

PNP general purpose Transistor

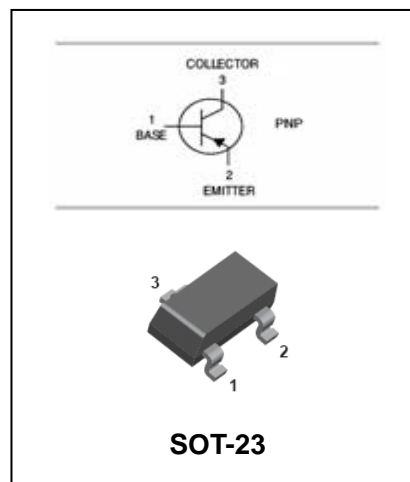
BC856/857/858

FEATURES

- Low current.(max.100mA).
- Low voltage.(max.65v).



Lead-free



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°C unless otherwise specified

Symbol	Parameter	Value	Units
V _{CBO}	Collector-Base Voltage	BC856	-80
		BC857	-50
		BC858	-30
V _{CEO}	Collector-Emitter Voltage	BC856	-65
		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
T _j , T _{stg}	Junction and Storage Temperature	-65 to +150	°C

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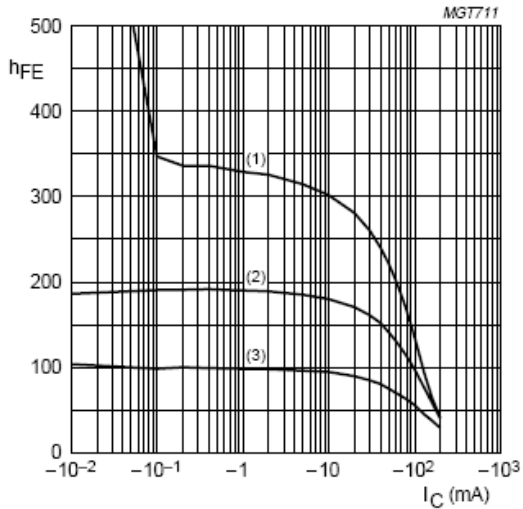
ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	BC856 BC857 BC858	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0$	-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		$V_{(BR)EBO}$	$I_E = -1\mu A, I_C = 0$	-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	$I_C = -200\mu A, V_{CE} = -5V,$ $R_S = 2k\Omega, f = 1kHz,$ $B = 200Hz$	2	10	dB
Transition frequency		f_T	$V_{CE} = -5V, I_C = -10mA$ $f = 100MHz$	100		MHz

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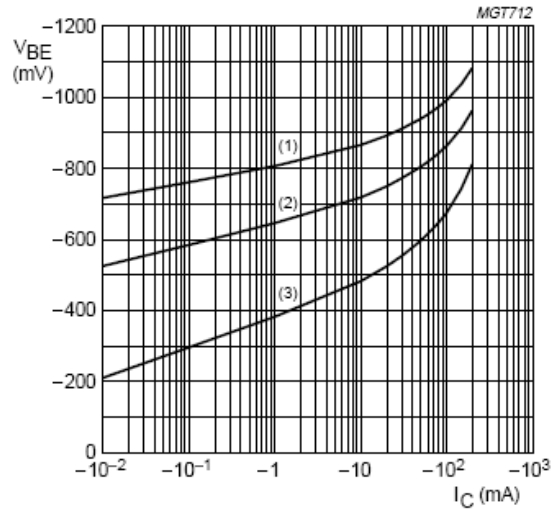
TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified



BC857A; $V_{CE} = -5\text{ V}$.

- (1) $T_{amb} = 150^\circ\text{C}$.
- (2) $T_{amb} = 25^\circ\text{C}$.
- (3) $T_{amb} = -55^\circ\text{C}$.

