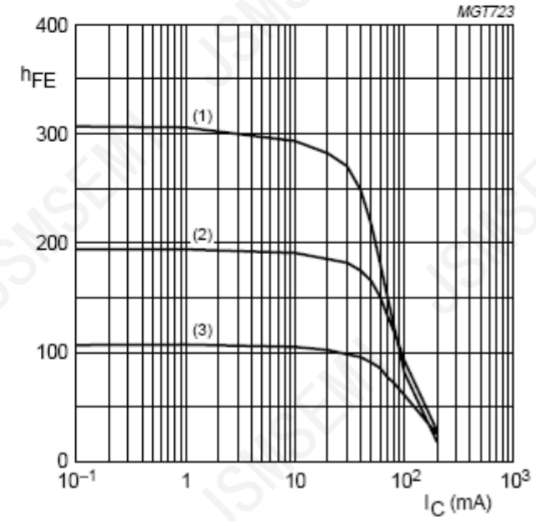
MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	0.1	A
P_C	Collector Dissipation	250	mW
$R_{\theta JA}$	Thermal Resistance,Junction to Ambient	500	℃/W
T_J, T_{STG}	Junction and Storage Temperature	-55 to +150	℃

ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

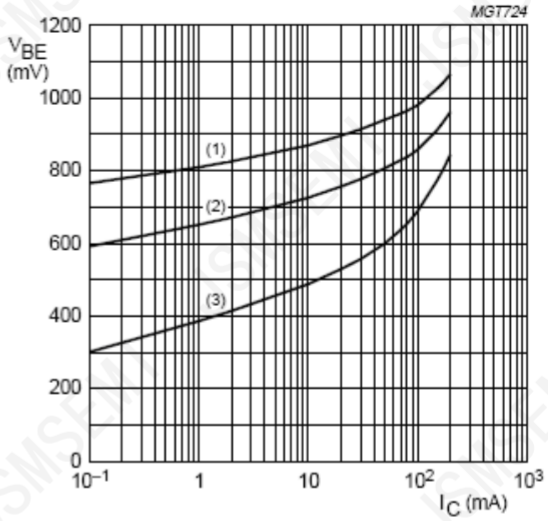
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10μA,I_E=0	50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=10mA,I_B=0	45			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA,I_C=0	6			V
Collector-base cut-off current	I_{CBO}	V_{CB}=30V,I_E=0 V_{CB}=30V,I_E=0,T_j=150℃			15 5	nA uA
Emitter-base cut-off current	I_{EBO}	V_{EB}=5V,I_C=0			100	nA
Collector-emitter cut-off current	I_{CEO}	V_{CE}=30V,I_B=0			1	mA
DC current gain	h_{FE}	V_{CE}=5V,I_C=10uA		480		
DC current gain	h_{FE}	V_{CE}=5V,I_C=2mA	420		800	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=10mA, I_B=0.5mA I_C=100mA, I_B=5mA		0.09 0.2	0.25 0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=10mA, I_B=0.5mA I_C=100mA, I_B=5mA		0.7 0.9	0.9 1.1	V
Base-emitter voltage	$V_{BE(on)}$	I_C=2mA,V_{CE}=5V I_C=10mA,V_{CE}=5V	0.58	0.66	0.7 0.77	V
Collector capacitance	C_C	V_{CB}=10V,I_E=I_e=0, f=1MHz		2.5		pF
Transition frequency	f_T	V_{CE}=5V, I_C= 10mA f=100MHz	100			MHz

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified



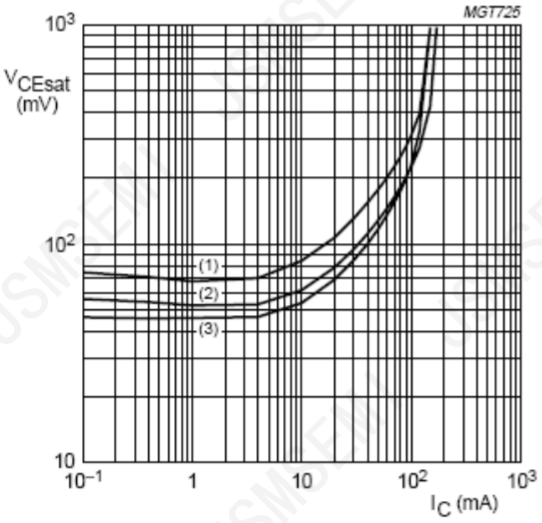
BC846A; V_{CE} = 5 V.
(1) T_{amb} = 150 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = −55 °C.

