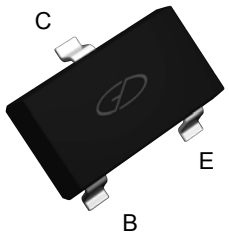
GOOD-ARK
SEMICONDUCTOR

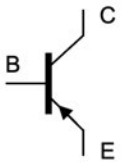
BC857x Series
PNP Small Signal Transistors

Features

- Ideally suited for automatic insertion
- Complementary NPN types available (BC847x series)
- RoHS compliant



Package: SOT-23



Schematic Diagram

Applications

- For switching and RF amplifier applications

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-45	V
Emitter-Base Voltage	V_{EBO}	-5	V
Peak Collector Current	I_{cm}	-300	mA
Collector Current-Continuous	I_C	-100	mA
Collector Power Dissipation	P_C	200	mW
Typical Thermal Resistance, from Jucntion to Ambient	$R_{\theta JA}$	410	°C/W
Operating Temperature	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	I_{CBO}	V_{CB}=-30V, I_E=0V	-	-	-15	nA
DC Current Gain	h_{FE}	V_{CE}=-5.0V, I_C=-2.0mA	125	-	800	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=-10mA, I_B=-0.5mA	-	-0.09	-0.3	V
		I_C=-100mA, I_B=-5.0mA	-	-0.25	-0.65	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=-10mA, I_B=-0.5mA	-	-0.7	-	V
		I_C=-100mA, I_B=-5.0mA	-	-0.9	-	V
Base-Emitter Voltage	V_{BE}	V_{CE}=-5.0V, I_C=-2.0mA	-0.6	-0.65	-0.75	V
		V_{CE}=-5.0V, I_C=-10mA	-	-	-0.82	V
Transition Frequency	f_T	V_{CE}=-5.0V, I_C=-10mA, f=100MHz	-	150	-	MHz
Collector Output Capacitance	C_{ob}	V_{CB}=-10V, I_E=0, f=1.0MHz	-	-	4.5	pF
Noise Figure	N_F	V_{CE}=-5.0V, I_C=-0.2mA, R_G=2KΩ, f=1.0KHz	-	2	10	dB