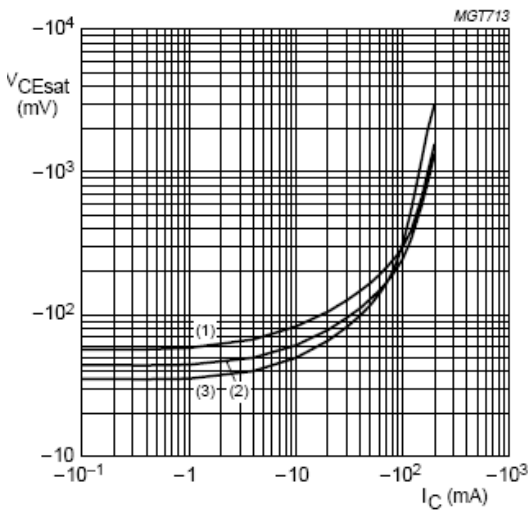
Fig.2 DC current gain as a function of collector current; typical values.



BC857A; $V_{CE} = -5\text{ V}$.

- (1) $T_{amb} = -55^\circ\text{C}$.
- (2) $T_{amb} = 25^\circ\text{C}$.
- (3) $T_{amb} = 150^\circ\text{C}$.

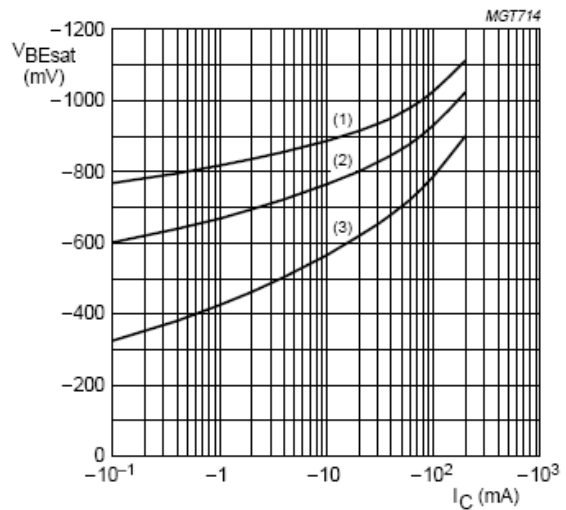
Fig.3 Base-emitter voltage as a function of collector current; typical values.



BC857A; $I_C/I_B = 20$.

- (1) $T_{amb} = 150^\circ\text{C}$.
- (2) $T_{amb} = 25^\circ\text{C}$.
- (3) $T_{amb} = -55^\circ\text{C}$.

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



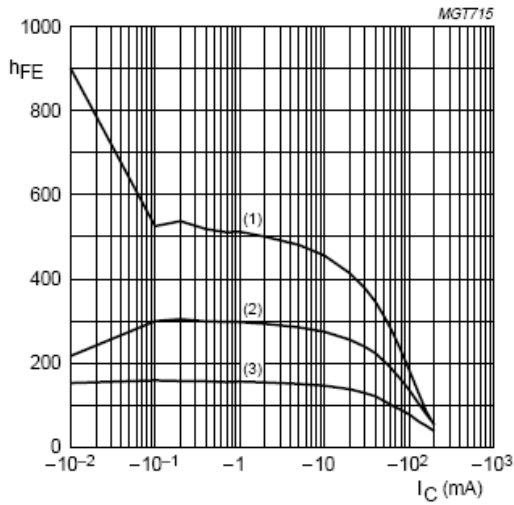
BC857A; $I_C/I_B = 20$.

- (1) $T_{amb} = -55^\circ\text{C}$.
- (2) $T_{amb} = 25^\circ\text{C}$.
- (3) $T_{amb} = 150^\circ\text{C}$.

Fig.5 Base-emitter saturation voltage as a function of collector current; typical values.

