

BC857BS

PNP GENERAL PURPOSE DUALTRANSISTORS

VOLTAGE 45 Volts **POWER** 150 mWatts

SOT-363

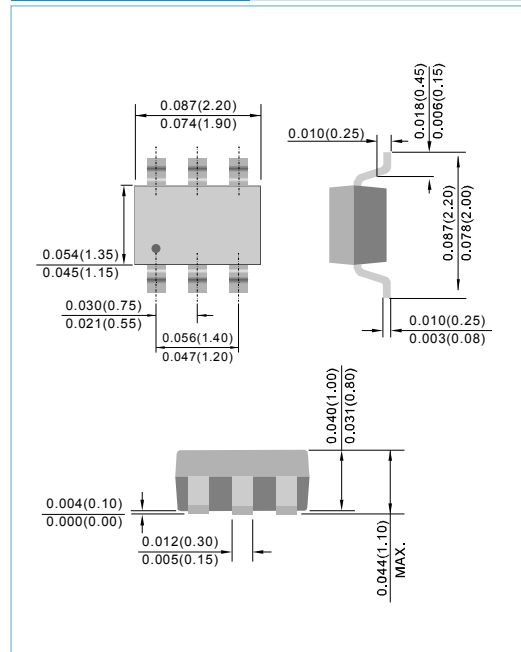
Unit: inch (mm)

FEATURES

- General purpose amplifier applications
- NPN epitaxial silicon, planar design
- Lead free in comply with EU RoHS 2011/65/EU directives.
- Green molding compound as per IEC61249 Std. . (Halogen Free)

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) $T_A = 25^\circ\text{C}$ 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	$V_{(BR)CES}$	$I_C = 10\text{uA}$, $V_{EB} = 0$	-50	-	-	
Collector - Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\text{uA}$	-50	-	-	V
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\text{uA}$	-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}	$I_C = 10\text{uA}$, $V_{CE} = 5\text{V}$	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

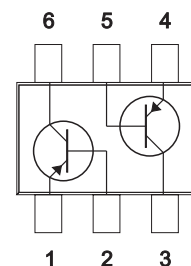


Fig.53

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ELECTRICAL CHARACTERISTICS CURVE