Classifications

h_{FE} Classification	BC857A	BC857B	BC857C
h_{FE} Range	125-250	220-475	420-800

Ratings and Characteristic Curves

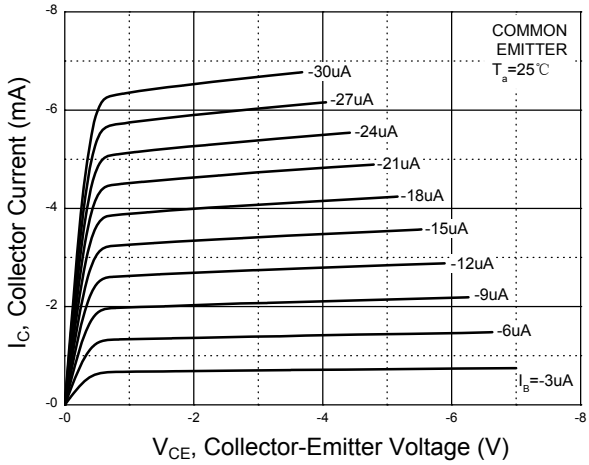


Figure 1. Static Characteristics

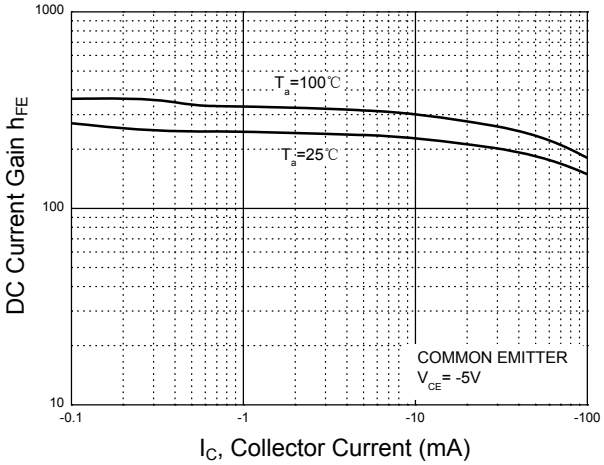


Figure 2. DC Current Gain vs. Collector Current

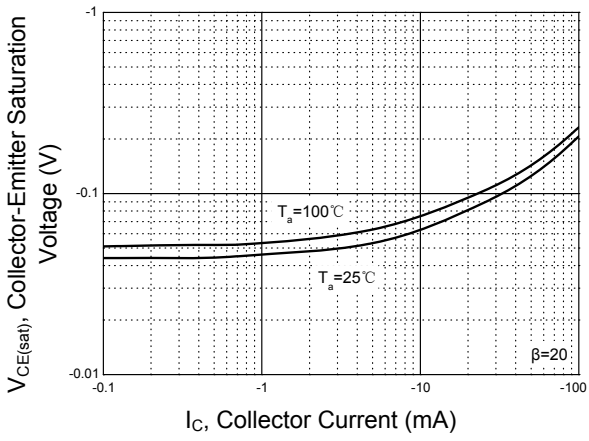


Figure 3. Collector-Emitter Saturation Voltage vs. Collector Current

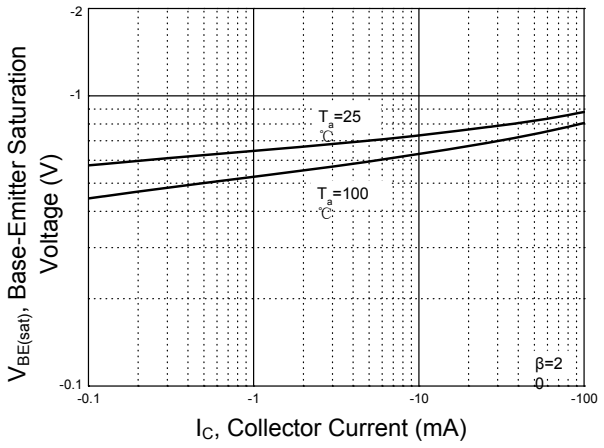


Figure 4. Base-Emitter Saturation Voltage vs. Collector Current

