

SOT-23 Plastic-Encapsulate Transistors

Features

- Complementary to BC846 THRU BC848
- Power dissipation of 200mW
- High stability and high reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

Mechanical Data

- Case: SOT-23
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

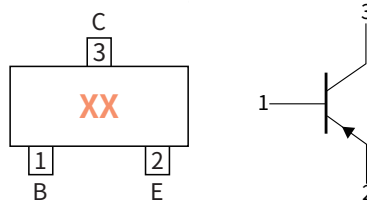
Function Diagram

XX = Device Code

3A = BC856A, 3B = BC856B

3E = BC857A, 3F = BC857B, 3G = BC857C

3J = BC858A, 3K = BC858B, 3L = BC858C

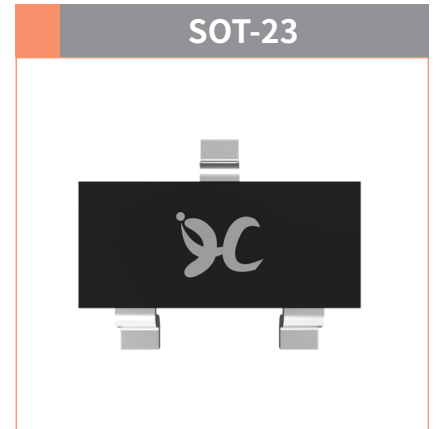


Collector-Base Voltage

VCBO -80V/-50V/-30

Collector Current

-0.1Ampere



Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	CONDITIONS		VALUE
Collector-Base Voltage	V_{CBO}	V	BC856	$I_C = -10\mu A, I_E = 0$	-80
			BC857		-50
			BC858		-30
Collector-Emitter Voltage	V_{CEO}	V	BC856	$I_C = -10mA, I_B = 0$	-65
			BC857		-45
			BC858		-30
Emitter-Base Voltage	V_{EBO}		$I_C = 0, I_E = -10\mu A$		-5.0
Collector Current	I_C	A	—		-0.1
Collector Power Dissipation	P_C	mW	—		200
Storage temperature	T_{stg}	°C	—		-55 ~ +150
Junction temperature	T_j	°C	—		-55 ~ +150
Typical Thermal Resistance	$R_{\theta J-A}$	°C / W	—		625

Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.008	3000	45000	180000	7"

BC856 THRU BC858

PNP TRANSISTORS

● Electrical Characteristics (Ta=25°C Unless otherwise noted)

PARAMETER	SYMBOL	UNIT	Condition		Min	Max	
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	V	$I_C=-10\mu A, I_E=0$		BC856	-80	—
					BC857	-50	—
					BC858	-30	—
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$		$I_C=-10mA, I_E=0$		BC856	-65	—
					BC857	-45	—
					BC858	-30	—
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu A, I_C=0$		-5.0	—		
Collector-Base cut-off current	I_{CBO}	μA	BC856	$V_{CB}=-70V$	—	-0.1	
			BC857	$V_{CB}=-45V$	—	-0.1	
			BC858	$V_{CB}=-25V$	—	-0.1	
Collector-Emitter cut-off current	I_{CEO}		BC856	$V_{CE}=-60V$	—	-0.1	
			BC857	$V_{CE}=-40V$	—	-0.1	
			BC858	$V_{CE}=-25V$	—	-0.1	
Emitter-Base cut-off current	I_{EBO}	$V_{EB}=-5.0V, I_C=0$		—	-0.1		
DC Current Gain	h_{FE}	—	BC856A,857A,858A	$I_C=-2mA, V_{CE}=-5.0V$	120	250	
			BC856B,857B,858B		220	475	
			BC857C,BC858C		420	800	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	$I_C=-100mA, I_B=-5mA$		—	-0.5	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	V	$I_C=-100mA, I_B=-5mA$		—	-1.1	

● Small-signal Characteristics

ITEM	SYMBOL	Condition	UNIT	Min	Max
Transition frequency	f_T	$I_C=-10mA, V_{CE}=-5V, f=100MHz$	MHz	100	—

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)

