

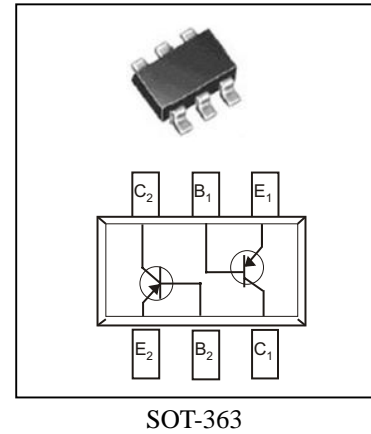
Features

- Ideally Suited for Automatic Insertion
- For Switching and AF Amplifier Applications
- Ultra-Small Surface Mount Package
- Lead Free/RoHS Compliant (Note 2)

Mechanical Data

- Case: SOT-363
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).

BC857BS (PNP)



Maximum Ratings @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	-50	V
Collector-Emitter Voltage	V _{CEO}	-45	V
Emitter-Base Voltage	V _{EBO}	-5.0	V
Collector Current (Note 1)	I _C	-100	mA
Peak Collector Current (Note 1)	I _{CM}	-200	mA
Peak Base Current (Note 1)	I _{BM}	-200	mA
Power Dissipation at T _{SB} = 50°C (Note 1)	P _d	200	mW
Operating and Storage Temperature Range	T _j , T _{STG}	-55 to +125	°C

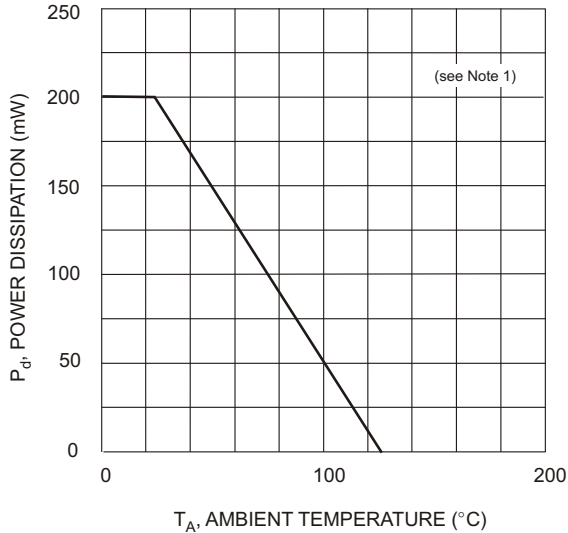
- Notes: 1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
 2. No purposefully added lead.

Electrical Characteristics @ T_A = 25°C unless otherwise specified

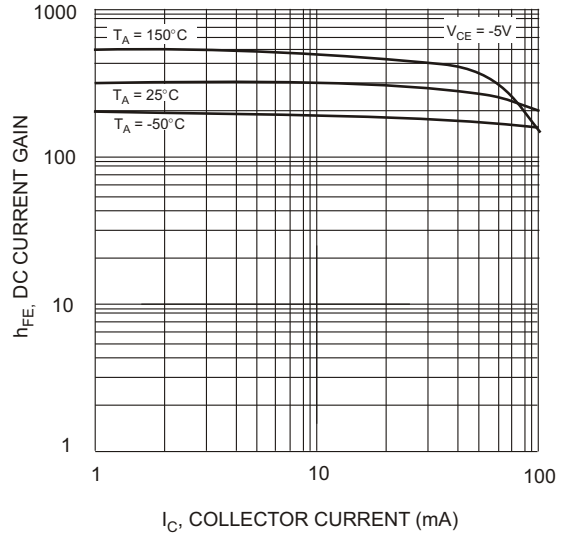
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
DC Current Gain (Note 3)	h _{FE}	220	—	475	—	V _{CE} = -5.0V, I _C = -2.0mA
Thermal Resistance, Junction to Ambient Air (Note 1)	R _{JA}	—	—	625	°C/W	Note 1
Collector-Emitter Saturation Voltage (Note 3)	V _{CE(SAT)}	—	—	-100 -400	mV	I _C = -10mA, I _B = -0.5mA I _C = -100mA, I _B = -5.0mA
Base-Emitter Saturation Voltage (Note 3)	V _{BE(SAT)}	—	-700	—	mV	I _C = -10mA, I _B = -0.5mA
Base-Emitter Voltage (Note 3)	V _{BE}	-580	-665	-750	mV	V _{CE} = -5.0V, I _C = -2.0mA
Collector Cutoff Current	I _{CBO} I _{CBO}	—	—	-15 -4.0	nA μA	V _{CB} = -30V, I _E = 0 V _{CB} = -30V, T _j = 150°C
Emitter Cutoff Current	I _{EBO}	—	—	-100	nA	V _{EB} = -5.0V, I _C = 0
Gain Bandwidth Product	f _T	100	—	—	MHz	V _{CE} = -5.0V, I _C = -10mA, f = 100MHz
Collector-Base Capacitance	C _{CBO}	—	—	3	pF	V _{CB} = -10V, f = 1.0MHz
Emitter-Base Capacitance	C _{EBO}	—	11	—	pF	V _{EB} = -0.5V, f = 1.0MHz

