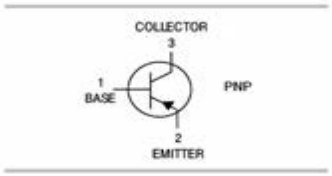
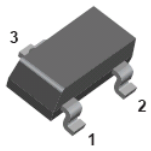
PNP general purpose Transistor BC856/857/858

FEATURES

- Low current (max.100mA)
- Low voltage

HF





SOT-23

APPLICATIONS

- General purpose switching and amplification

ORDERING INFORMATION

Type No.	Marking	Package Code
BC856A/B	3A/3B	SOT-23
BC857A/B/C	3E/3F/3G	SOT-23
BC858A/B/C	3J/3K/3L	SOT-23

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	Parameter		Value	Units
V_{CBO}	Collector-Base Voltage	BC856	-80	V
		BC857	-50	
		BC858	-30	
V_{CEO}	Collector-Emitter Voltage	BC856	-65	V
		BC857	-45	
		BC858	-30	
V_{EBO}	Emitter-Base Voltage		-5	V
I_C	Collector Current -Continuous		-0.1	A
P_C	Collector Dissipation		250	mW
$R_{\theta JA}$	Thermal Resistance,Junction to Ambient		417	℃/W
T_J, T_{STG}	Junction and Storage Temperature		-55 to +150	℃

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ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage BC856 BC857 BC858	$V_{(BR)CBO}$	I_C=-10μA,I_E=0	-80 -50 -30			V
Collector-emitter breakdown voltage BC856 BC857 BC858	$V_{(BR)CEO}$	I_C=-10mA,I_B=0	-65 -45 -30			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-1μA,I_C=0	-5			V
Collector cut-off current	I_{CBO}	V_{CB}=-30V,I_E=0		-1	-15	nA
Emitter cut-off current	I_{EBO}	V_{EB}=-5V,I_C=0			-0.1	μA
DC current gain BC856A,857A,858A BC856B,857B,858B BC857C,858C	h_{FE}	V_{CE}=-5V,I_C=-2mA	125 220 420		250 475 800	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-100mA, I_B=-5mA I_C=-10mA, I_B=-0.5mA			-0.65 -0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=-10mA, I_B=-0.5mA I_C=-100mA, I_B=-5mA		-0.7 -0.85		V
Base-emitter voltage	$V_{BE(on)}$	I_C=-2mA,V_{CE}=-5V I_C=-10mA,V_{CE}=-5V	-0.6	-0.65	-0.75 -0.82	V
collector capacitance	C_c	V_{CB}=-10V,I_E=I_e=0 f=1MHz		4.5		pF
Transition frequency	F	I_C=-200uA,V_{CE}=-5V, R_S=2kΩ,f=1kHz, B=200Hz		2	10	dB
Transition frequency	f_T	V_{CE}=-5V, I_C= -10mA f=100MHz	100			MHz

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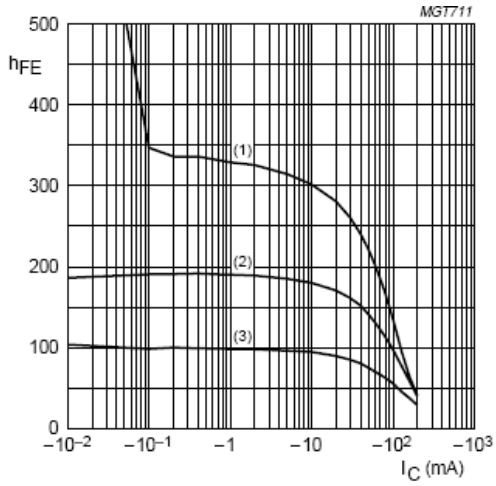
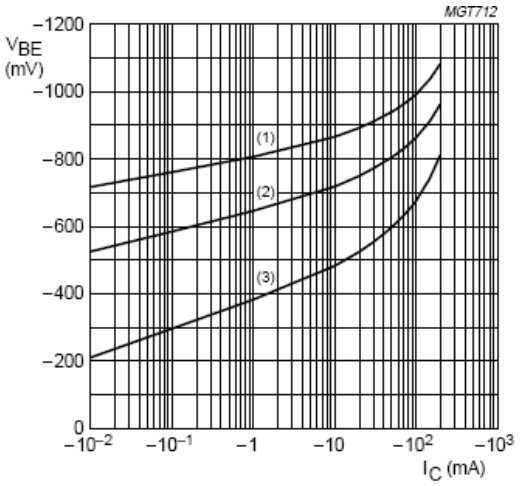
TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified



