

# BC856A-BC858C

## PNP SURFACE MOUNT SMALL SIGNAL TRANSISTOR IN SOT23

### Features

- Ideally Suited for Automatic Insertion
- Complementary PNP Types Available
- For switching and AF Amplifier
- RoHS compliant package

### Mechanical Data

- Case: SOT-23 Molded plastic
- Epoxy: UL94V-O rate flame retardant

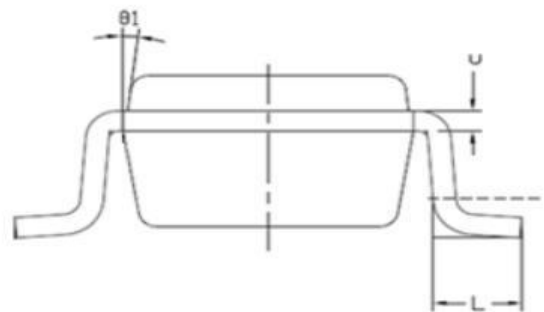
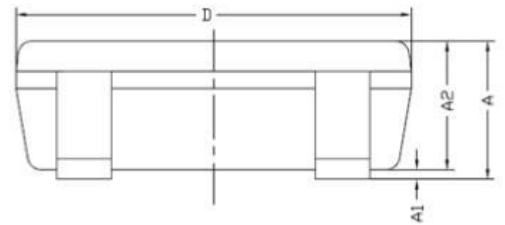
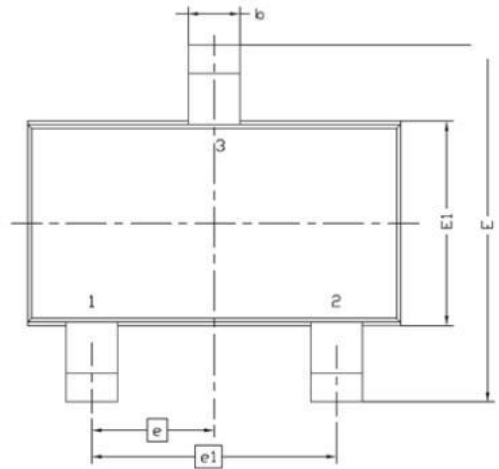
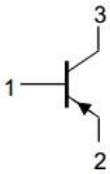
### Packing & Order Information

3,000/Reel



**RoHS**  
COMPLIANT

### Graphic symbol



Symbol	MILLIMETERS	
	MIN	MAX
A	0.8	1.2
A1	0	0.1
A2	0.7	1.1
b	0.3	0.5
c	0.1	0.2
D	2.7	3.1
E	2.6	3
E1	1.4	1.8
e	0.95 BSC	
e1	1.9 BSC	
L	0.3	0.6
θ1	7° NOM	

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### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

#### Maximum Ratings (Tc=25°C unless otherwise noted)

Symbol	Parameter	BC856A,B	BC857A,B	BC858A,B,C	Unit
VCEO	Collector-Emitter Voltage	-65	-45	-30	Vdc
VCBO	Collector-Base Voltage	-80	-50	-30	Vdc
VEBO	Emitter-Base Voltage	-5	-5	-5	Vdc
Ic	Collector Current Continuous	-100	-100	-100	mAdc

#### THERMAL CHARACTERISTICS

Symbol	Parameter	Max	Unit
PD(Ta=25°C)	Total Device Dissipation	225	mW
	FR-5 Board(1), TA=25° Derate above 25°	1.8	mW/°C
PD(Ta=25°C)	Total Device Dissipation	300	mW
	Alumina Substrate, TA=25° Derate above 25°	2.4	mW/°C
RθJA	Thermal Resistance Junction to Ambient	80	V
TJ ,Tstg	Junction and Storage Temperature	55 to +150	°C

#### Electrical characteristics (Tc=25°C unless otherwise noted)

#### OFF CHARACTERISTICS

Symbol	Parameter		MIN	TYP	MAX	UNIT
V(BR)CEO	Collector-Emitter Breakdown Voltage (Ic=-10mAdc, IB=0)	BC856A,B	-65			V
		BC857A,B	-45			V
		BC858A,B,C	-30			V
V(BR)CBO	Collector-Base Breakdown Voltage (Ic=-10μAdc, IE=0)	BC856A,B	-80			V
		BC857A,B	-50			V
		BC858A,B,C	-30			V
V(BR)EBO	Emitter-Base Breakdown Voltage (IE=-10μAdc, Ic=0)	BC856A,B	-5			V
		BC857A,B	-5			V
		BC858A,B,C	-5			V
IBO	Collector Cutoff Current V					V
	(VCB=-30v)				-15	nA
	(VcB=-30Vdc, TA=150°C)				-4	uA