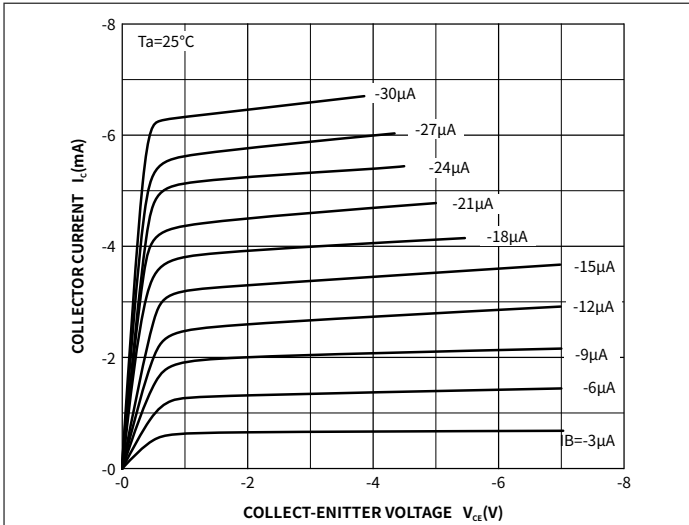


Fig.1 Static Characteristic

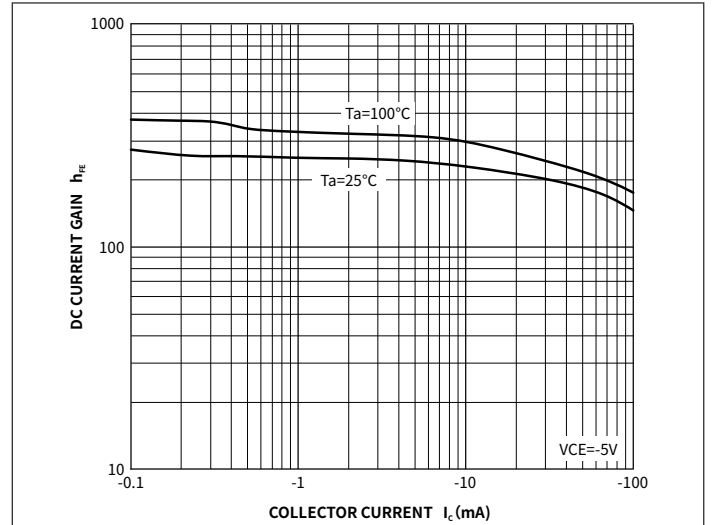


Fig.2 DC Current Gain

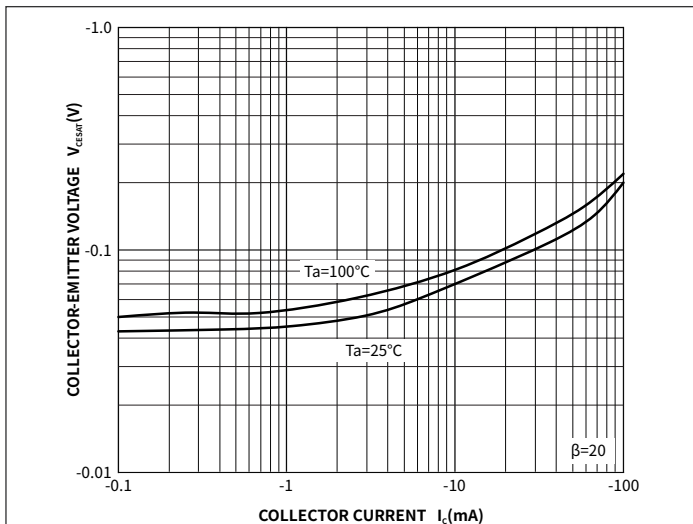


Fig.3 Collector-Emitter Saturation Voltage

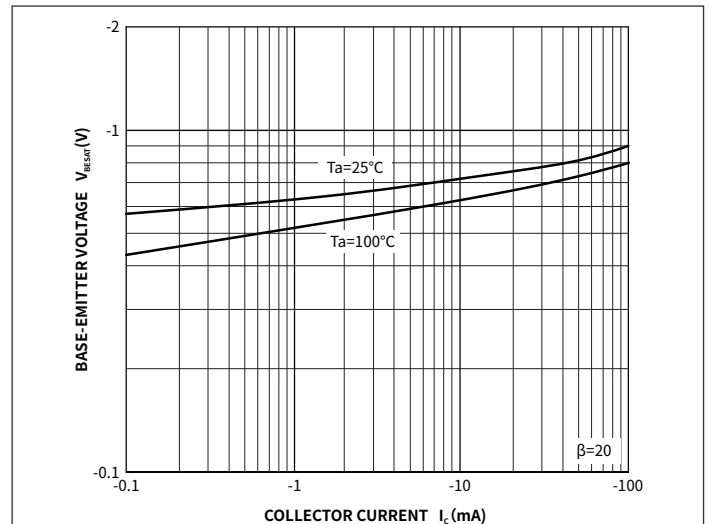


Fig.4 Base-Emitter Saturation Voltage

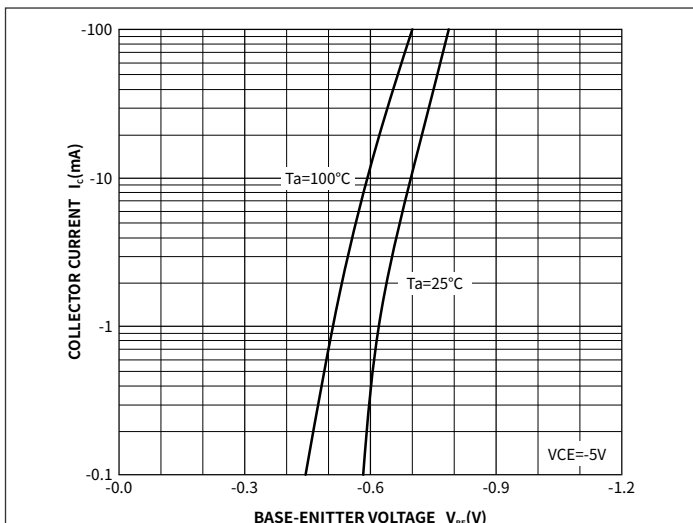


Fig.5 Base-Emitter On Voltage

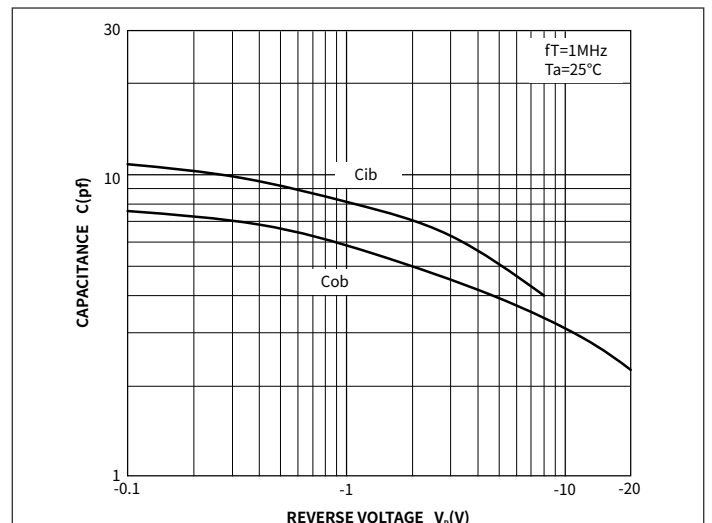


Fig.6 Cob/Cib-V_{CB}V_{EB}

BC856 THRU BC858

PNP TRANSISTORS

● Package Outline Dimensions (SOT-23)

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.15	0.035	0.045
A1	-	0.10	-	0.004
A2	0.90	1.05	0.035	0.041
b	0.30	0.50	0.012	0.020
c	0.10	0.20	0.004	0.008
D	2.80	3.00	0.110	0.118
E	1.20	1.40	0.047	0.055
E1	2.25	2.55	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.80	2.00	0.071	0.079
L	0.550REF		0.022REF	
L1	0.30	0.50	0.012	0.020
θ	-	8°	-	8°

● Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.80	-	0.031	-
K	-	0.90	-	0.035
M	2.00	-	0.078	-
N	-	1.90	-	0.074