

BC857BS-AU

PNP GENERAL PURPOSE DUAL TRANSISTORS

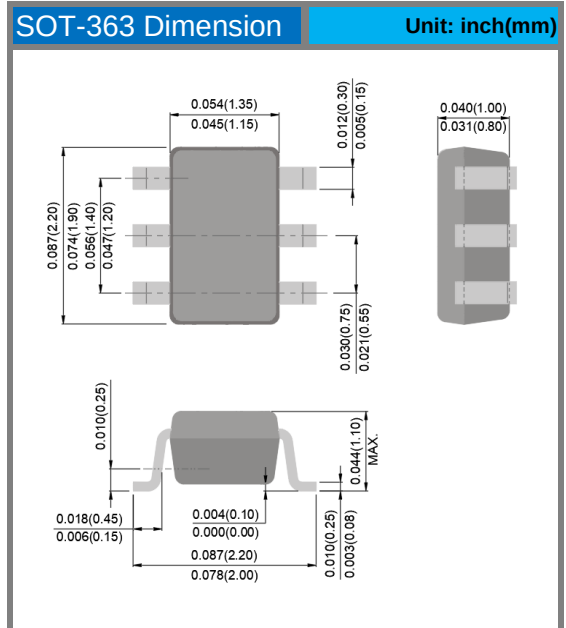
VOLTAGE	45 Volt	POWER	150 mWatt
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FEATURES

- General purpose amplifier applications
- PNP epitaxial silicon, planar design
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard
- AEC-Q101 qualified

MECHANICAL DATA

- Case: SOT-363, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.006 gram
- Marking: 57S



ABSOLUTE MAXIMUM RATINGS

PARAMETER	Symbol	Value	Unit
Collector - Emitter Voltage	V_{CEO}	-45	V
Collector - Base Voltage	V_{CBO}	-50	V
Emitter - Base Voltage	V_{EBO}	-5.0	V
Collector Current - Continuous	I_C	100	mA

THERMAL CHARACTERISTICS

PARAMETER	Symbol	Value	Unit
Total Device Dissipation Per Device FR-5 Board (Note 1) $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	300 150 3.0	mW mW/ $^\circ\text{C}$
Thermal Resistance , Junction to Ambient	$R_{\theta JA}$	328	$^\circ\text{C/W}$
Junction Temperature	T_J	-55 to 150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to 150	$^\circ\text{C}$

Note : 1.FR-4 board 70 x 60 x 1mm.

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ELECTRICAL CHARACTERISTICS ($T_J=25^{\circ}\text{C}$, unless otherwise noted)

PARAMETER	Symbol	Test Condition	MIN.	TYP.	MAX.	Unit
OFF CHARACTERISTICS						
Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -10\text{mA}$	-45	-	-	V
Collector - Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C = -10\mu\text{A}$, $V_{EB} = 0$	-50	-	-	
Collector - Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}$	-50	-	-	V
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -1\mu\text{A}$	-5.0	-	-	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = -30\text{V}$, $V_{CB} = -30\text{V}$, $T_A = 150^{\circ}\text{C}$	-	-	-15 -5.0	nA uA
ON CHARACTERISTICS						
DC Current Gain	h_{FE}	$I_C = -10\mu\text{A}$, $V_{CE} = -5\text{V}$	-	150	-	-
DC Current Gain	h_{FE}	$I_C = -2.0\text{mA}$, $V_{CE} = -5\text{V}$	220	290	475	-
Collector - Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = -10\text{mA}$, $I_B = -0.5\text{mA}$ $I_C = -100\text{mA}$, $I_B = -5.0\text{mA}$	-	-	-0.3 -0.65	V
Base - Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = -10\text{mA}$, $I_B = -0.5\text{mA}$ $I_C = -100\text{mA}$, $I_B = -5.0\text{mA}$	-	-0.7 -0.9	-	V
Base - Emitter Voltage	$V_{BE(ON)}$	$I_C = -2\text{mA}$, $V_{CE} = -5.0\text{V}$ $I_C = -10\text{mA}$, $V_{CE} = -5.0\text{V}$	-0.6 -	- -	-0.75 -0.82	V
SMALL-SIGNAL CHARACTERISTICS						
Current-Gain-Bandwidth Product	f_T	$I_C = -10\text{mA}$, $V_{CE} = -5.0\text{Vdc}$ $f = 100\text{MHz}$	100	-	-	MHz
Output Capacitance	C_{obo}	$V_{CB} = -10\text{V}$, $f = 1.0\text{MHz}$	-	-	4.5	pF
Noise Figure	NF	$I_C = 0.2\text{mA}$, $V_{CE} = 5.0\text{Vdc}$, $R_S = 2.0\text{k}\Omega$, $f = 1.0\text{kHz}$, $\text{BW} = 200\text{Hz}$	-	-	10	dB