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### ON CHARACTERISTICS

Symbol	Parameter		MIN	TYP	MAX	UNIT
VCE(sat)	Collector-Emitter Saturation Voltage					V
	(Ic=-10mA, IB=-0.5mA)				-0.3	V
	(Ic=-100mA, IB=-5.0mA)				-0.65	V
HFE	DC Current Gain	BC846A,B		90		
	(Ic=-10uA, VCE=-5.0V)	BC847A,B		150		
		BC848A,B,C		270		
	(Ic=-2.0mA, VCE=-5.0V)	BC846A,B	125	180	250	
		BC847A,B	220	290	475	
		BC848A,B,C	420	520	800	
VBE(sat)	Base-Emitter Saturation Voltage					V
	(Ic=-10mA, IB=-0.5mA)			-0.7		V
	(Ic=-100mA, IB=-5.0mA)			-0.9		V
VBE(on)	Base-Emitter Voltage					V
	(Ic=-2.0mA, VCE=-5.0V)		-0.6		-0.75	mV
	(Ic=-10mA, VCE=-5.0V)				-0.82	mV

### ON CHARACTERISTICS

Symbol	Parameter		MIN	TYP	MAX	UNIT
fT	Current-Gain-Bandwidth Product (Ic=-10mA, VCE=-5.0V, f=100MHz)		100			MHz
Cobo	Output Capacitance (VCB=-10V, IE=0, f=1.0MHz)				4.5	pF
NF	Noise Figure (VCE=-5.0V, IC=-200uA, Rs=2.0k, f=1.0KHz, BW=200Hz)				10	dB

