

BC856 Thru BC858

Rev-1.1

SuperTransistor – V_{CBO} -30~-80V, I_C -100mA SOT-23 Plastic-Encapsulate PNP Transistors

1. Features

- Complementary to BC856/ BC857/ BC858
- Power dissipation of 200mW
- Ideally suited for automatic insertion

2. Mechanical Data

- SOT-23 Small Outline Plastic Package
- Epoxy UL: 94V-0
- Mounting Position: Any

3. Pin configuration

Pin		Function		Outline				
1		Base						
2		Emitter						
3		Collector						
Part number	BC856A	BC857A	BC858A	BC856B	BC857B	BC858B	BC857C	BC858C
Marking	3A	3E	3J	3B	3F	3K	3G	3L

4. Specification

Absolute Maximum Rating & Thermal Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

Parameters	Symbol		Value	Unit
Collector-Base Voltage	V_{CBO}	BC856	-80	V
		BC857	-50	
		BC858	-30	
Collector-Emitter Voltage	V_{CEO}	BC856	-65	V
		BC857	-45	
		BC858	-30	
Emitter-Base Voltage	V_{EBO}		-6	V
Collector Current-Continuous	I_C		-100	mA
Collector Power Dissipation	P_C		200	mW
Junction Temperature	T_J		150	°C
Storage Temperature	T_{STG}		-55~150	°C
Thermal resistance from junction to ambient	$R_{\theta JA}$		625	°C/W

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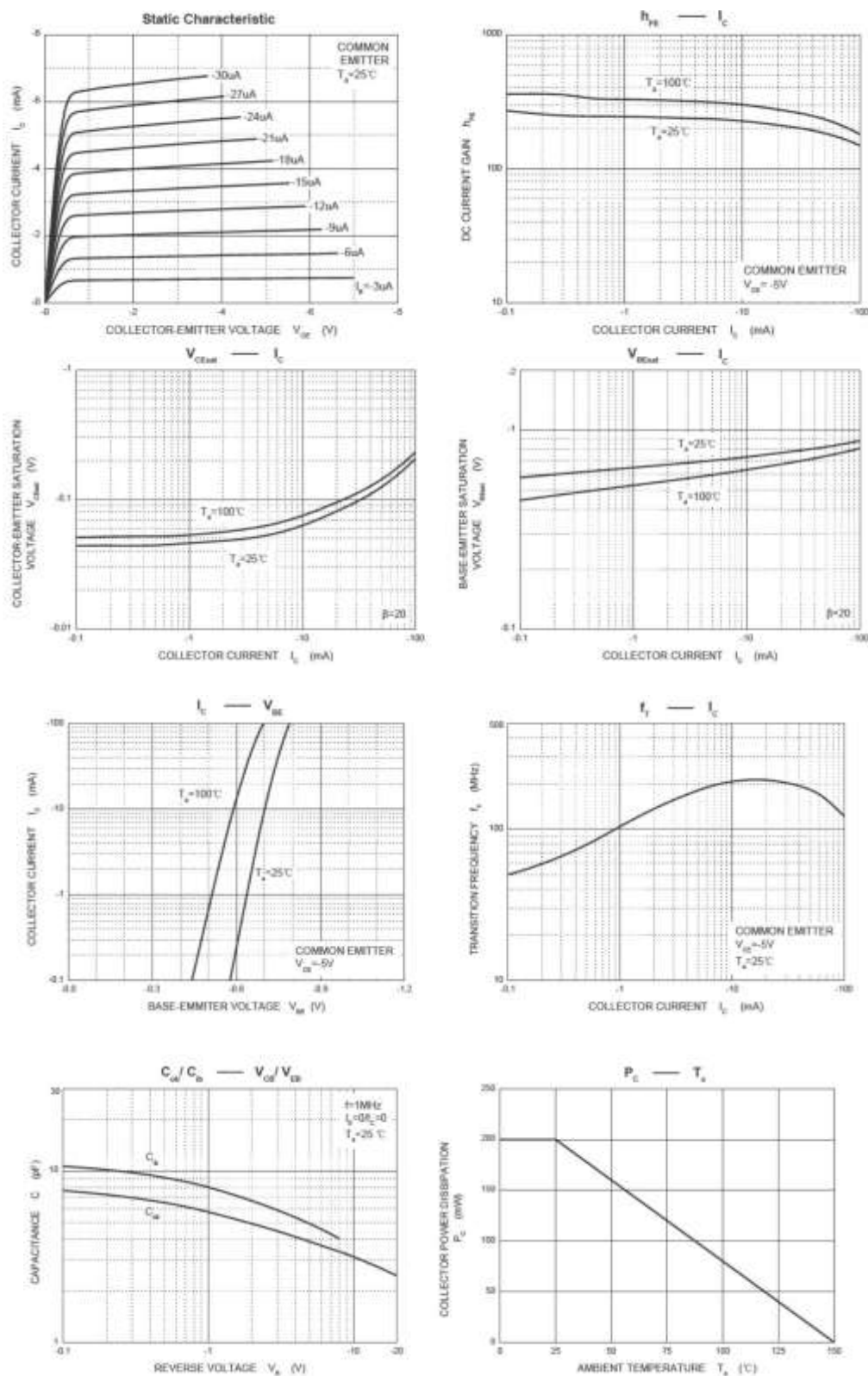
Electrical Characteristics (At $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameters	Symbols	Test Condition		Limits			
				Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0$	BC856	-80			V
			BC857	-50			
			BC858	-30			
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -10\text{mA}, I_B = 0$	BC856	-65			V
			BC857	-45			
			BC858	-30			
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}, I_C = 0$		-6			V
Collector cut-off current	I_{CBO}	$V_{CB} = -70\text{V}, I_E = 0$	BC856			-100	nA
		$V_{CB} = -45\text{V}, I_E = 0$	BC857				
		$V_{CB} = -25\text{V}, I_E = 0$	BC858				
Emitter cut-off current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$				-100	nA
DC current gain	h_{FE}	$V_{CE} = -5\text{V}, I_C = -2\text{mA}$	BC856/7/8A	125		250	
			BC856/7/8B	220		475	
			BC857/8C	420		800	
Collector-emitter saturation voltage	$V_{CE(sat)}^*$	$I_C = -100\text{mA}, I_B = -5\text{mA}$				-0.50	V
Base-emitter saturation voltage	$V_{BE(sat)}^*$	$I_C = -100\text{mA}, I_B = -5\text{mA}$				-1.10	V
Collector output capacitance	C_{OB}	$V_{CB} = -10\text{V}, f = 1\text{MHz}$				4.5	pF
Transition frequency	f_T	$V_{CE} = -5\text{V}, I_C = -10\text{mA}, f = 100\text{MHz}$		100			MHz