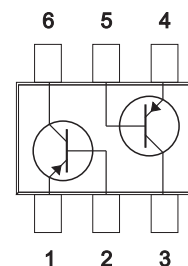


Fig.53

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ELECTRICAL CHARACTERISTICS CURVE

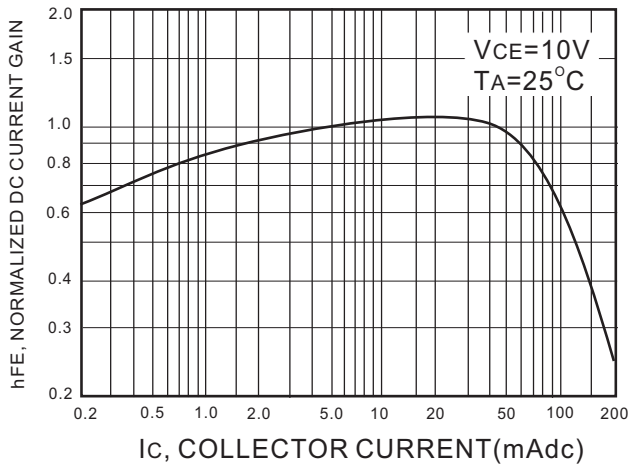


Figure 1. Normalized DC Current Gain

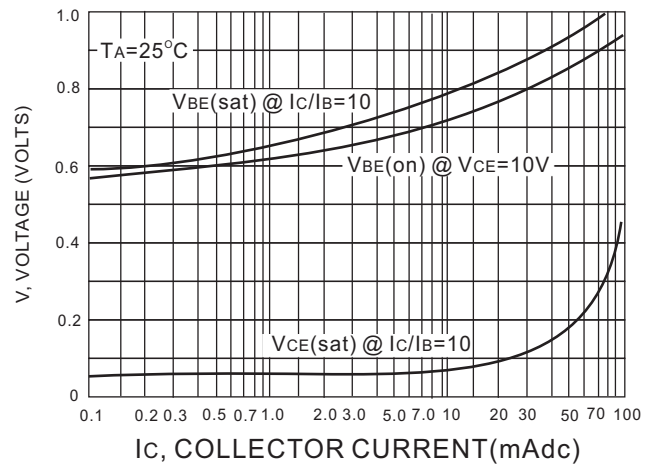


Figure 2. "Saturation" and "On" Voltages

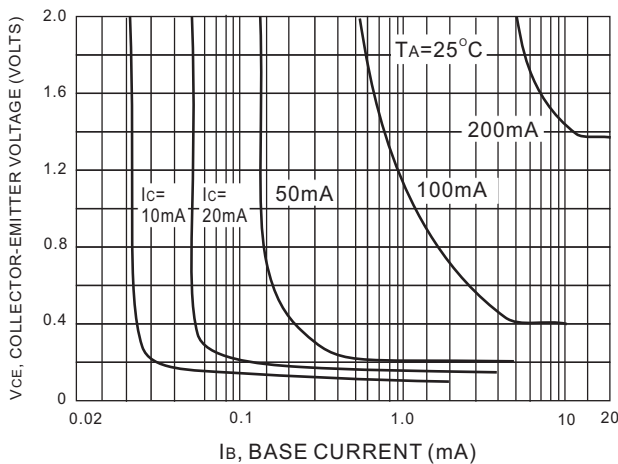


Figure 3. Collector Saturation Region

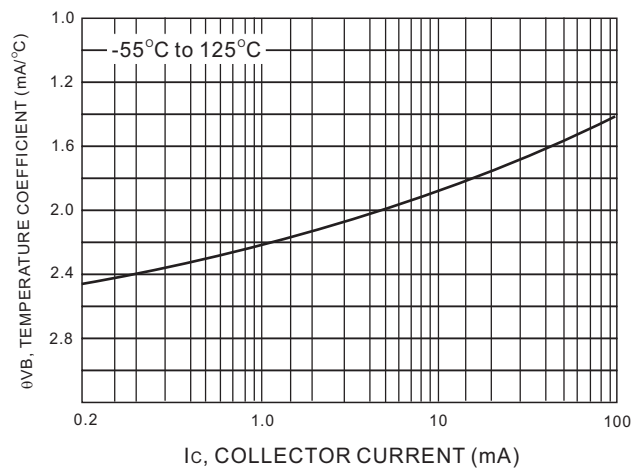


Figure 4. Base-Emitter Temperature Coefficient