Fig.1 DC current gain as a function of collector current; typical values.



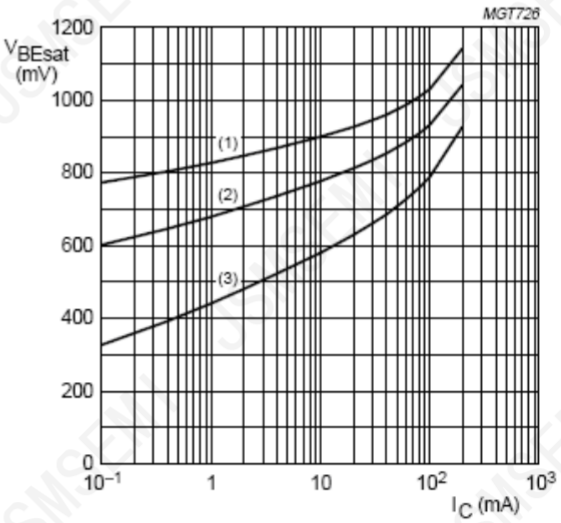
BC846A; V_{CE} = 5 V.
(1) T_{amb} = −55 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = 150 °C.

Fig.2 Base-emitter voltage as a function of collector current; typical values.



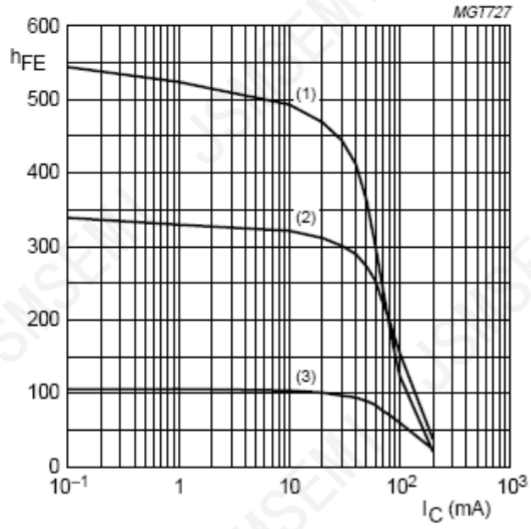
BC846A; I_C/I_B = 20.
(1) T_{amb} = 150 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = −55 °C.

Fig.3 Collector-emitter saturation voltage as a function of collector current; typical values.



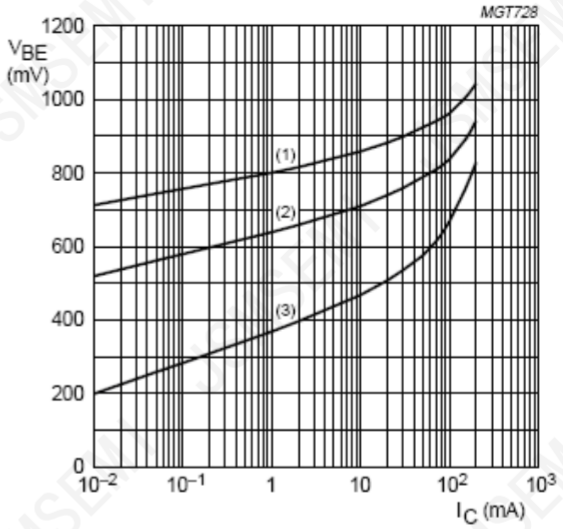
BC846A; I_C/I_B = 10.
(1) T_{amb} = −55 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = 150 °C.

Fig.4 Base-emitter saturation voltage as a function of collector current; typical values.



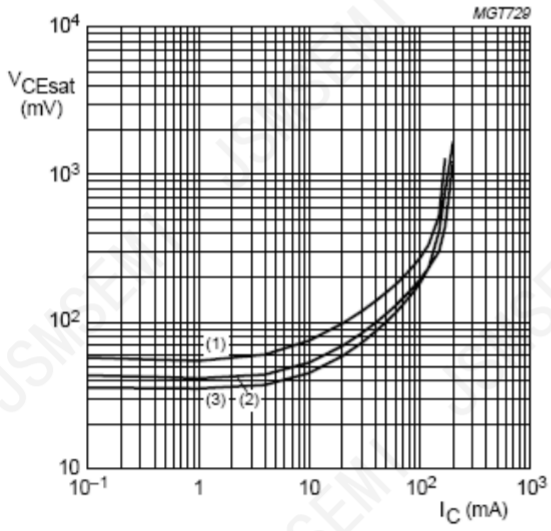
BC847B; V_{CE} = 5 V.
(1) T_{amb} = 150 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = −55 °C.