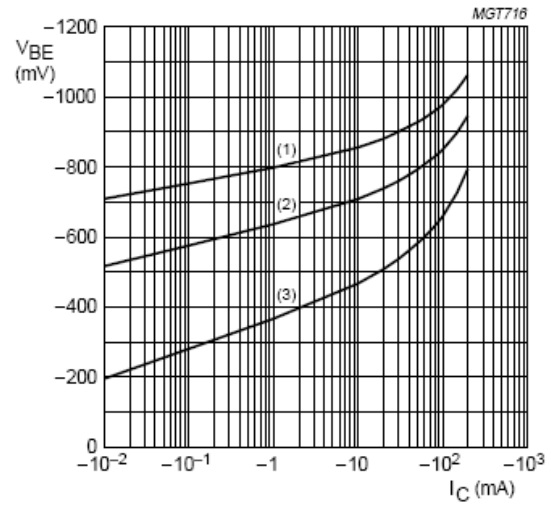
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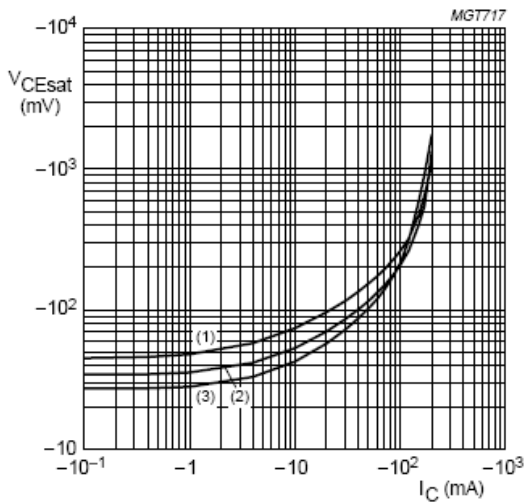
BC857B; $V_{CE} = -5\text{ V}$.
 (1) $T_{amb} = 150\text{ }^{\circ}\text{C}$.
 (2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
 (3) $T_{amb} = -55\text{ }^{\circ}\text{C}$.

Fig.6 DC current gain as a function of collector current; typical values.



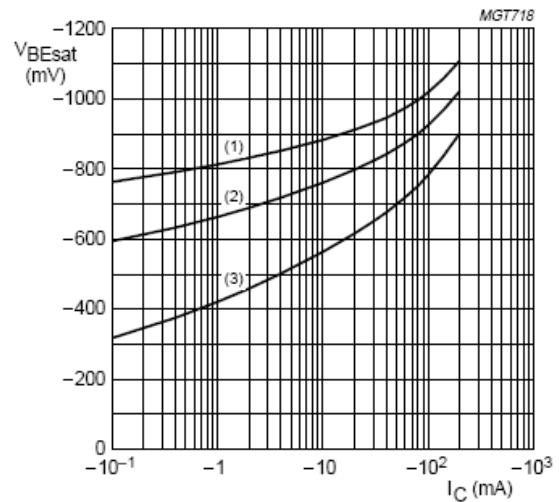
BC857B; $V_{CE} = -5\text{ V}$.
 (1) $T_{amb} = -55\text{ }^{\circ}\text{C}$.
 (2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
 (3) $T_{amb} = 150\text{ }^{\circ}\text{C}$.

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



BC857B; $I_C/I_B = 20$.
 (1) $T_{amb} = 150\text{ }^{\circ}\text{C}$.
 (2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
 (3) $T_{amb} = -55\text{ }^{\circ}\text{C}$.

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

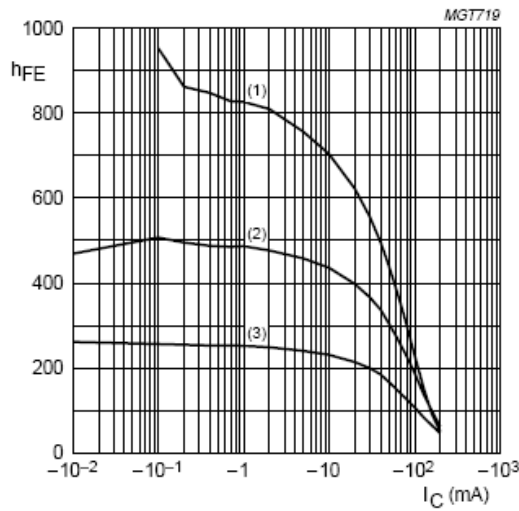


BC857B; $I_C/I_B = 20$.
 (1) $T_{amb} = -55\text{ }^{\circ}\text{C}$.
 (2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
 (3) $T_{amb} = 150\text{ }^{\circ}\text{C}$.