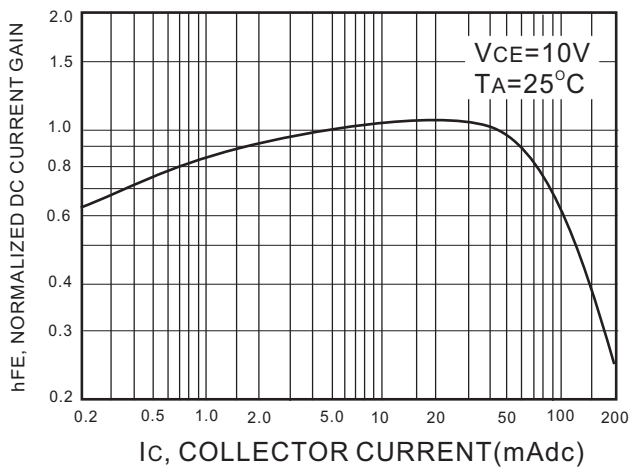


Figure 1. Normalized DC Current Gain

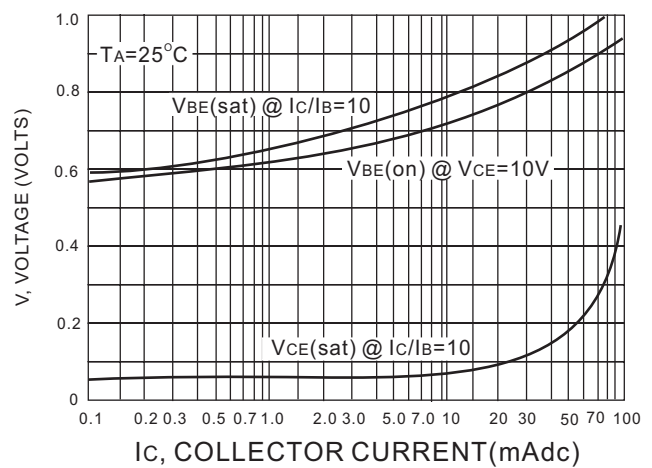


Figure 2. "Saturation" and "On" Voltages

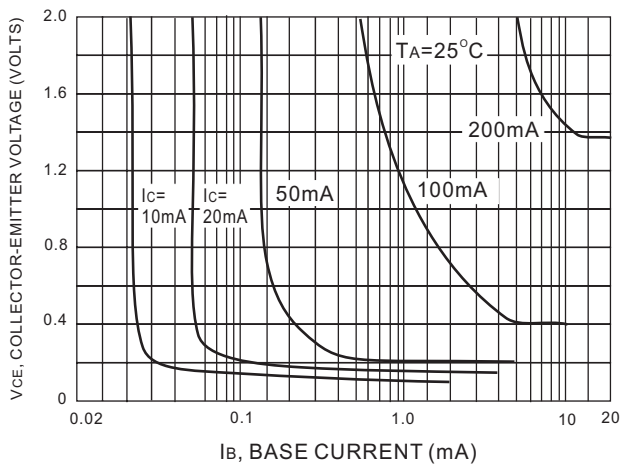


Figure 3. Collector Saturation Region

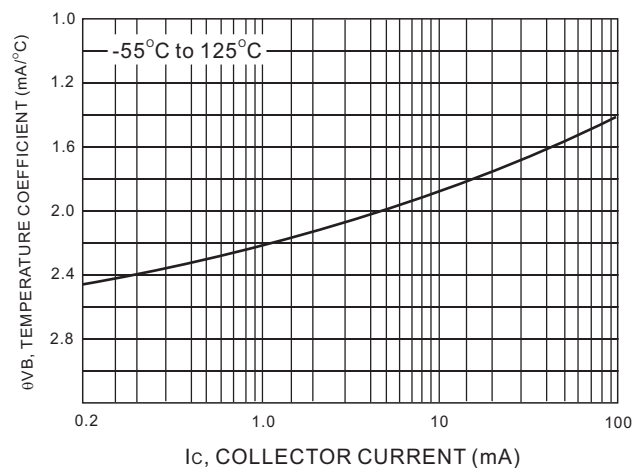


Figure 4. Base-Emitter Temperature Coefficient

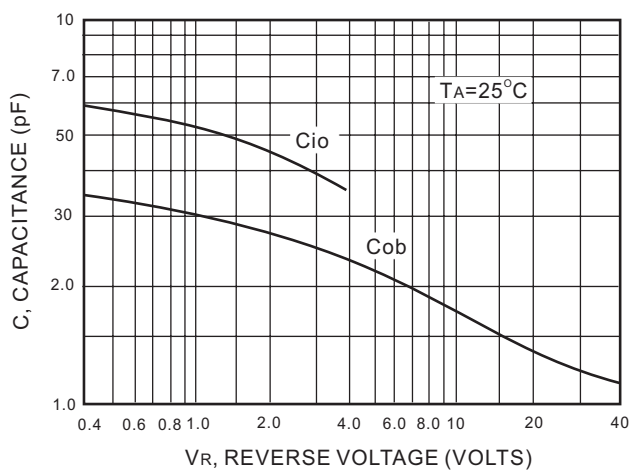


Figure 5. Capacitance

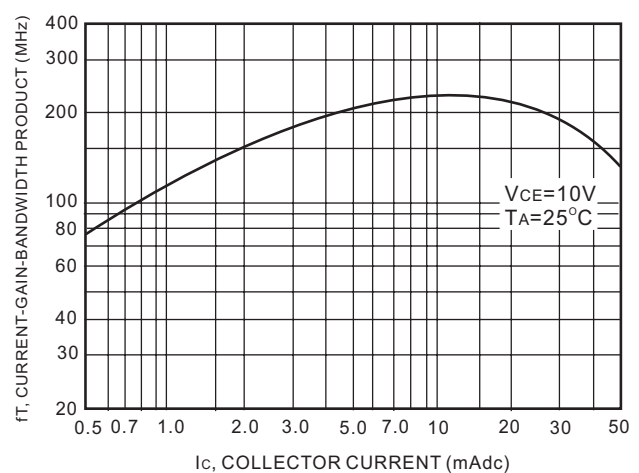
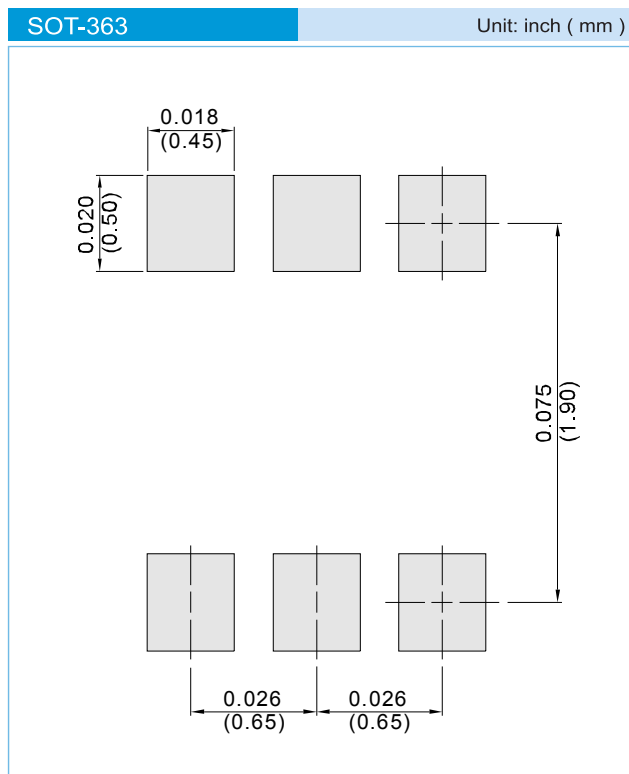


Figure 6. Current-Gain-Bandwidth Product

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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

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Part No_packing code_Version

BC857BS_R1_00001

BC857BS_R2_00001

For example :

RB500V-40 - **R2** - **00001**

Part No.

Serial number

Version code means HF

Packing size code means 13"

Packing type means T/R

Packing Code XX				Version Code XXXXX		
Packing type	1 st Code	Packing size code	2 nd Code	HF or RoHS	1 st Code	2 nd ~5 th Code
Tape and Ammunition Box (T/B)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			



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