



BC857BS

PNP GENERAL PURPOSE DUALTRANSISTORS

VOLTAGE 45 Volts **POWER** 150 mWatts

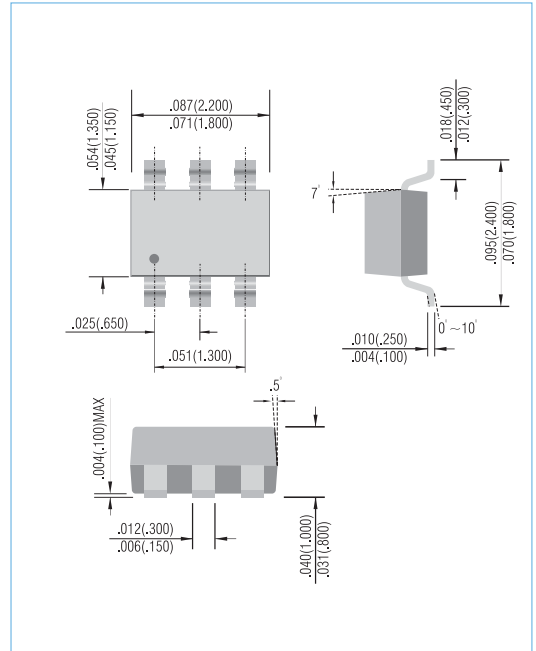
SOT-363 Unit: inch (mm)

FEATURES

- General purpose amplifier applications
- NPN epitaxial silicon, planar design
- In compliance with EU RoHS 2002/95/EC directives

MECHANICAL DATA

- Case: SOT-363, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.008 gram
- Marking : 57S



ABSOLUTE MAXIMUM RATINGS

PARAMETER	Symbol	Value	Units
Collector - Emitter Voltage	V_{CE0}	-45	V
Collector - Base Voltage	V_{CB0}	-50	V
Emitter - Base Voltage	V_{EB0}	-5.0	V
Collector Current - Continuous	I_C	100	mA

THERMAL CHARACTERISTICS

PARAMETER	Symbol	Value	Units
Total Device Dissipation Per Device FR-5 Board (Note 1) $T_A=25^{\circ}C$ Derate above 25°C	P_D	300 150 3.0	mW mW/°C
Thermal Resistance , Junction to Ambient	$R_{\theta JA}$	328	°C/W
Junction Temperature	T_J	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°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	$V_{(BR)EBO}$	$I_E=10\mu\text{A}$	-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}	$I_C=10\mu\text{A}, V_{CE}=5\text{V}$	200 420	150	- -	-
DC Current Gain	h_{FE}	$I_C=2.0\text{mA}, V_{CE}=5\text{V}$	- -	150	475 800	-
Collector - Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=0.5\text{mA}$ $I_C=100\text{mA}, I_B=5.0\text{mA}$	-	-	-0.25 -0.6	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	$V_{BE(SAT)}$	$I_C=2\text{mA}, V_{CE}=5.0\text{V}$ $I_C=10\text{mA}, V_{CE}=5.0\text{V}$	-580 -	-660 -	-700 -770	mV
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

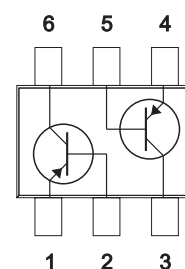


Fig.53



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ELECTRICAL CHARACTERISTICS CURVE