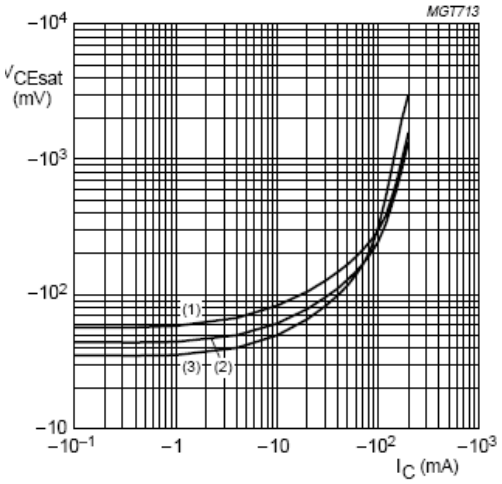
BC857A; V_{CE} = −5 V.
(1) T_{amb} = 150 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = −55 °C.

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



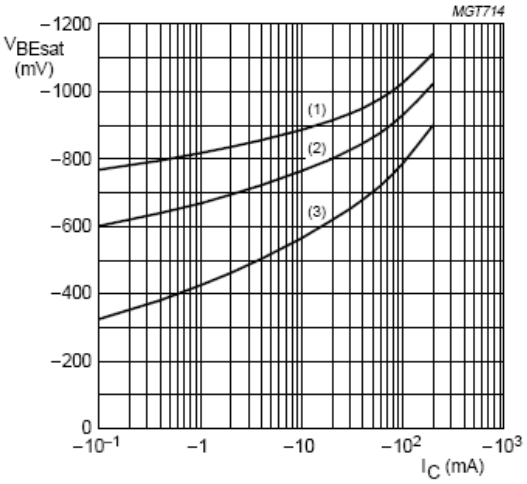
BC857A; V_{CE} = −5 V.
(1) T_{amb} = −55 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = 150 °C.

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



BC857A; 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.



BC857A; I_C/I_B = 20.
(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.

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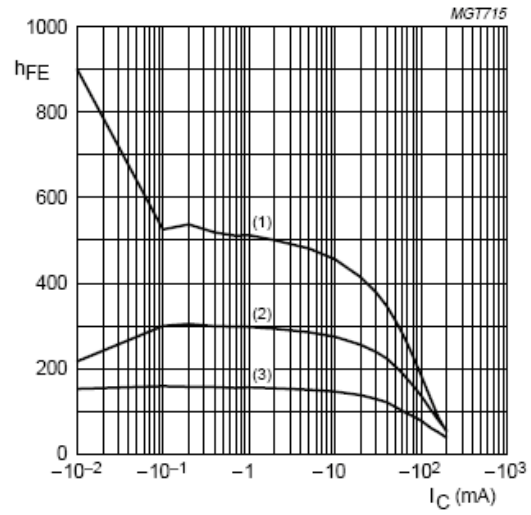
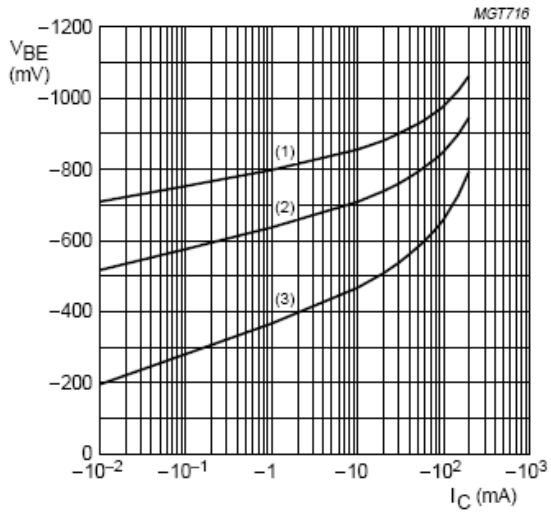


