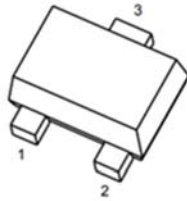
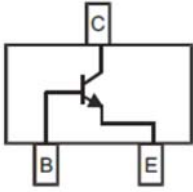




## PNP Transistor



1. Base  
2. Emitter  
3. Collector

SOT-723

### Features

- Moisture sensitivity level 1
- Halogen free and RoHS compliant
- Surface mount package ideally suited for automatic insertion

### Application

- Signal amplification
- Switching circuit

### Mechanical data

- **Package:** SOT-723
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

### ■ Maximum Ratings ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

Item	Symbol	Unit	Conditions		Value
Device marking code			BC856AM3		3A
			BC856BM3		3B
			BC857AM3		3E
			BC857BM3		3F
			BC857CM3		3G
			BC858AM3		3J
			BC858BM3		3K
			BC858CM3		3L
Collector-base voltage	$V_{CBO}$	V	BC856	$I_C=-10\mu\text{A}$ $I_E=0$	-80
			BC857		-50
			BC858		-30
Collector-emitter voltage	$V_{CEO}$	V	BC856	$I_C=-10\text{mA}$ $I_B=0$	-65
			BC857		-45
			BC858		-30



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Item	Symbol	Unit	Conditions	Value
Emitter-base voltage	$V_{EBO}$	V	$I_E=-1\mu A, I_C=0$	-5
Collector current	$I_C$	mA		-100
Power dissipation	$P_D$	mW		100
Junction temperature	$T_J$	°C		-55 to +150
Storage temperature	$T_{STG}$	°C		-55 to +150

## ■ Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	$V_{(BR)CBO}$	V	BC856	$I_C=-10\mu A, I_E=0$	-80	
			BC857		-50	
			BC858		-30	
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	V	BC856	$I_C=-10mA, I_B=0$	-65	
			BC857		-45	
			BC858		-30	
Emitter-base breakdown voltage	$V_{(BR)EBO}$	V	$I_E=-1\mu A, I_C=0$	-5		
Collector cut-off current	$I_{CBO}$	nA	$V_{CB}=-30V, I_E=0$			-15
Emitter-base cutoff current	$I_{EBO}$	uA	$V_{EB}=-5V, I_C=0$			-0.1
Emitter cutoff current	$I_{CEO}$	mA	$V_{CE}=-30V, I_B=0$			-1
DC current gain	$h_{FE}$		BC856A,857A,858A	$V_{CE}=-5V, I_C=-2mA$	110	220
			BC856B,857B,858B		200	450
			BC857C,BC858C		420	800
Collector-emitter saturation voltage	$V_{CE(sat)1}$	V	$I_C=-10mA, I_B=-0.5mA$			-0.3
	$V_{CE(sat)2}$	V	$I_C=-100mA, I_B=-5mA$			-0.65
Base-emitter saturation voltage	$V_{BE(sat)1}$	V	$I_C=-10mA, I_B=-0.5mA$		-0.7	
	$V_{BE(sat)2}$	V	$I_C=-100mA, I_B=-5mA$		-0.85	
Base-emitter on voltage	$V_{BE(ont)1}$	V	$V_{CE}=-5V, I_C=-2mA$		-0.65	-0.75
	$V_{BE(ont)2}$	V	$V_{CE}=-5V, I_C=-10mA$			-0.82
Transition frequency	$f_T$	MHz	$V_{CE}=-5V, I_C=-10mA, f=100MHz$	100		
Collector-base output capacitance	$C_{ob}$	pF	$V_{CB}=-10V, f=1MHz$			4.5



## ■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	$R_{\theta J-A}^{(1)}$	$^{\circ}\text{C}/\text{W}$	1250
Thermal resistance, junction-to-case	$R_{\theta J-C}^{(1)}$	$^{\circ}\text{C}/\text{W}$	1000

Note:

(1) Thermal resistance from junction to ambient and from junction to case mounted on P.C.B. with 25.4mm\*25.4mm copper pad areas