Fig.9 Base-emitter saturation voltage as a function of collector current; typical values.

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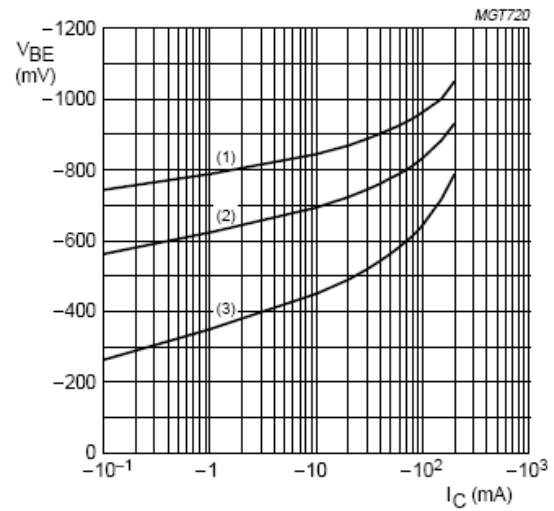
BC856/857/858



BC857C; $V_{CE} = -5\text{ V}$.

- (1) $T_{amb} = 150\text{ °C}$.
- (2) $T_{amb} = 25\text{ °C}$.
- (3) $T_{amb} = -55\text{ °C}$.

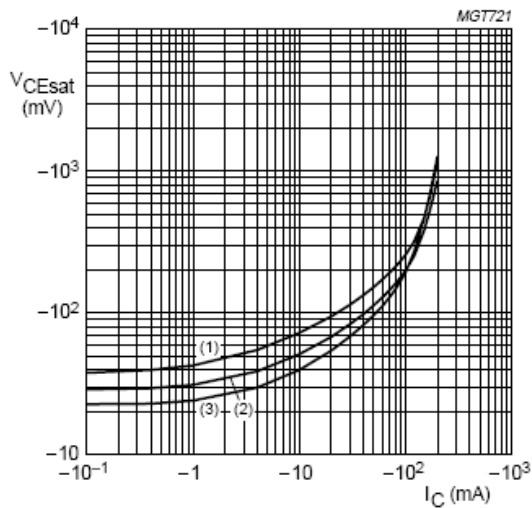
Fig.10 DC current gain as a function of collector current; typical values.



BC857C; $V_{CE} = -5\text{ V}$.

- (1) $T_{amb} = -55\text{ °C}$.
- (2) $T_{amb} = 25\text{ °C}$.
- (3) $T_{amb} = 150\text{ °C}$.

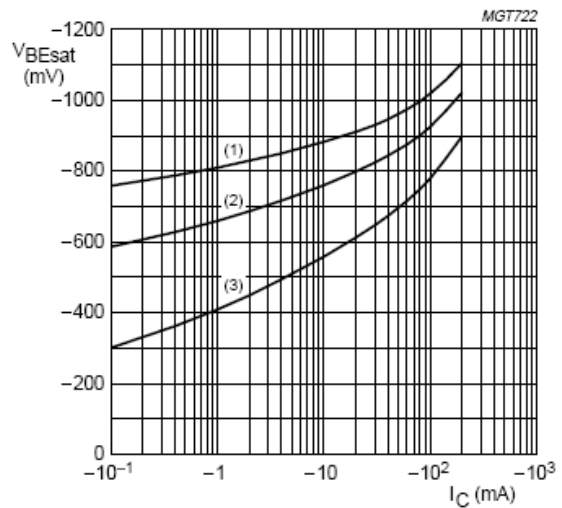
Fig.11 Base-emitter voltage as a function of collector current; typical values.



BC857C; $I_C/I_B = 20$.

- (1) $T_{amb} = 150\text{ °C}$.
- (2) $T_{amb} = 25\text{ °C}$.
- (3) $T_{amb} = -55\text{ °C}$.

