

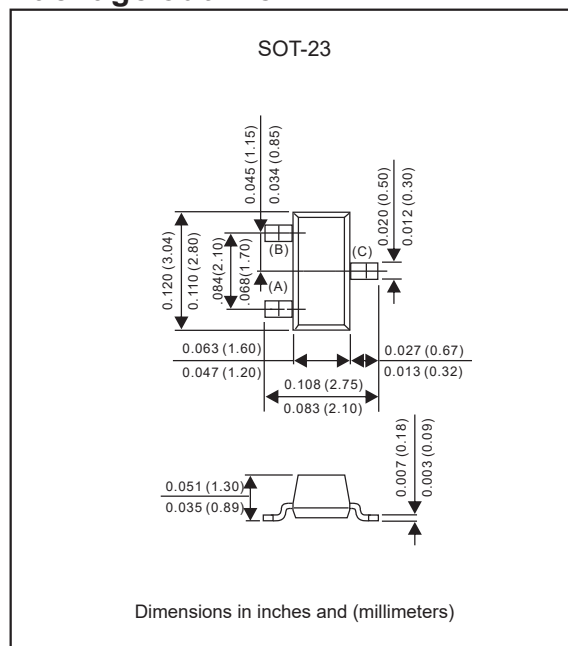
Features

- Moisture sensitivity level: 1
- Epitaxial plana chip construction
- Ideal for medium power application and switching
- Capable of 200mW power dissipation.
- Lead-free parts for green partner, exceeds environmental standards of MIL-STD-19500 /228
- Compliant to Halogen-free

Mechanical data

- Epoxy: UL94-V0 rated flame retardant
- Case : Molded plastic, SOT-23
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any

Package outline



Maximum ratings (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Rating		Symbol	Value	UNIT
Collector-Base voltage	BC856 Series BC857 Series BC858 Series	V_{CBO}	-80 -50 -30	V
Collector-Emitter voltage	BC856 Series BC857 Series BC858 Series	V_{CEO}	-65 -45 -30	V
Emitter-Base voltage		V_{EBO}	-5.0	V
Collector current-continuous		I_C	-100	mAdc

Thermal characteristics

PARAMETER	Symbol	MIN.	TYP.	MAX.	UNIT
Collector power dissipation	P_C			200	mW
Thermal resistance Junction to ambient	$R_{\theta JA}$		625		$^{\circ}\text{C/W}$
Operating junction temperature range	T_J	-55		+150	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55		+150	$^{\circ}\text{C}$

Electrical characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Off characteristics

PARAMETER		CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Collector-Base breakdown voltage	BC856 Series BC857 Series BC858 Series	$I_c = -10\mu\text{A}$, $I_E = 0$	$V_{(BR)CBO}$	-80 -50 -30			V
Collector-Emitter breakdown voltage	BC856 Series BC857 Series BC858 Series	$I_c = -10\text{mA}$, $I_B = 0$	$V_{(BR)CEO}$	-65 -45 -30			V
Emitter-Base breakdown voltage	BC856 Series BC857 Series BC858 Series	$I_E = -1.0\mu\text{A}$, $I_C = 0$	$V_{(BR)EBO}$	-5.0 -5.0 -5.0			V
Collect Cut-off Current	BC856 Series BC857 Series BC858 Series	$V_{CB} = -70\text{V}$, $I_E = 0$ $V_{CB} = -45\text{V}$, $I_E = 0$ $V_{CB} = -25\text{V}$, $I_E = 0$	I_{CBO}			-100	nA
Emitter Cut-off Current		$V_{CB} = -5\text{V}$, $I_E = 0$	I_{EBO}			-100	nA

On characteristics

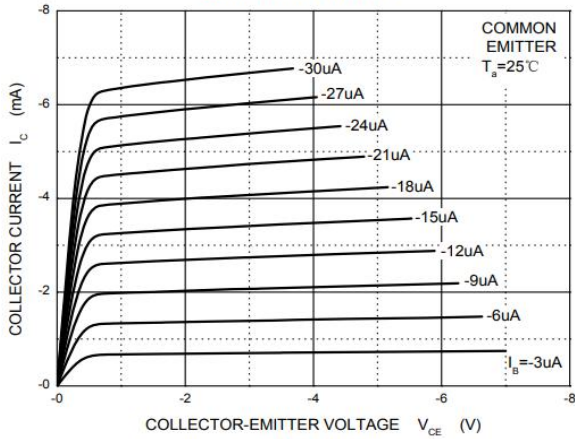
PARAMETER		CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
DC current gain	BC856A,BC857A,BC858A BC856B,BC857B,BC858B BC857C,BC858C	$I_c = -2.0\text{mA}$, $V_{CE} = -5.0\text{V}$	h_{FE}	125 220 420		250 475 800	
Collector-Emitter saturation voltage		$I_c = -100\text{mA}$, $I_B = -5.0\text{mA}$	$V_{CE(sat)}$			-0.50	V
Base-Emitter saturation voltage		$I_c = -100\text{mA}$, $I_B = -5.0\text{mA}$	$V_{BE(sat)}$			-1.10	V

