

### FEATURES

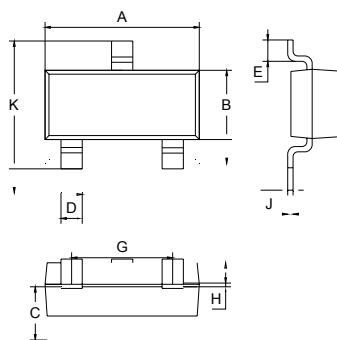
- Low current.(max.100mA).
- Low voltage..

### 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



SOT-23		
Dim	Min	Max
A	2.70	3.10
B	1.10	1.50
C	1.0 Typical	
D	0.4 Typical	
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.1 Typical	
K	2.20	2.60
All Dimensions in mm		

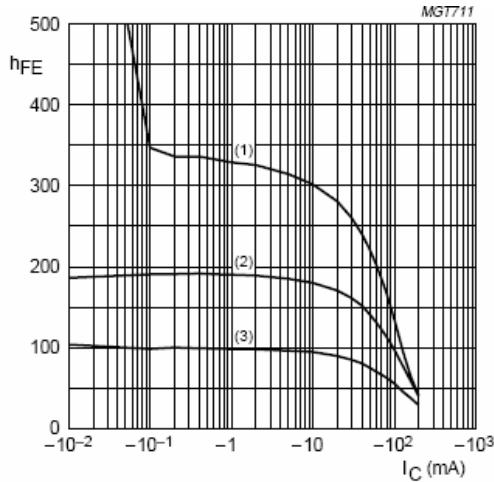
### MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units
V <sub>CBO</sub>	Collector-Base Voltage	BC856	-80
		BC857	-50
		BC858	-30
V <sub>CEO</sub>	Collector-Emitter Voltage	BC856	-65
		BC857	-45
		BC858	-30
V <sub>EBO</sub>	Emitter-Base Voltage	-5	V
I <sub>C</sub>	Collector Current -Continuous	-0.1	A
P <sub>C</sub>	Collector Dissipation	250	mW
T <sub>j</sub> , T <sub>stg</sub>	Junction and Storage Temperature	-65 to +150	°C

### ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

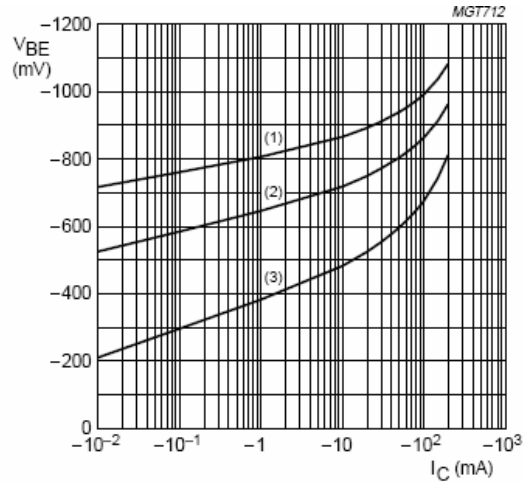
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	BC856 BC857 BC858	V <sub>(BR)CBO</sub> I <sub>C</sub> =-10μA, I <sub>E</sub> =0	-80 -50 -30			V
Collector-emitter breakdown voltage	BC856 BC857 BC858	V <sub>(BR)CEO</sub> I <sub>C</sub> =-10mA, I <sub>B</sub> =0	-65 -45 -30			V
Emitter-base breakdown voltage		V <sub>(BR)EBO</sub> I <sub>E</sub> =-1μA, I <sub>C</sub> =0	-5			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =-30V, I <sub>E</sub> =0		-1	-15	nA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =-5V, I <sub>C</sub> =0			-0.1	μA
DC current gain	BC856A,857A,858A BC856B,857B,858B BC857C,858C	h <sub>FE</sub> V <sub>CE</sub> =-5V, I <sub>C</sub> =-2mA	125 220 420		250 475 800	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-100mA, I <sub>B</sub> =-5mA I <sub>C</sub> =-10mA, I <sub>B</sub> =-0.5mA			-0.65 -0.3	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =-10mA, I <sub>B</sub> =-0.5mA I <sub>C</sub> =-100mA, I <sub>B</sub> =-5mA		-0.7 -0.85		V
Base-emitter voltage	V <sub>BE(on)</sub>	I <sub>C</sub> =-2mA, V <sub>CE</sub> =-5V I <sub>C</sub> =-10mA, V <sub>CE</sub> =-5V	-0.6	-0.65	-0.75 -0.82	V
collector capacitance	C <sub>c</sub>	V <sub>CB</sub> =-10V, I <sub>E</sub> =I <sub>C</sub> =0 f=1MHz		4.5		pF
Transition frequency	F	I <sub>C</sub> =-200μA, V <sub>CE</sub> =-5V, R <sub>S</sub> =2kΩ, f=1kHz, B=200Hz		2	10	dB
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =-5V, I <sub>C</sub> = -10mA f=100MHz	100			MHz