## ■ Characteristics

Fig 1: Static Characteristics

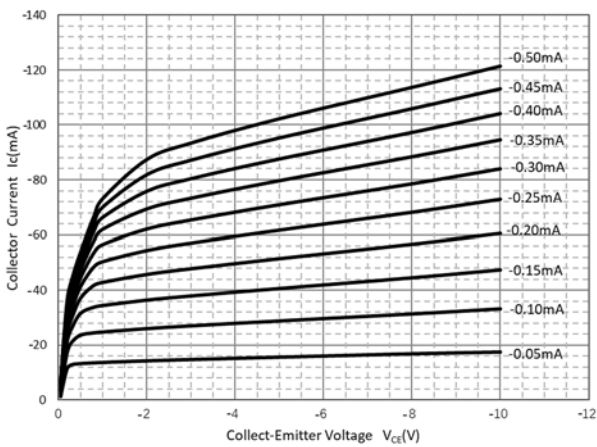


Fig 2: DC Current Gain Characteristics

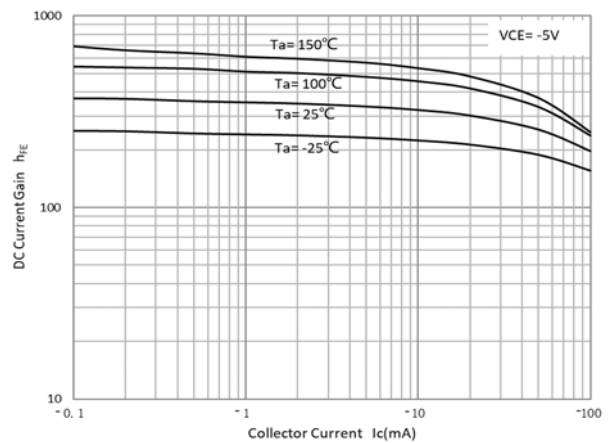


Fig 3: Collector-Emitter Saturation Voltage

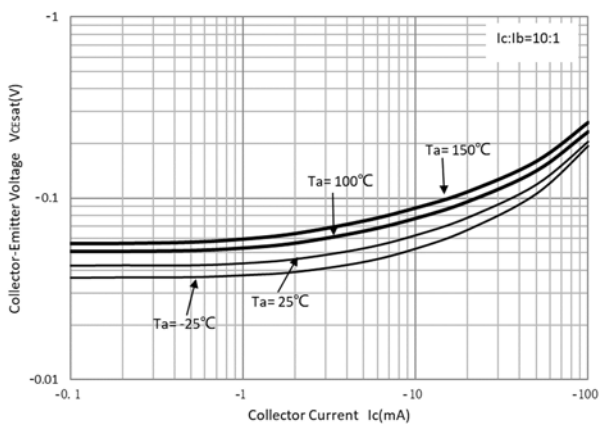
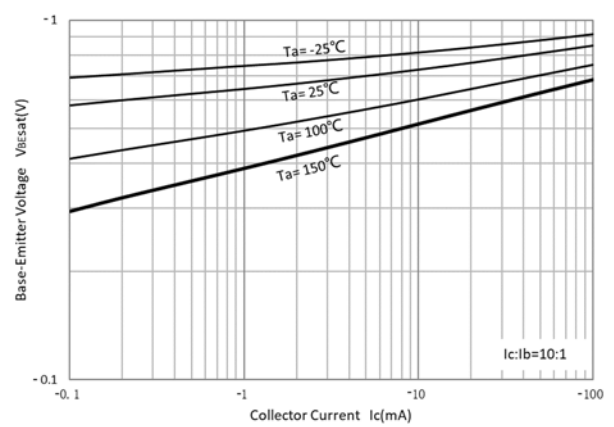


Fig 4: Base-Emitter Saturation Voltage





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Fig 5: Base-Emitter on Voltage