Small-signal characteristics

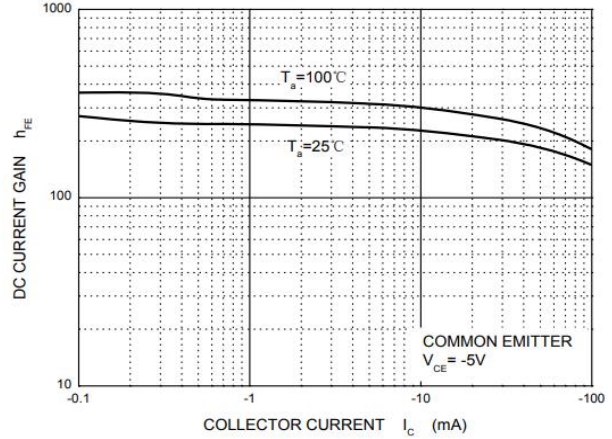
PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Current-gain-bandwidth product	$I_c = -10\text{mA}$, $V_{CE} = -5.0\text{Vdc}$, $f = 100\text{MHz}$	f_T	100			MHz
Output capacitance	$V_{CB} = -5.0\text{V}$, $f = 1.0\text{MHz}$	C_{obo}			4.5	pF

Rating and characteristic curves

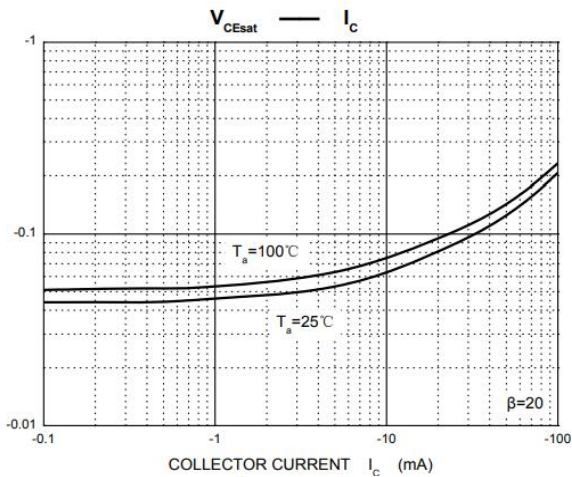
Static Characteristic



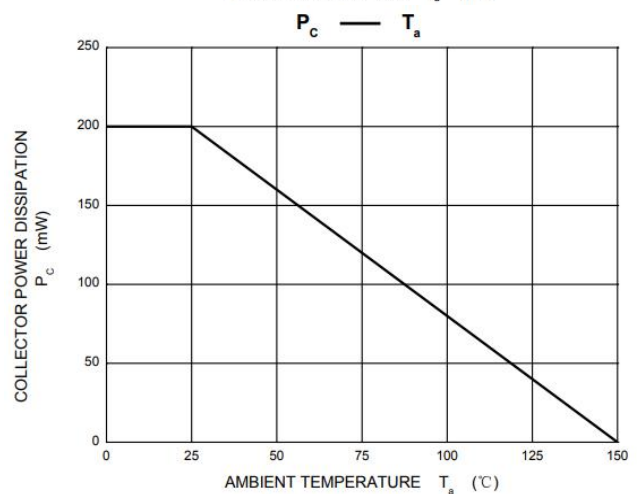
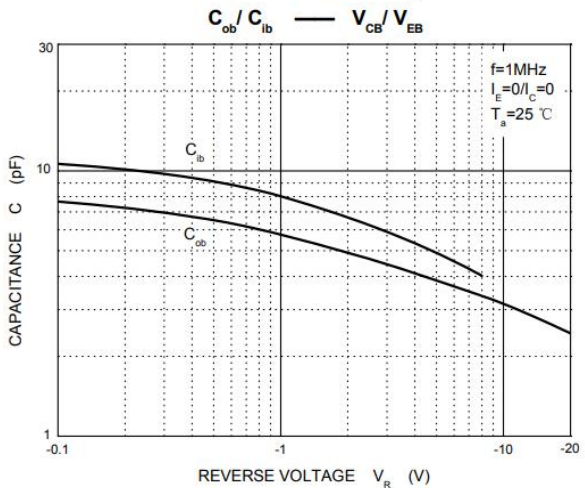
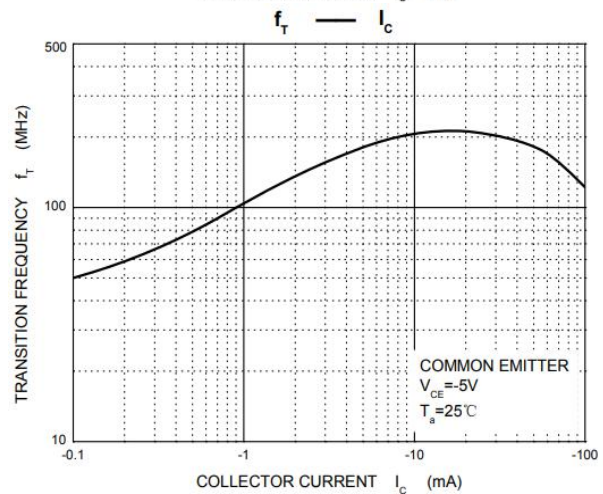
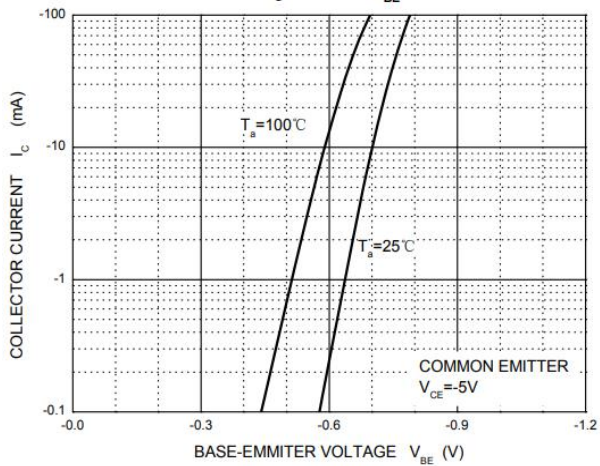