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



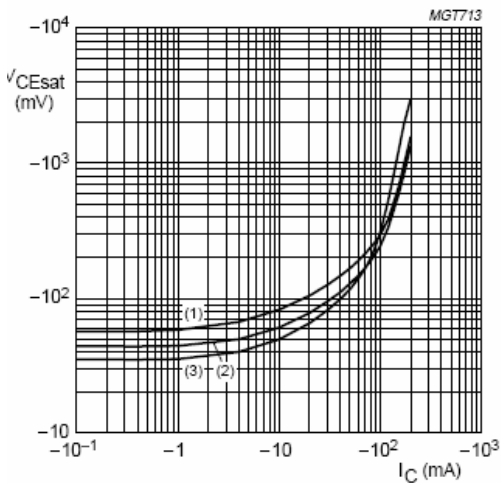
BC857A;  $V_{CE} = -5\text{ V}$ .  
 (1)  $T_{amb} = 150^\circ\text{C}$ .  
 (2)  $T_{amb} = 25^\circ\text{C}$ .  
 (3)  $T_{amb} = -55^\circ\text{C}$ .

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



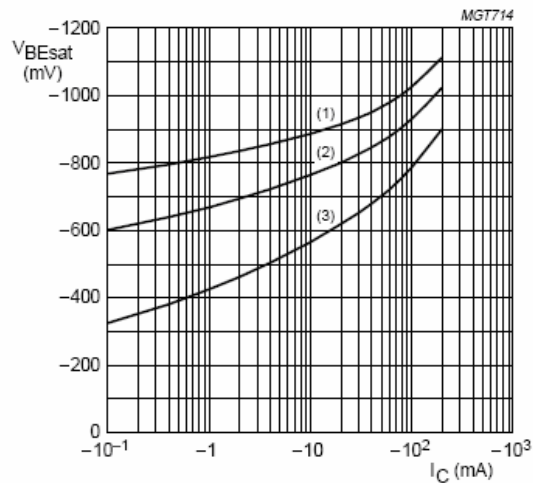
BC857A;  $V_{CE} = -5\text{ V}$ .  
 (1)  $T_{amb} = -55^\circ\text{C}$ .  
 (2)  $T_{amb} = 25^\circ\text{C}$ .  
 (3)  $T_{amb} = 150^\circ\text{C}$ .

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



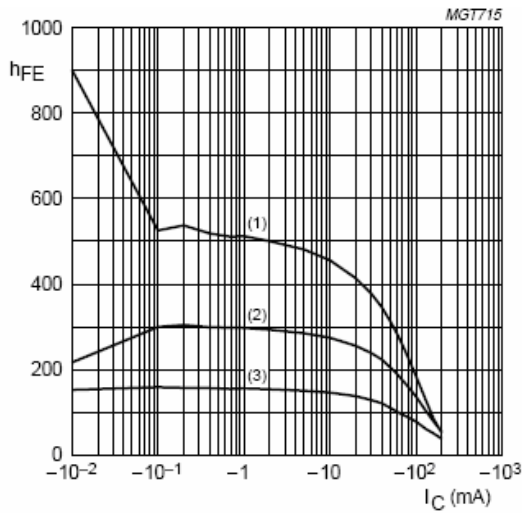
BC857A;  $I_C/I_B = 20$ .  
 (1)  $T_{amb} = 150^\circ\text{C}$ .  
 (2)  $T_{amb} = 25^\circ\text{C}$ .  
 (3)  $T_{amb} = -55^\circ\text{C}$ .