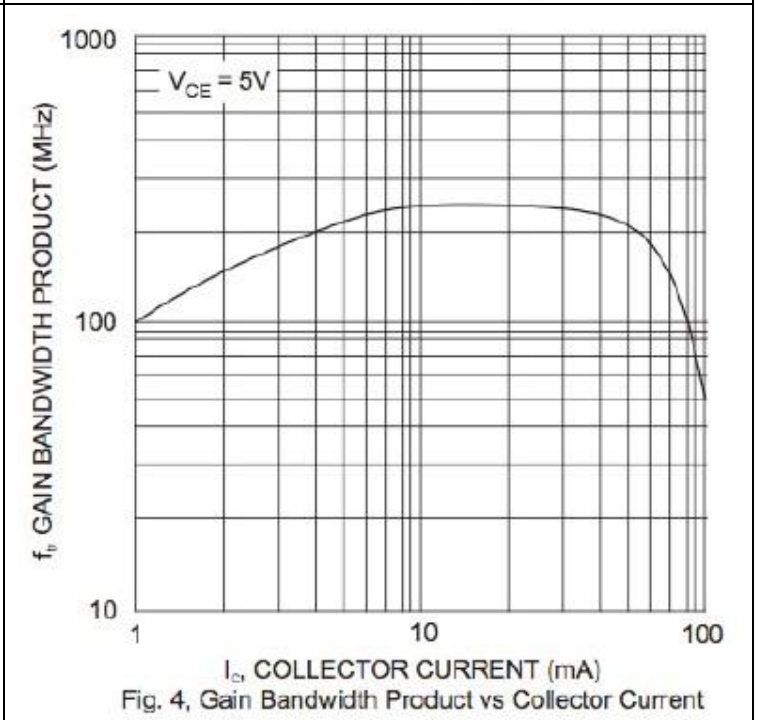
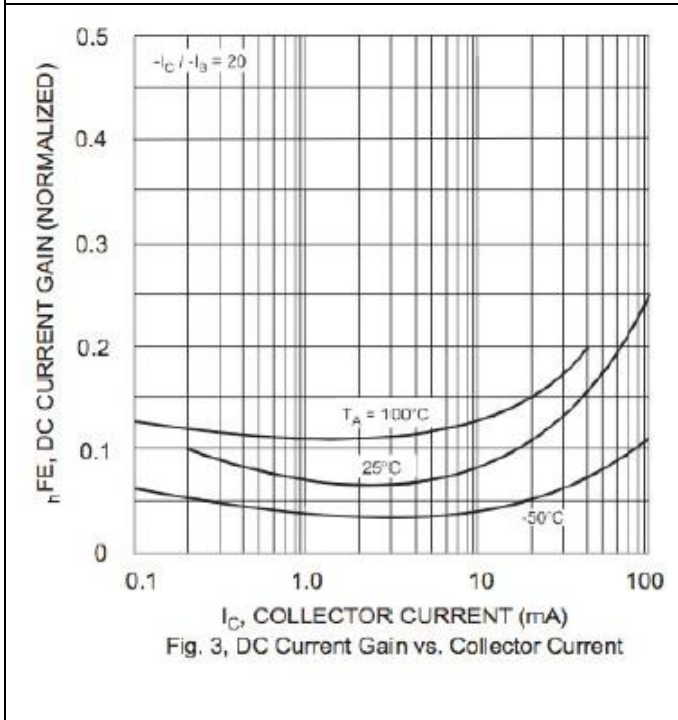
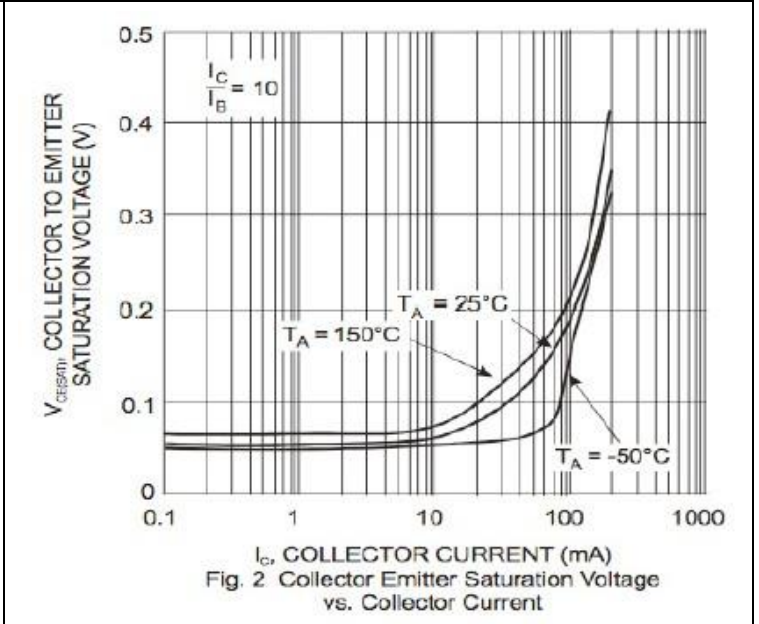
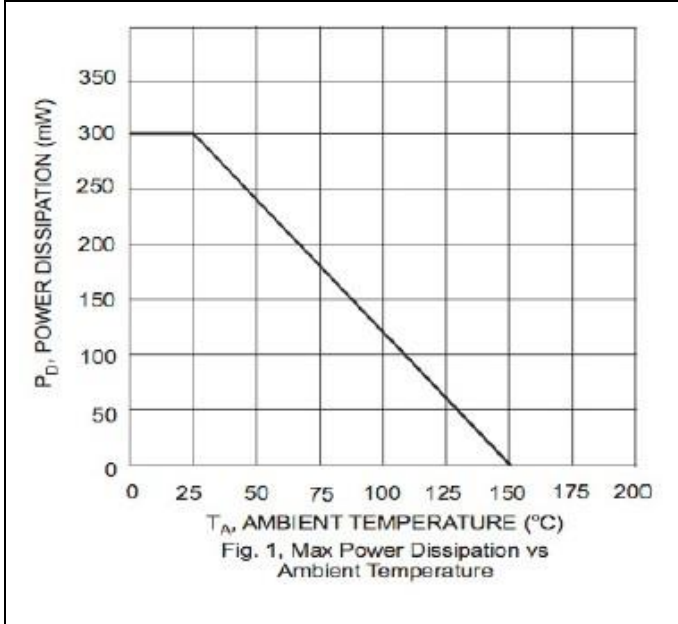
### DEVICE MARK

BC856A	3A
BC856B	3B
BC857A	3E
BC857B	3F
BC858A	3J
BC858B	3K
BC858C	3L

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### ■ RATINGS AND CHARACTERISTIC CURVES



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