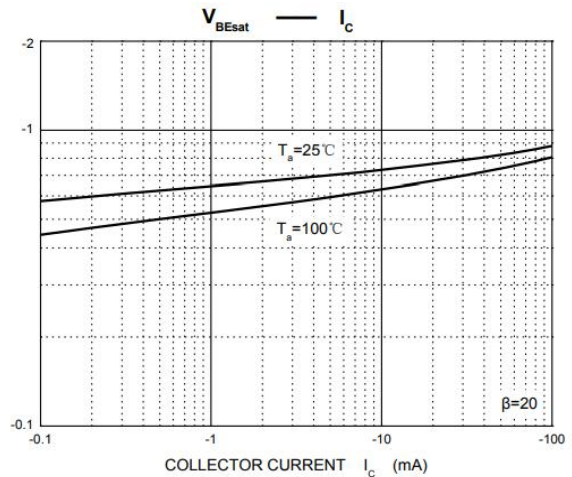
h_{FE} — I_C



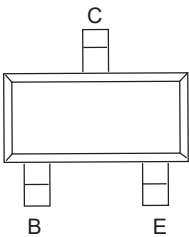
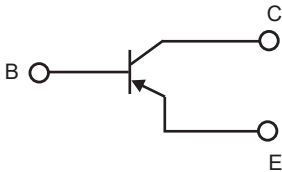
Collector-Emitter Saturation Voltage V_{CEsat} (V)



Base-Emitter Saturation Voltage V_{BEsat} (V)



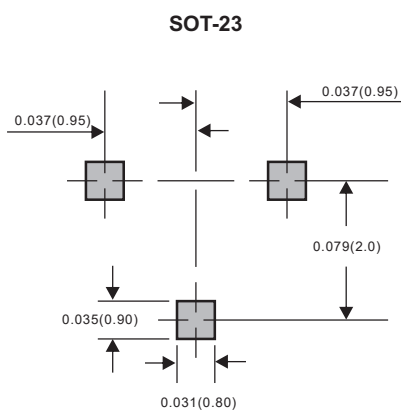
Pinning information

Pin	Simplified outline	Symbol
PinB Base PinC Collector PinE Emitter		

Marking

Type number	Marking code
BC856A	3A
BC856B	3B
BC857A	3E
BC857B	3F
BC857C	3G
BC858A	3J
BC858B	3K
BC858C	3L

Suggested solder pad layout



Dimensions in inches and (millimeters)