Ratings and Characteristic Curves

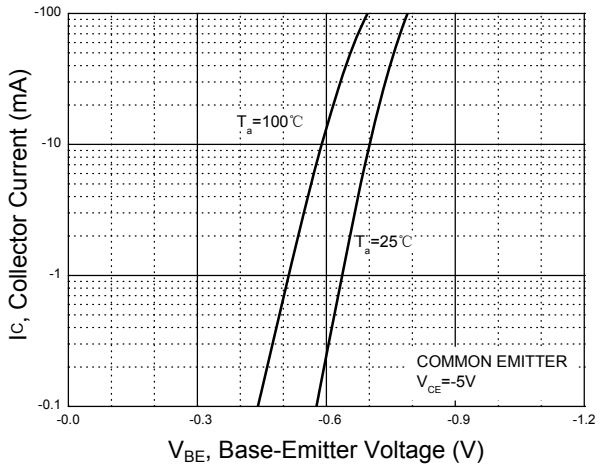


Figure 5. Collector Current vs. Base-Emitter Voltage

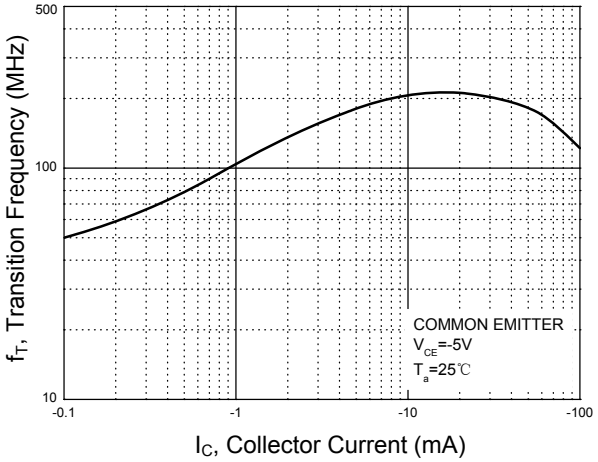


Figure 6. Transition Frequency vs. Collector Current

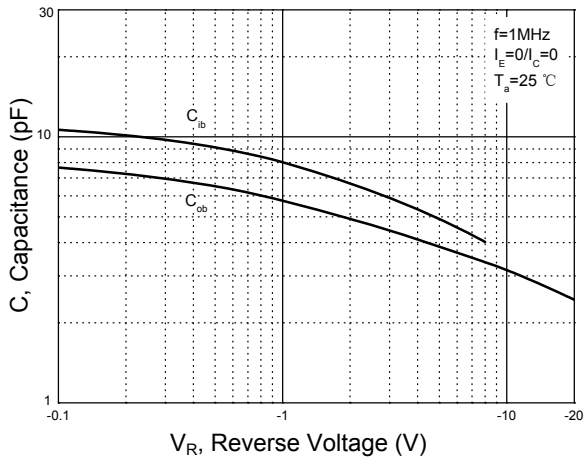


Figure 7. Capacitance vs. Reverse Voltage

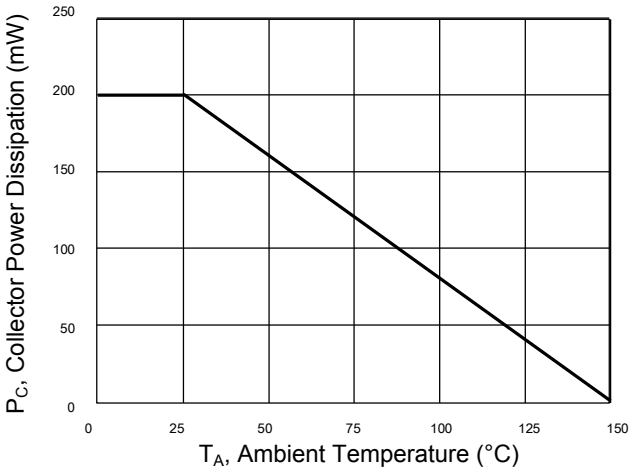
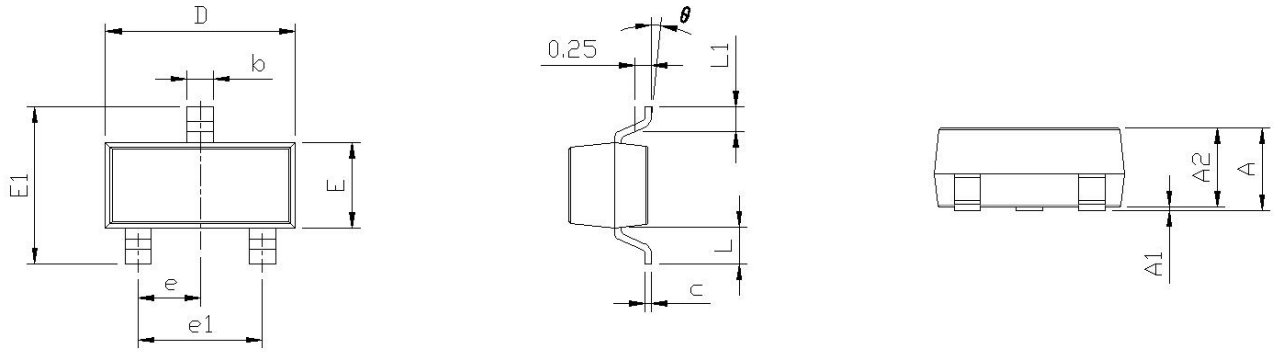


Figure 8. Power Dissipation vs. Ambient Temperature

Package Outline Dimensions (SOT-23)



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°