

200mW, PNP Small Signal Transistor

FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

APPLICATIONS

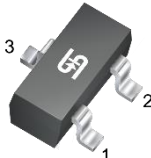
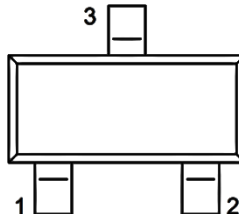
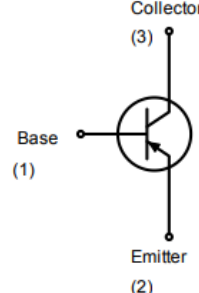
- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- On-board DC/DC converter

MECHANICAL DATA

- Case: SOT-23
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Weight: 0.008 g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
V_{CBO}	-80	V
V_{CEO}	-65	V
V_{EBO}	-5	V
I_C	-0.1	A
h_{FE}	250-800	



PACKAGE: SOT-23	PIN CONFIGURATION	CIRCUIT DIAGRAM
		

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER		SYMBOL	VALUE	UNIT
Power dissipation		P_D	200	mW
Collector-base voltage	BC856	V_{CBO}	-80	V
	BC857		-50	
	BC858		-30	
Collector-emitter voltage	BC856	V_{CEO}	-65	V
	BC857		-45	
	BC858		-30	
Emitter-base voltage		V_{EBO}	-5	V
Collector current		I_C	-0.1	A
Junction temperature		T_J	-55 to +150	$^\circ\text{C}$

Storage temperature	T_{STG}	-55 to +150	°C
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ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS		SYMBOL	MIN	MAX	UNIT
Collector cutoff current	$V_{CB} = -70\text{ V}, I_E = 0$	BC856	I_{CBO}	-	-100	nA
	$V_{CB} = -45\text{ V}, I_E = 0$	BC857		-	-100	
	$V_{CB} = -25\text{ V}, I_E = 0$	BC858		-	-100	
Emitter cutoff current	$V_{EB} = -5\text{ V}, I_C = 0$		I_{EBO}	-	-0.1	μA
Collector-base voltage	$I_C = -10\text{ }\mu\text{A}, I_E = 0$	BC856	V_{CBO}	-80	-	V
		BC857		-50	-	
		BC858		-30	-	
Collector-emitter voltage	$I_C = -10\text{ mA}, I_B = 0$	BC856	V_{CEO}	-65	-	V
		BC857		-45	-	
		BC858		-30	-	
Emitter-base voltage	$I_E = -1\text{ }\mu\text{A}, I_C = 0$		V_{EBO}	-5	-	V
DC current gain	$V_{CE} = -5\text{ V}, I_C = -2\text{ mA}$	BC856A/BC857A/BC858A	h_{FE}	125	250	
		BC856B/BC857B/BC858B		220	475	
		BC857C/BC858C		420	800	
Collector-emitter saturation voltage	$I_C = -100\text{ mA}, I_B = -5\text{ mA}$		$V_{CE(sat)}$	-	-0.65	V
Base-emitter saturation voltage	$I_C = -100\text{ mA}, I_B = -5\text{ mA}$		$V_{BE(sat)}$	-	-1.10	V
Transition frequency	$V_{CE} = -5\text{ V}, I_C = -10\text{ mA}, f = 100\text{ MHz}$		f_T	100	-	MHz

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING	DEVICE MARKING
BC856A RFG	SOT-23	3K / 7" Reel	3A
BC856B RFG	SOT-23	3K / 7" Reel	3B
BC857A RFG	SOT-23	3K / 7" Reel	3E
BC857B RFG	SOT-23	3K / 7" Reel	3F
BC857C RFG	SOT-23	3K / 7" Reel	3G
BC858A RFG	SOT-23	3K / 7" Reel	3J
BC858B RFG	SOT-23	3K / 7" Reel	3K
BC858C RFG	SOT-23	3K / 7" Reel	3L