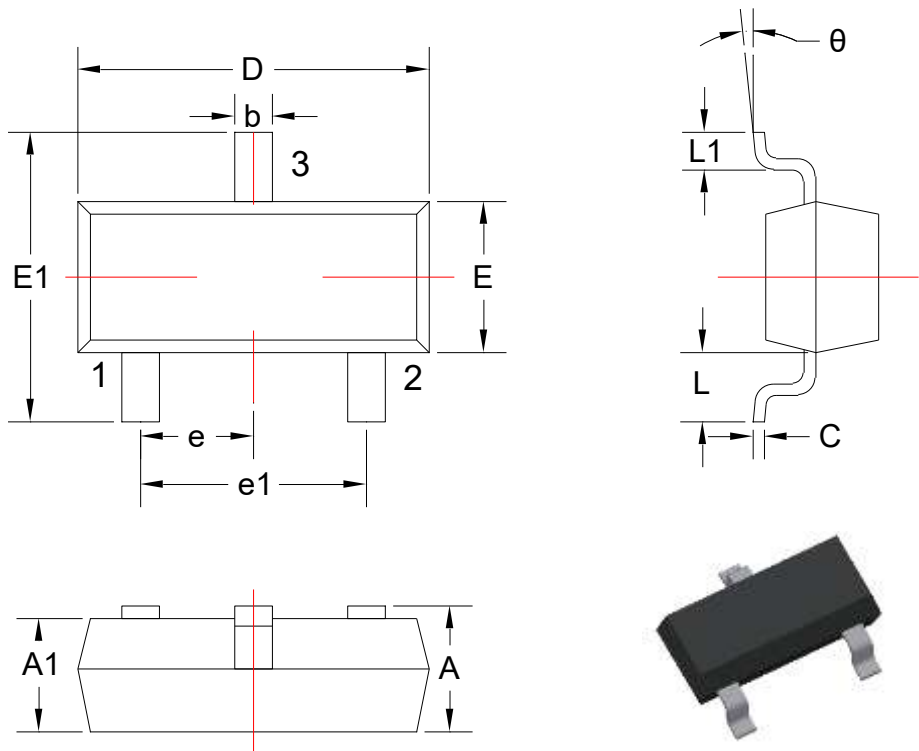
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5. Typical Characteristic

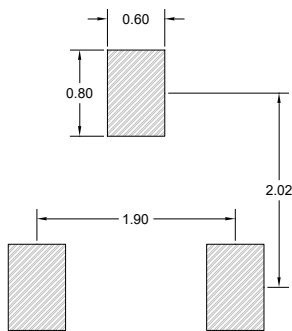


6. Dimension and Patterns (SOT-23)



Units: mm

Symbol	Dimensions		Symbol	Dimensions	
	Min.	Max.		Min.	Max.
A	0.900	1.150	E1	2.250	2.550
A1	0.900	1.050	e	0.950TYP	
b	0.300	0.500	e1	1.800	2.000
c	0.080	0.150	L	0.550REF	
D	2.800	3.00	L1	0.300	0.500
E	1.200	1.400	theta	0°	8°



- Note:**
1. Controlling dimension: in millimeters
 2. General tolerance: $\pm 0.05\text{mm}$
 3. The pad layout is for reference only
 4. Unit: mm

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