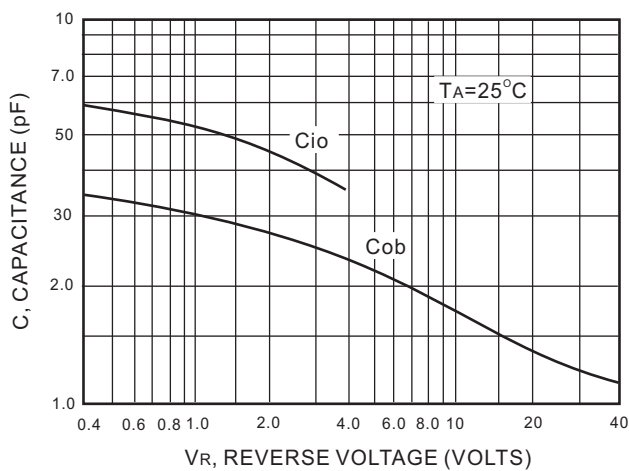


Figure 5. Capacitance

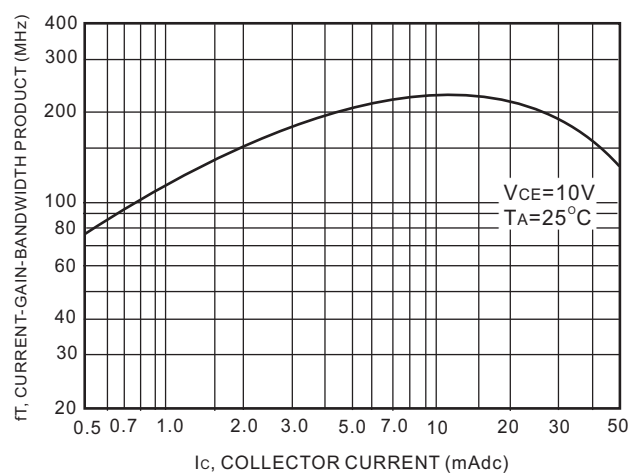


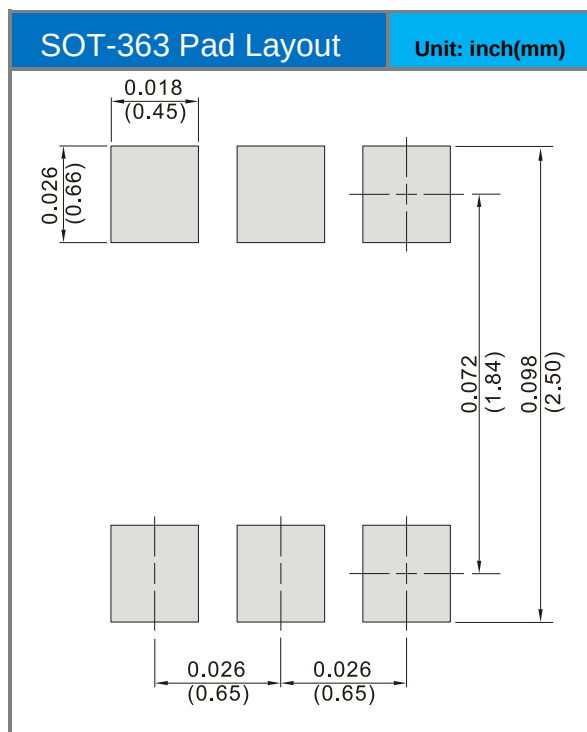
Figure 6. Current-Gain-Bandwidth Product

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Product and Packing Information

Part No.	Package Type	Packing Type	Marking
BC857BS-AU	SOT-363	3K pcs / 7" reel	57S
BC857BS-AU	SOT-363	10K pcs / 13" reel	57S

Mounting Pad Layout



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