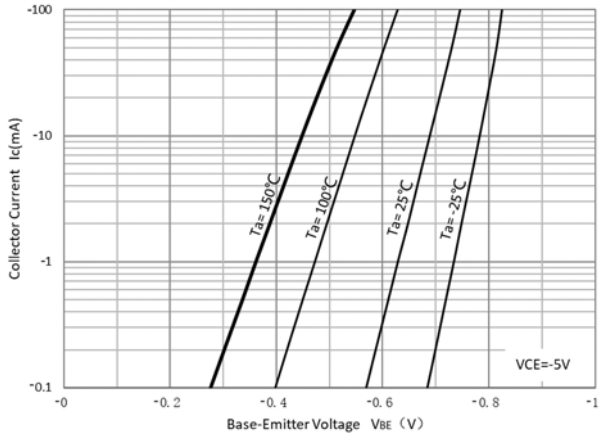


Fig 6:  $C_{ob}/C_{ib} - V_{CB}/V_{EB}$

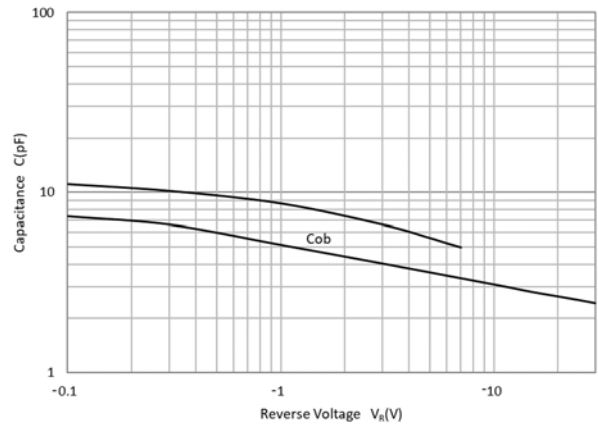
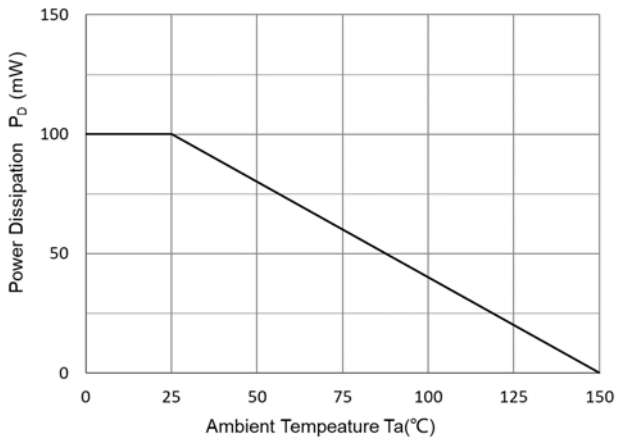


Fig 7:  $P_D - T_a$  Curve





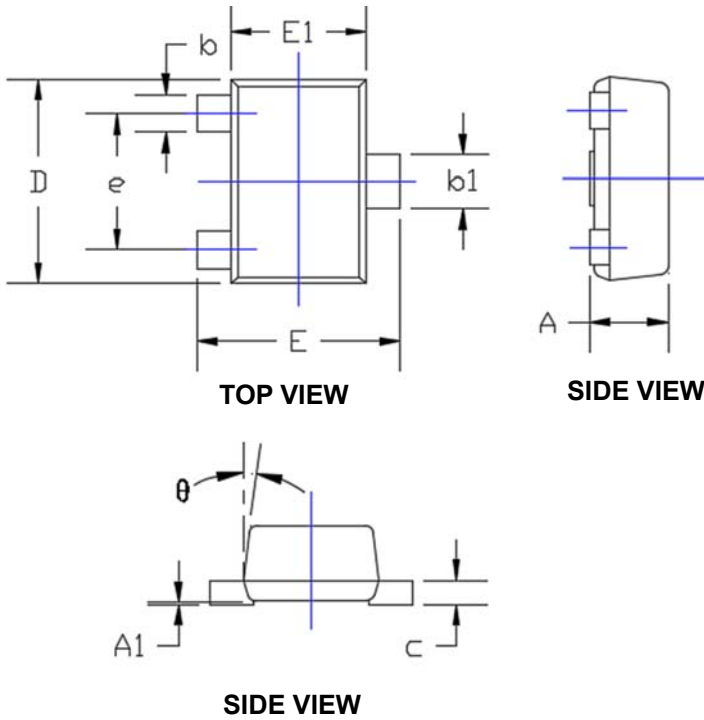
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## Ordering Information

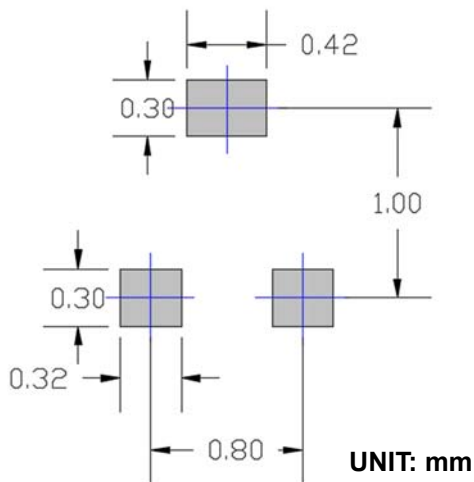
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
BC856AM3 THRU BC858CM3	F2	Approximate 0.0013	8000	80000	320000	7" reel

## Outline Dimensions



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.017	0.022	0.430	0.550
A1	0.000	0.002	0.000	0.050
b	0.007	0.011	0.170	0.270
b1	0.011	0.015	0.270	0.370
c	0.003	0.008	0.080	0.200
D	0.045	0.049	1.150	1.250
E	0.045	0.049	1.150	1.250
E1	0.030	0.033	0.750	0.850
e	0.031TYP.		0.800TYP.	
$\theta$	7°REF.		7°REF.	

## Suggested Pad Layout





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