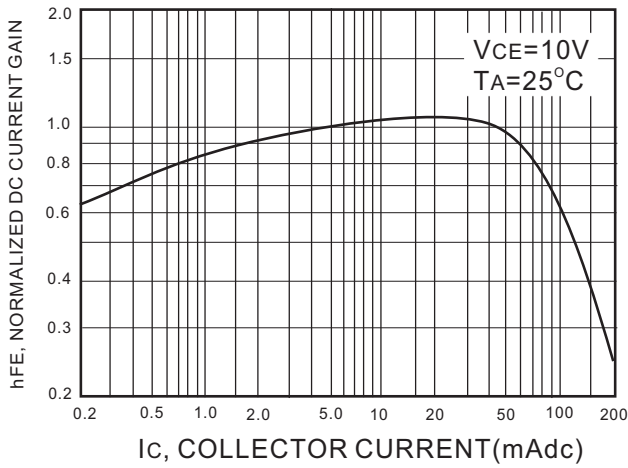


Figure 1. Normalized DC Current Gain

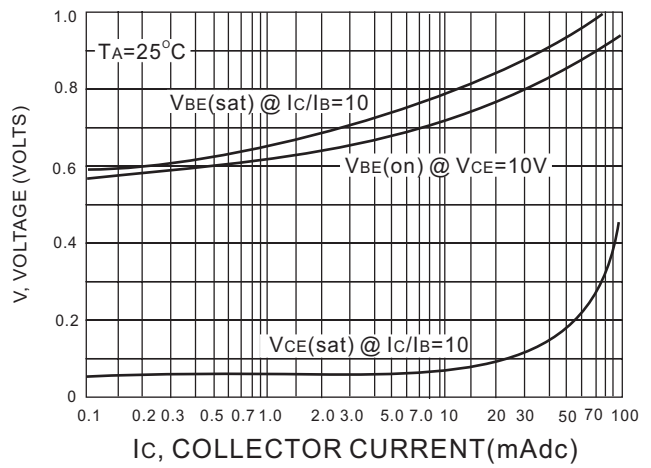


Figure 2. "Saturation" and "On" Voltages

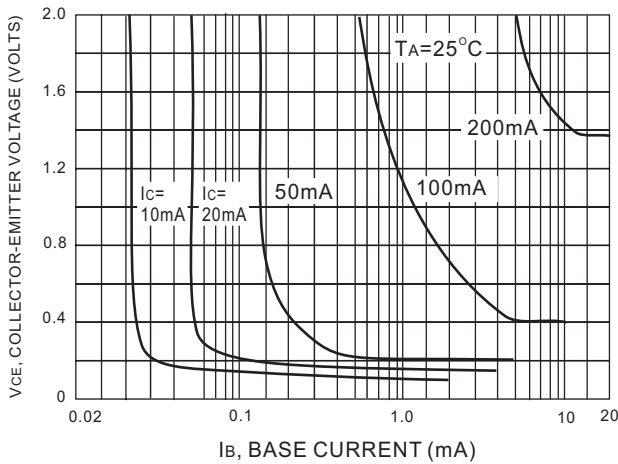


Figure 3. Collector Saturation Region

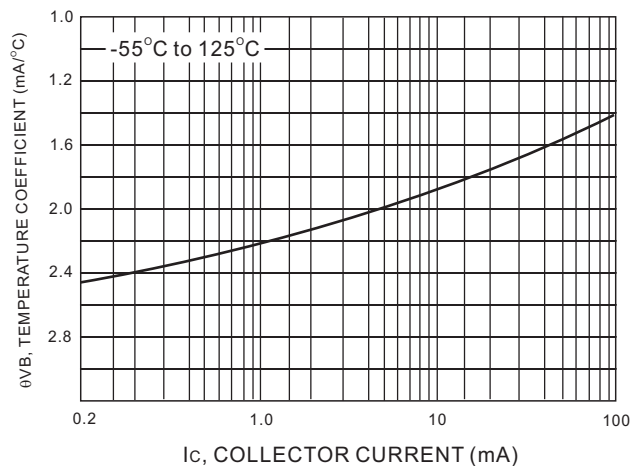


Figure 4. Base-Emitter Temperature Coefficient

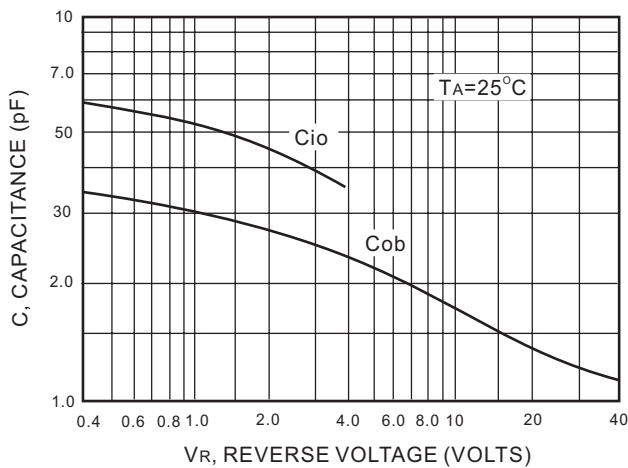


Figure 5. Capacitance

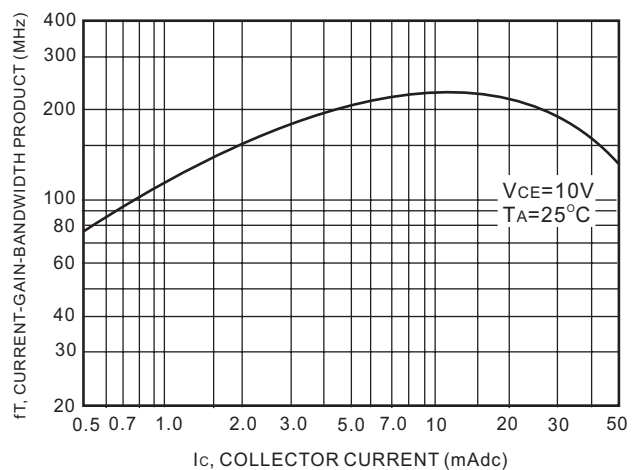
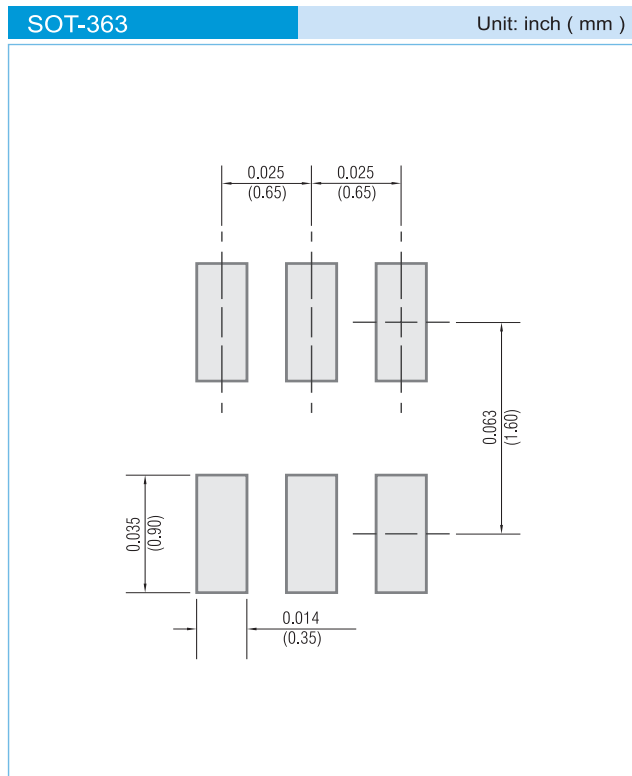


Figure 6. Current-Gain-Bandwidth Product



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MOUNTING PAD LAYOUT



ORDER INFORMATION

- Packing information

T/R - 10K per 13" plastic Reel

T/R - 3K per 7" plastic Reel

LEGAL STATEMENT

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