



BC857BS

PNP GENERAL PURPOSE DUALTRANSISTORS

VOLTAGE 45 Volts **POWER** 150 mWatts

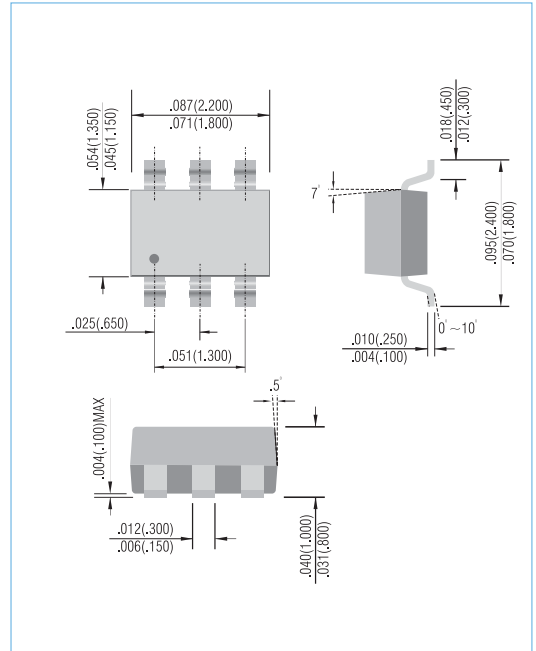
SOT-363 Unit: inch (mm)

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_{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	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°C, unless otherwise noted)

PARAMETER	Symbol	Test Condition	MIN.	TYP.	MAX.	Unit
OFF CHARACTERISTICS						
Collector - Emitter Breakdown Voltage	V _{(BR)CEO}	I _C =10mA	-45	-	-	V
Collector - Emitter Breakdown Voltage	V _{(BR)CES}	I _C =10μA, V _{EB} =0	-50	-	-	
Collector - Base Breakdown Voltage	V _{(BR)CBO}	I _C =10μA	-50	-	-	V
Emitter - Base Breakdown Voltage	V _{(BR)EBO}	I _E =10μA	-5.0	-	-	V
Collector Cutoff Current	I _{CBO}	V _{CB} =30V, V _{CB} =30V, T _A =150°C	-	-	-15 -5.0	nA μA
ON CHARACTERISTICS						
DC Current Gain	h _{FE}	I _C =10μA, V _{CE} =5V	200 420	150	- -	-
DC Current Gain	h _{FE}	I _C =2.0mA, V _{CE} =5V	- -	150	475 800	-
Collector - Emitter Saturation Voltage	V _{CE(SAT)}	I _C =10mA, I _B =0.5mA I _C =100mA, I _B =5.0mA	-	-	-0.25 -0.6	V
Base - Emitter Saturation Voltage	V _{BE(SAT)}	I _C =10mA, I _B =0.5mA I _C =100mA, I _B =5.0mA	- -	-0.7 -0.9	- -	V
Base - Emitter Voltage	V _{BE(SAT)}	I _C =2mA, V _{CE} =5.0V I _C =10mA, V _{CE} =5.0V	-580 -	-660 -	-700 -770	mV
SMALL-SIGNAL CHARACTERISTICS						
Current-Gain-Bandwidth Product	f _T	I _C =10mA, V _{CE} =5.0Vdc, f=100MHz	100	-	-	MHz
Output Capacitance	C _{obo}	V _{CB} =10V, f=1.0MHz	-	-	4.5	pF
Noise Figure	NF	I _C =0.2mA, V _{CE} =5.0Vdc, R _S =2.0kΩ, f=1.0kHz, BW=200Hz	-	-	10	dB

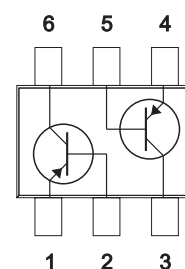


Fig.53



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ELECTRICAL CHARACTERISTICS CURVE