Fig.3 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)  $T_{amb} = 150^\circ\text{C}$ .

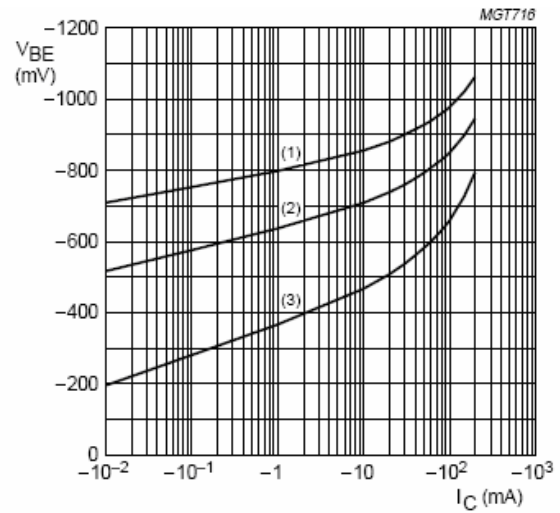
Fig.4 Base-emitter saturation voltage as a function of collector current; typical values.



BC857B;  $V_{CE} = -5\text{ V}$ .

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

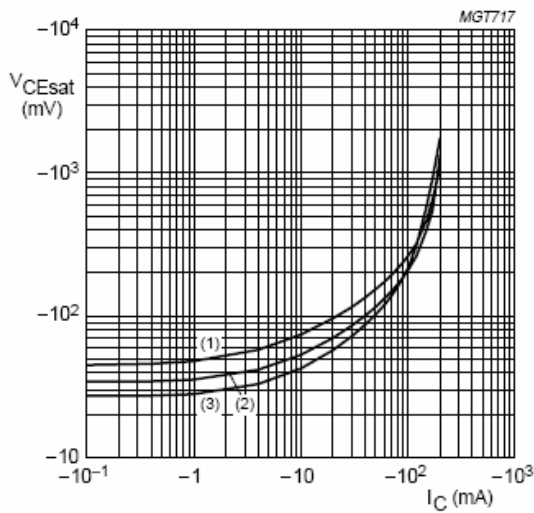
Fig.5 DC current gain as a function of collector current; typical values.



BC857B;  $V_{CE} = -5\text{ V}$ .

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

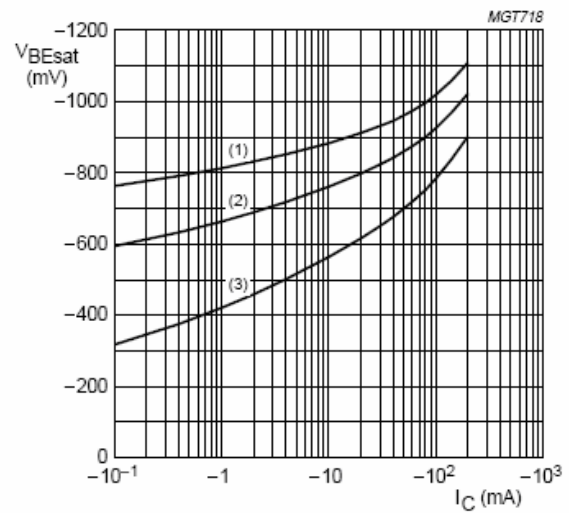
Fig.6 Base-emitter voltage as a function of collector current; typical values.



BC857B;  $I_C/I_B = 20$ .