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 2. No purposefully added lead.
 3. Short duration test pulse used to minimize self-heating effect.

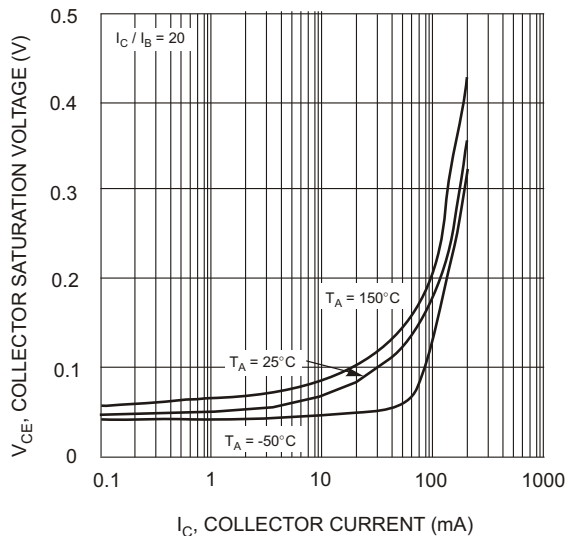
BC857BS Typical Characteristics



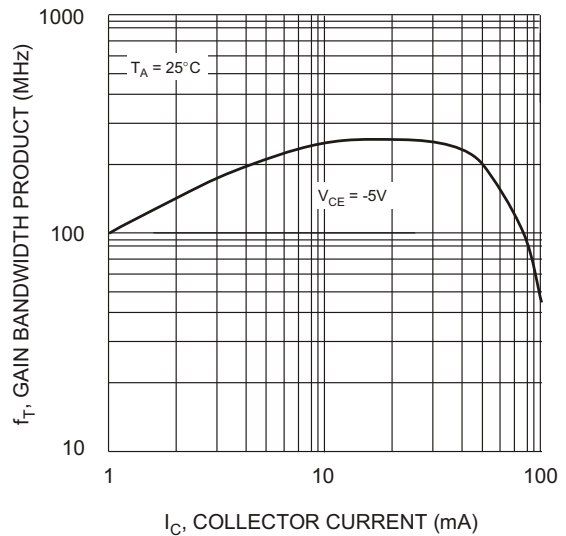
T_A, AMBIENT TEMPERATURE (°C)
Fig. 1, Power Derating Curve



I_C, COLLECTOR CURRENT (mA)
Fig. 2, DC Current Gain vs. Collector Current



I_C, COLLECTOR CURRENT (mA)
Fig. 3, Collector Saturation Voltage vs. Collector Current



I_C, COLLECTOR CURRENT (mA)
Fig. 4, Gain Bandwidth Product vs. Collector Current