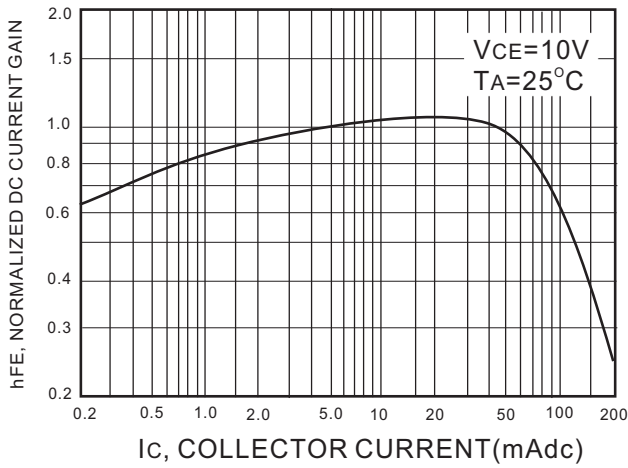


Figure 1. Normalized DC Current Gain

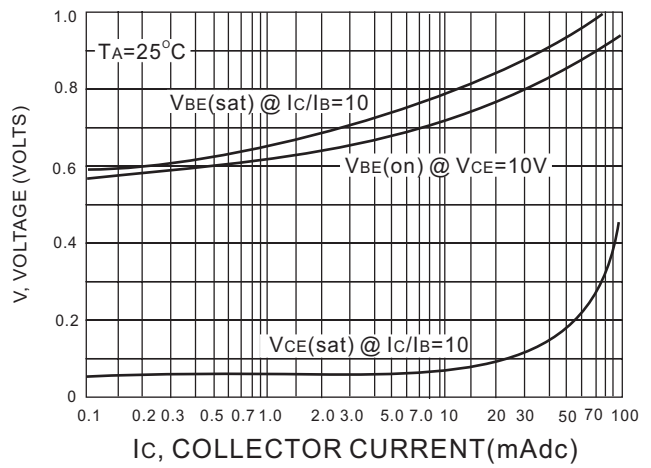


Figure 2. "Saturation" and "On" Voltages

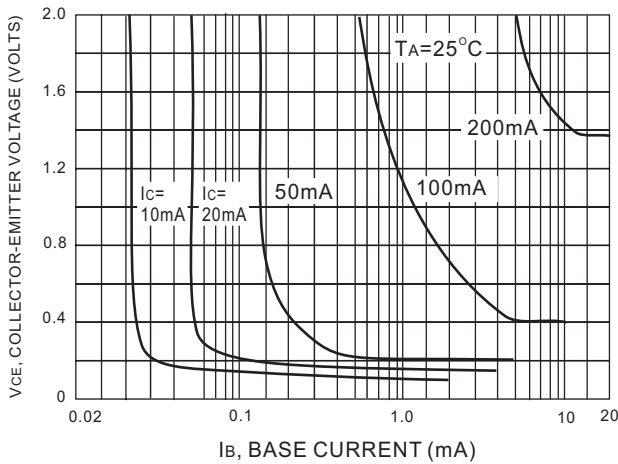


Figure 3. Collector Saturation Region

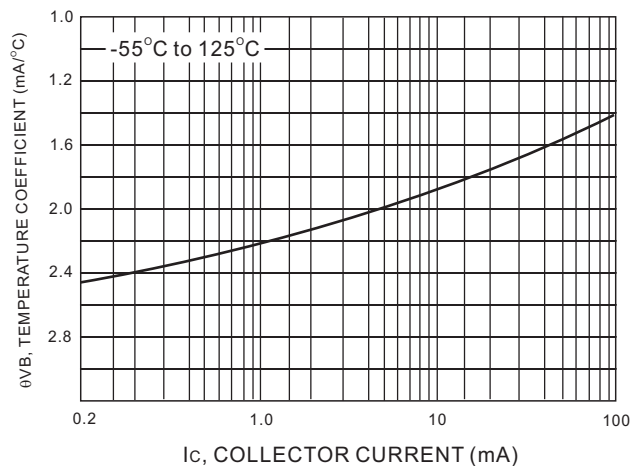


Figure 4. Base-Emitter Temperature Coefficient