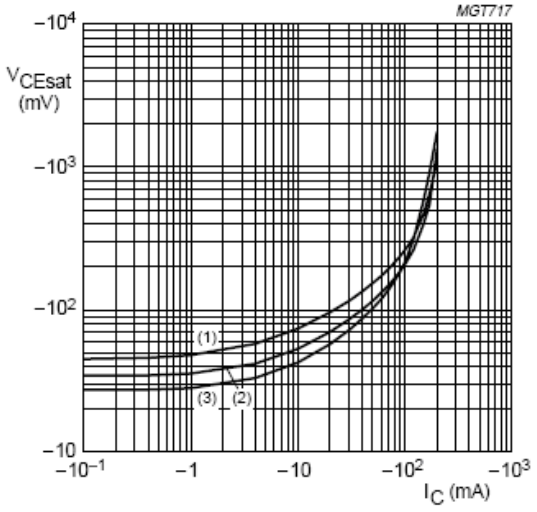
BC857B; V_{CE} = −5 V.
(1) T_{amb} = 150 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = −55 °C.

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



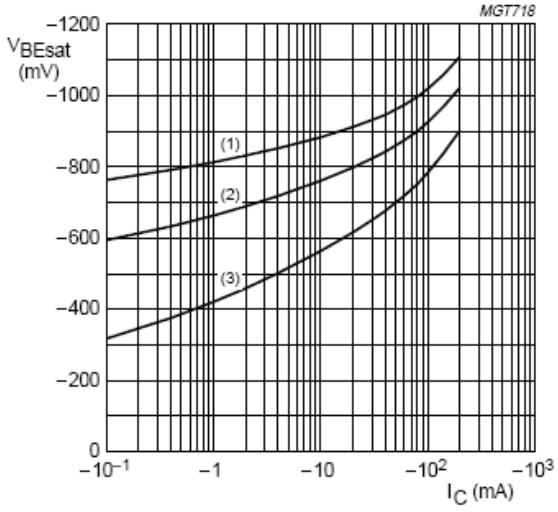
BC857B; V_{CE} = −5 V.
(1) T_{amb} = −55 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = 150 °C.

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



BC857B; 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



BC857B; I_C/I_B = 20.
(1) T_{amb} = −55 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = 150 °C.

Fig.8 Base-emitter saturation voltage as a

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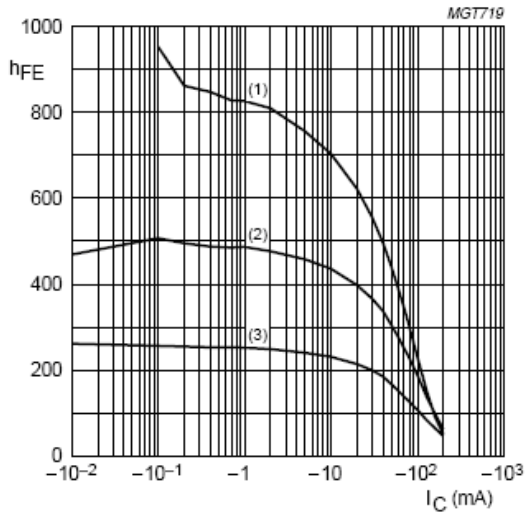
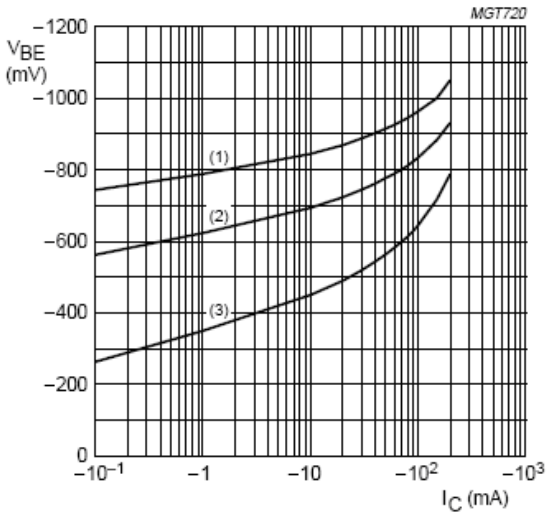