CHARACTERISTICS CURVES

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

Fig.1 Static Characteristic

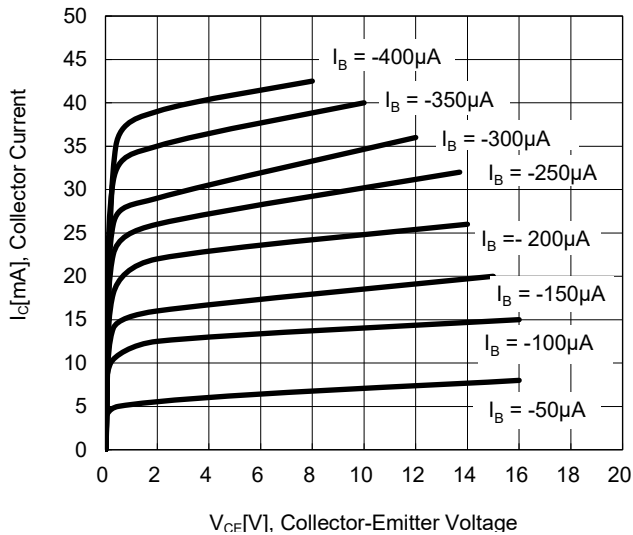


Fig. 2 DC Current Gain

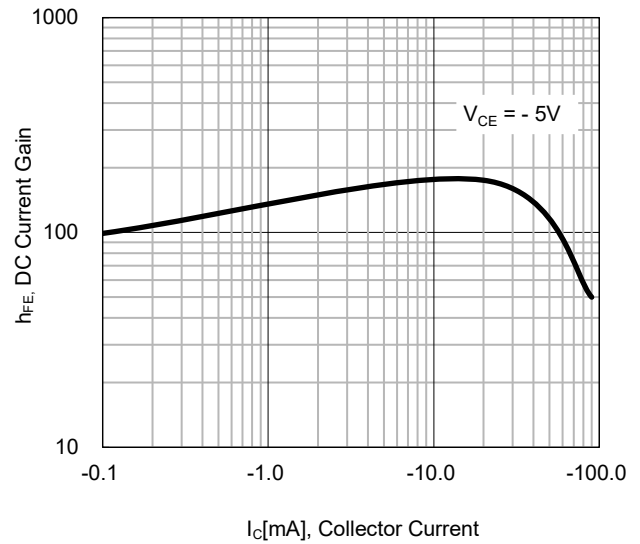


Fig.3 Base-Emitter Saturation Voltage VS. Collector-Emitter Saturation

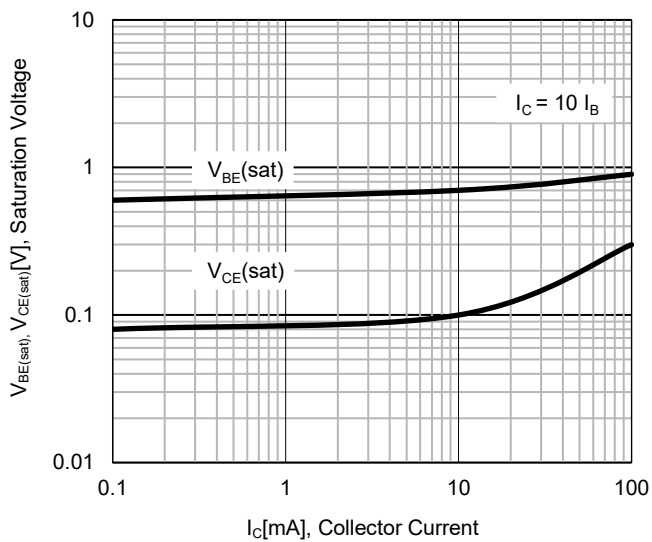
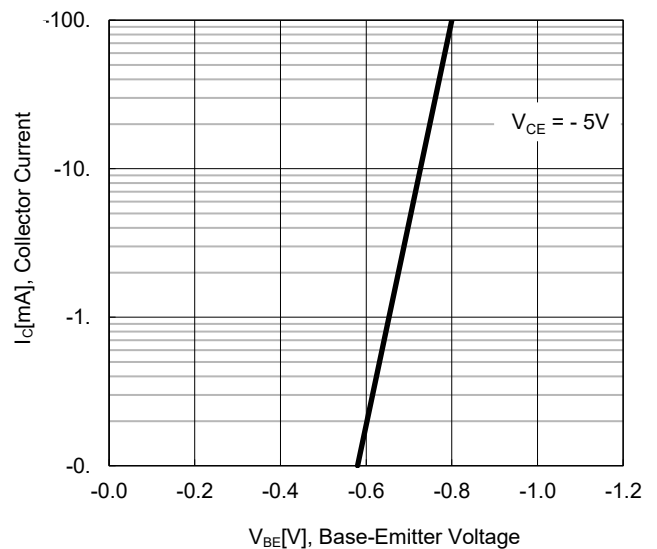