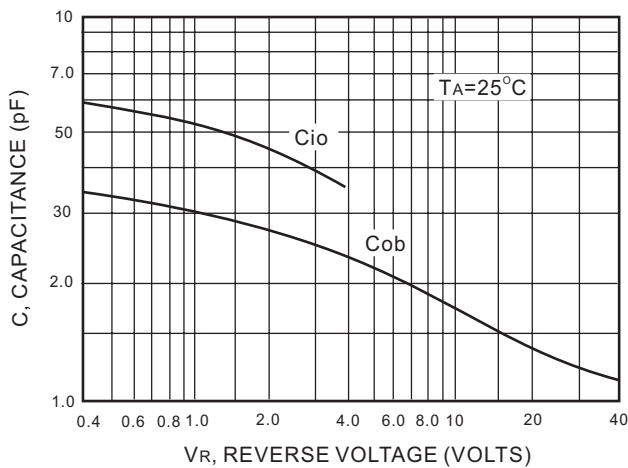


Figure 5. Capacitance

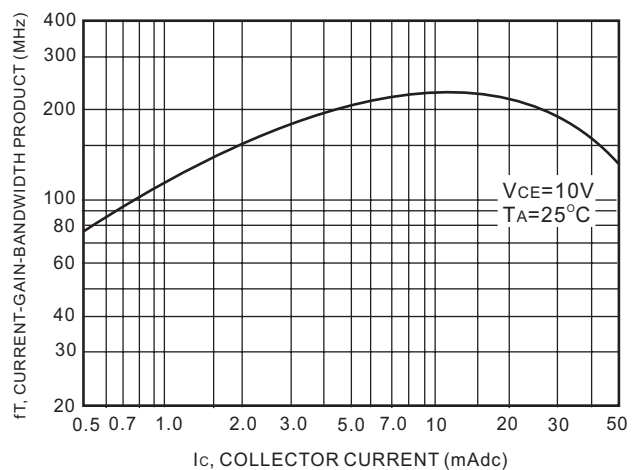
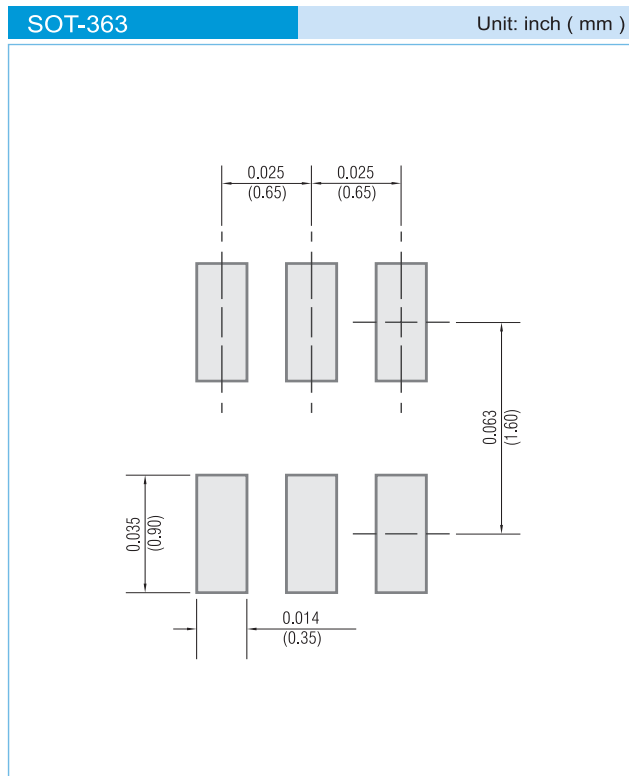


Figure 6. Current-Gain-Bandwidth Product



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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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