Fig.5 DC current gain as a function of collector current; typical values.



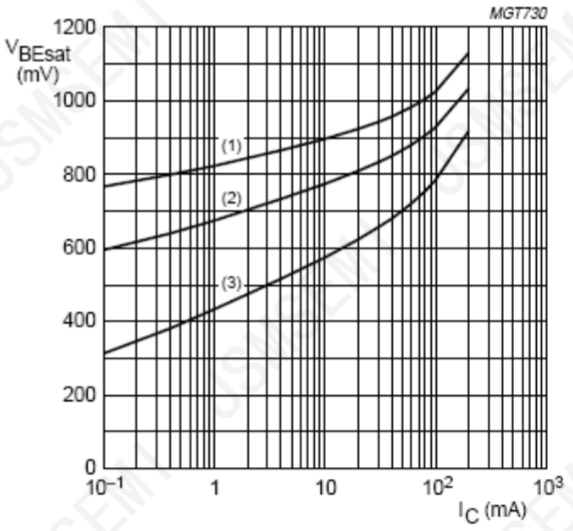
BC847B; V_{CE} = 5 V.
(1) T_{amb} = −55 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = 150 °C.

Fig.6 Base-emitter voltage as a function of collector current; typical values.



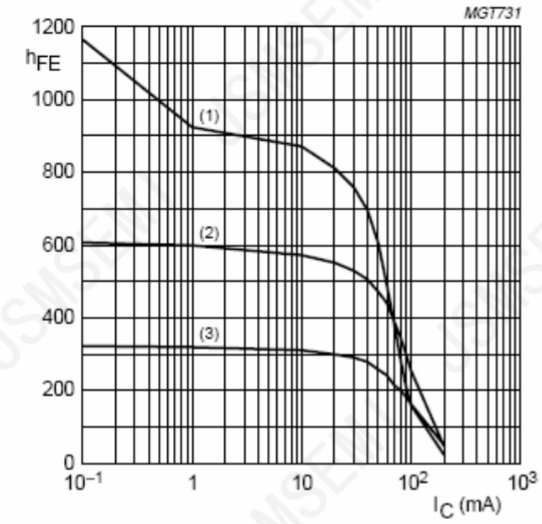
BC847B; I_C/I_B = 20.
(1) T_{amb} = 150 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = −55 °C.

Fig.7 Collector-emitter saturation voltage as a function of collector current; typical values.



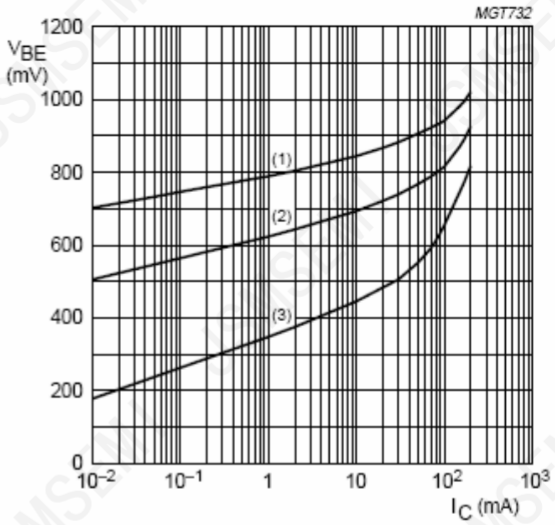
BC847B; I_C/I_B = 10.
(1) T_{amb} = −55 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = 150 °C.

Fig.8 Base-emitter saturation voltage as a function of collector current; typical values.