Fig.4 Base-Emitter On Voltage



CHARACTERISTICS CURVES

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

Fig.5 Collector Output Capacitance

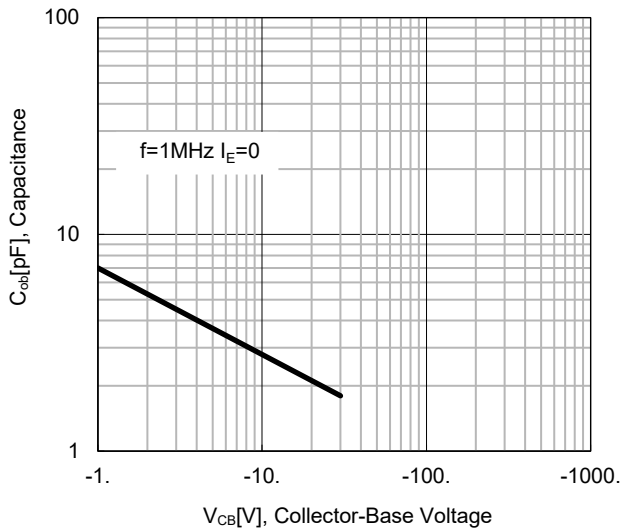


Fig. 6 Current Gain Bandwidth Product

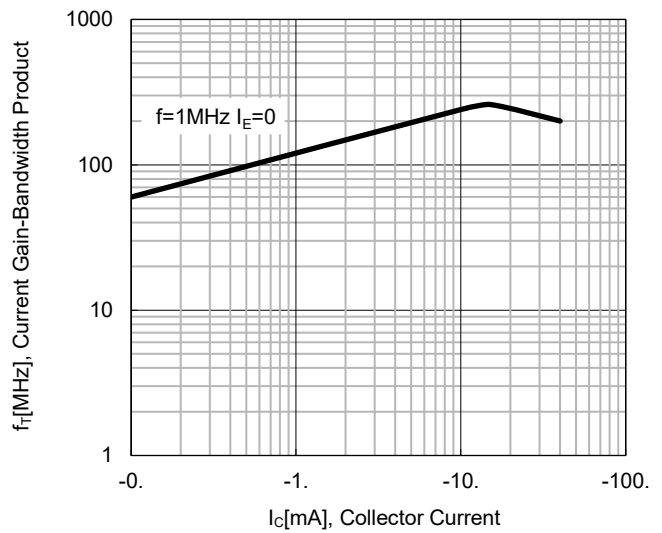


Fig.7 DC Current Gain as a Function of Collector Current; Typical Values

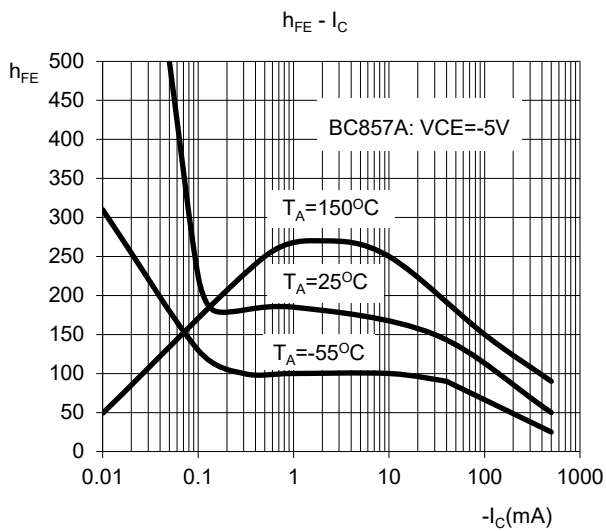
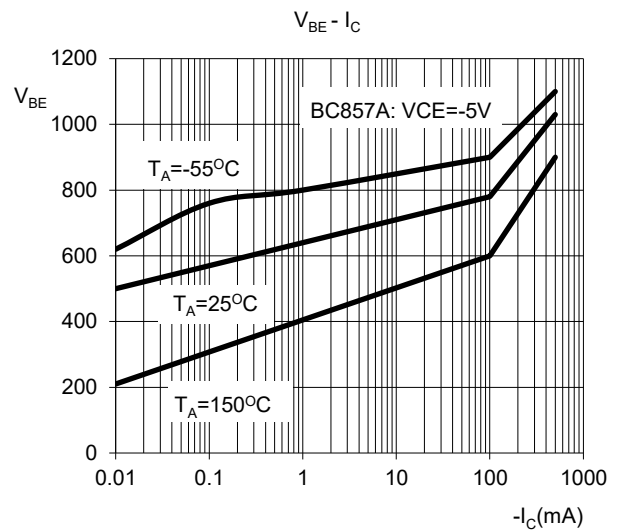


Fig.8 Base-Emitter Voltage as a Function of Collector Current; Typical Values



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