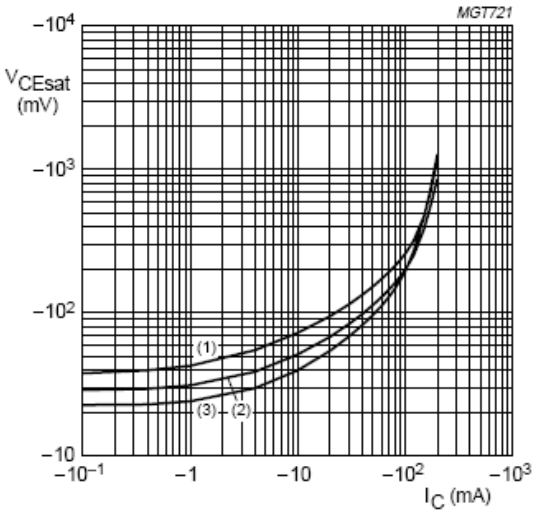
BC857C; V_{CE} = −5 V.
(1) T_{amb} = 150 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = −55 °C.

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



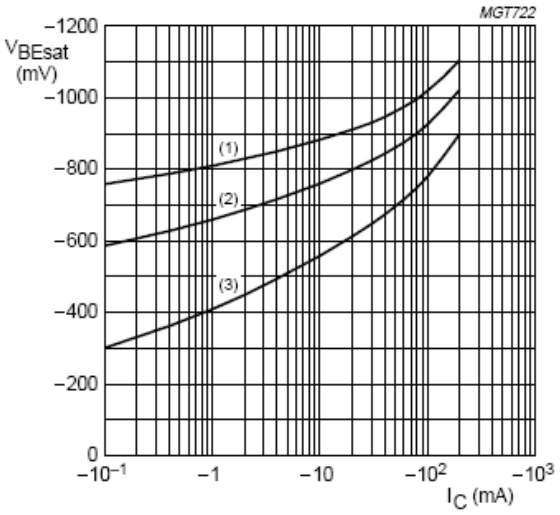
BC857C; V_{CE} = −5 V.
(1) T_{amb} = −55 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = 150 °C.

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



BC857C; 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.



BC857C; I_C/I_B = 20.
(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

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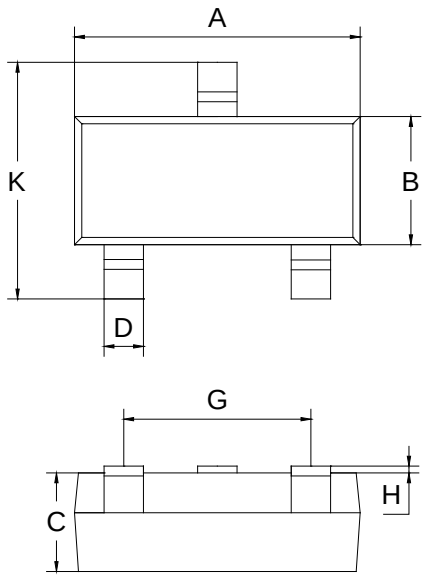
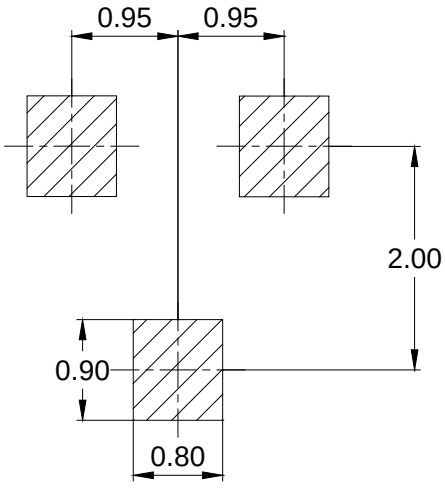
PACKAGE OUTLINE

Plastic surface mounted package SOT-23



SOT-23		
Dim	Min	Max
A	2.70	3.10
B	1.10	1.50
C	0.9	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
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit: mm

PACKAGE INFORMATION

Device	Package	Shipping
BC856/857/858	SOT-23	3000pcs / Tape & Reel