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

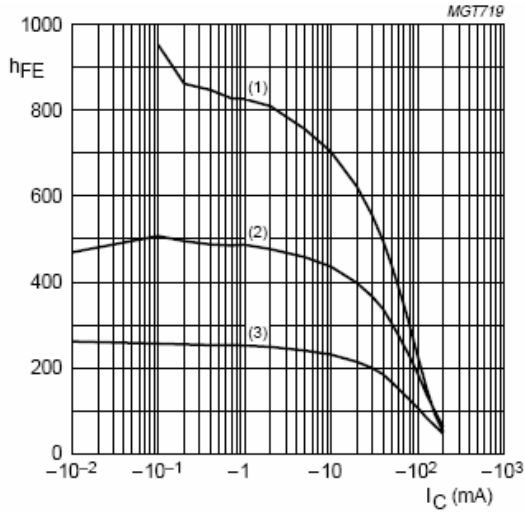
Fig.7 Collector-emitter saturation voltage as a



BC857B;  $I_C/I_B = 20$ .

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

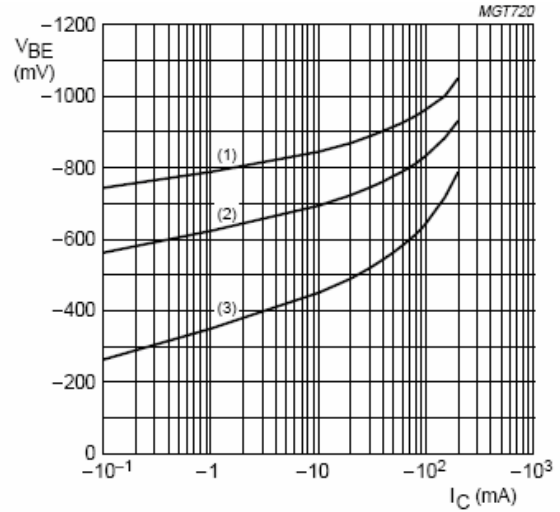
Fig.8 Base-emitter saturation voltage as a



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

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

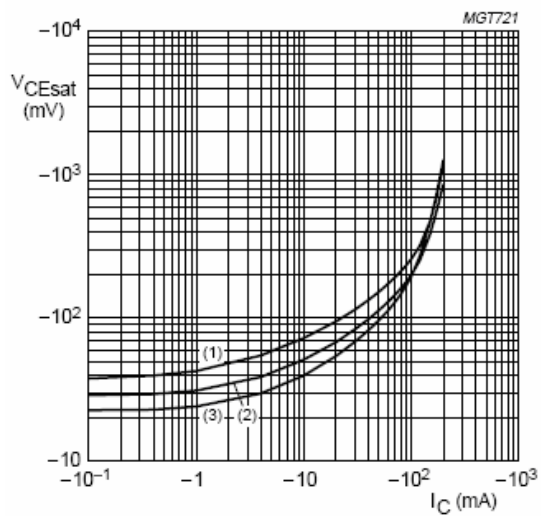
Fig.9 DC current gain as a function of collector current; typical values.



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

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

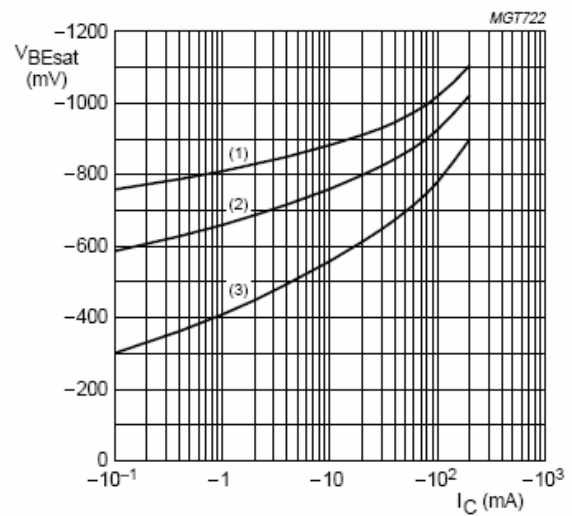
Fig.10 Base-emitter voltage as a function of collector current; typical values.



BC857C;  $I_C/I_B = 20$ .

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



BC857C;  $I_C/I_B = 20$ .

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

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

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