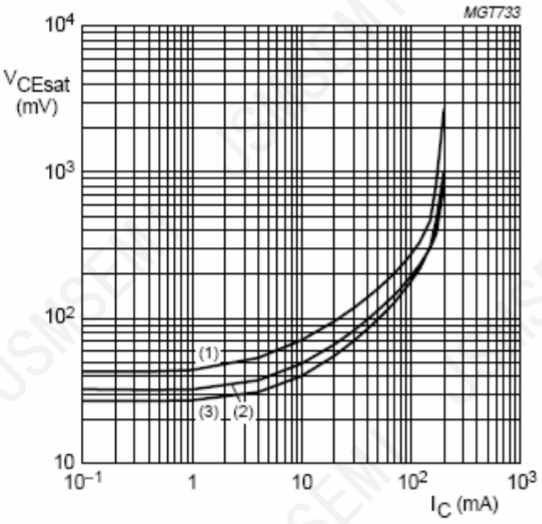
BC847C; V_{CE} = 5 V.
(1) T_{amb} = 150 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = −55 °C.

Fig.9 DC current gain as a function of collector current; typical values.



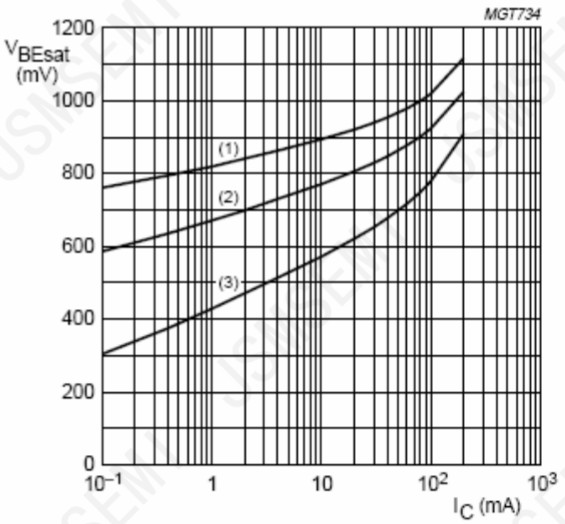
BC847C; V_{CE} = 5 V.
(1) T_{amb} = −55 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = 150 °C.

Fig.10 Base-emitter voltage as a function of collector current; typical values.



BC847C; I_C/I_B = 20.
(1) T_{amb} = 150 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = −55 °C.

Fig.11 Collector-emitter saturation voltage as a function of collector current; typical values.

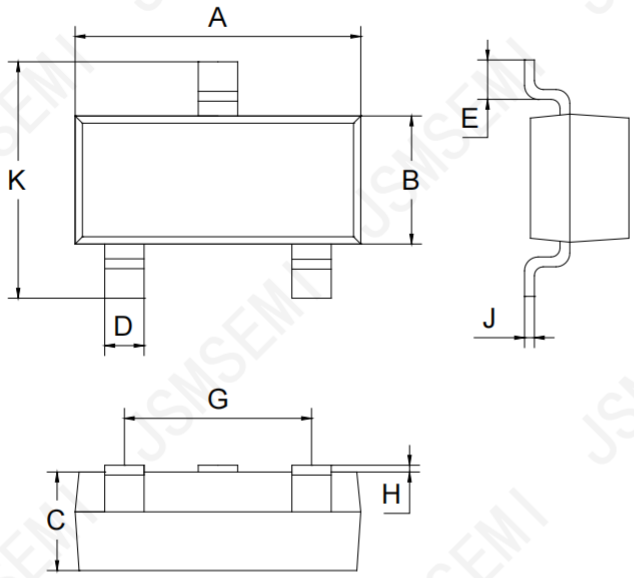


BC847C; I_C/I_B = 10.
(1) T_{amb} = −55 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = 150 °C.

Fig.12 Base-emitter saturation voltage as a function of collector current; typical values.

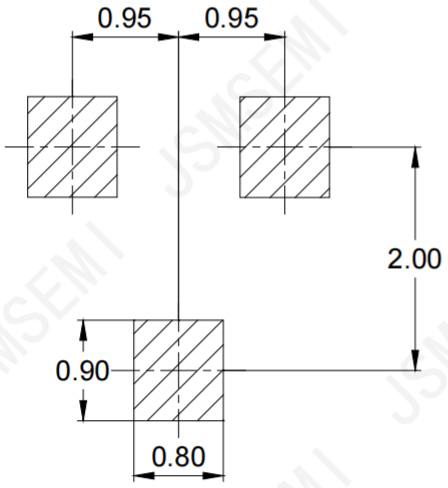
PACKAGE OUTLINE

Plastic surface mounted package SOT-23



SOT-23		
Dim	Min	Max
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit: mm

PACKAGE INFORMATION

Device	Package	Shipping
BC847C,215-JSM	SOT-23	3000 pcs / Tape & Reel

Revision History

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

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