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



BC857C; $I_C/I_B = 20$.

- (1) $T_{amb} = -55\text{ °C}$.
- (2) $T_{amb} = 25\text{ °C}$.
- (3) $T_{amb} = 150\text{ °C}$.

Fig.13 Base-emitter saturation voltage as a function of collector current; typical values.

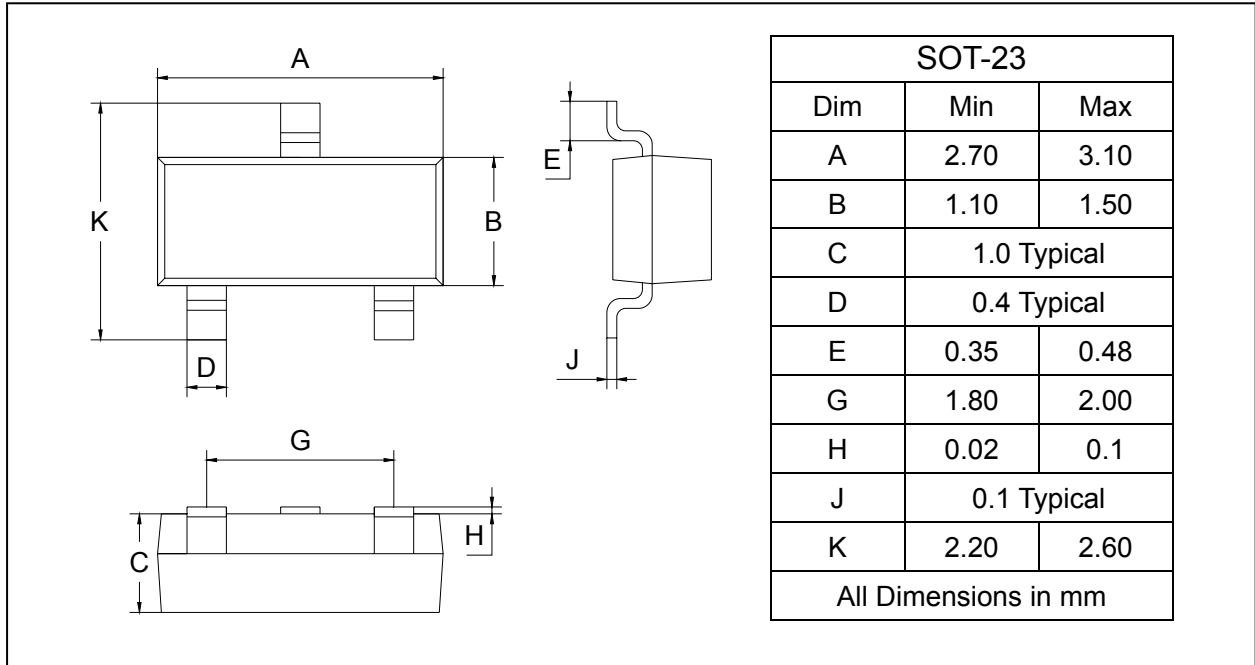
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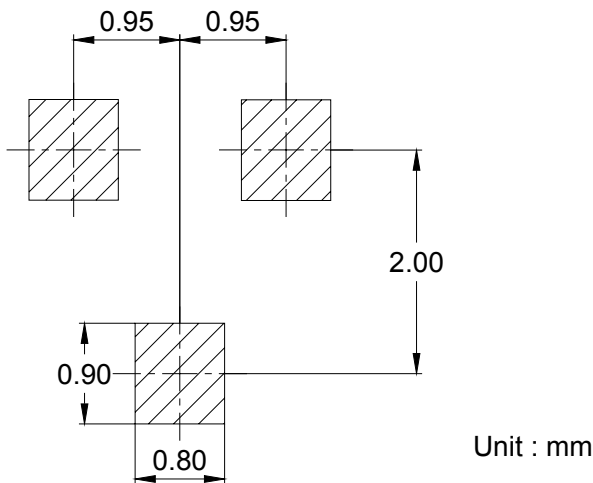
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

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