

## PNP Transistors

## BC857S (KC857S)

## ■ Features

- High current gain
- Low collector-emitter saturation voltage
- For AF input stages and driver applications

■ Absolute Maximum Ratings  $T_a = 25^\circ\text{C}$ 

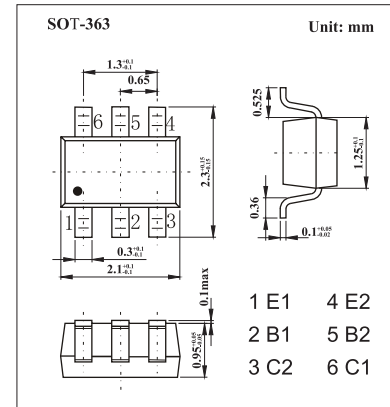
Parameter	Symbol	Rating	Unit
Collector - Base Voltage	$V_{CB0}$	-50	V
Collector - Emitter Voltage	$V_{CE0}$	-45	
	$V_{CES}$	-50	
Emitter - Base Voltage	$V_{EBO}$	-5	
Collector Current - Continuous	$I_C$	-200	mA
Collector Power Dissipation -Derate above $25^\circ\text{C}$	$P_C$	300	mW
		2.4	mW/ $^\circ\text{C}$
Thermal Resistance.Junction- to-Ambient	$R_{thJA}$	415	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to 150	

■ Electrical Characteristics  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	$V_{CB0}$	$I_C = -100 \mu\text{A}$ , $I_E = 0$	-50			V
Collector- emitter breakdown voltage	$V_{CE0}$	$I_C = -10 \text{mA}$ , $I_B = 0$	-45			
	$V_{CES}$	$I_C = -100 \mu\text{A}$ , $V_{BE} = 0$	-50			
Emitter - base breakdown voltage	$V_{EBO}$	$I_E = -100 \mu\text{A}$ , $I_C = 0$	-5			
Collector-base cut-off current	$I_{CBO}$	$V_{CB} = -30 \text{V}$ , $I_E = 0$			-15	nA
		$V_{CB} = -30 \text{V}$ , $I_E = 0$ , $T_a = 150^\circ\text{C}$			-4	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5\text{V}$ , $I_C = 0$			-100	nA
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -10 \text{mA}$ , $I_B = -0.5\text{mA}$			-0.3	V
		$I_C = -100\text{mA}$ , $I_B = -5\text{mA}$			-0.65	
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = -100 \text{mA}$ , $I_B = -5\text{mA}$			-1.2	
Base-emitter on voltage	$V_{BE(on)}$	$V_{CE} = -5\text{V}$ , $I_C = -2\text{mA}$	-0.6		-0.75	
		$V_{CE} = -5\text{V}$ , $I_C = -10\text{mA}$			-0.82	
DC current gain	$h_{FE}$	$V_{CE} = -5\text{V}$ , $I_C = -2\text{mA}$	125		630	
Noise Figure	NF	$I_C = -0.2 \text{mA}$ , $V_{CE} = -5\text{V}$ $R_S = 2 \text{k}\Omega$ , $f = 1 \text{kHz}$ , $BW = 200 \text{Hz}$		2.5		dB
Collector output capacitance	$C_{ob}$	$V_{CB} = -10\text{V}$ , $I_E = 0$ , $f = 1\text{MHz}$		3.5		pF
Transition frequency	$f_T$	$V_{CE} = -5\text{V}$ , $I_C = -10\text{mA}$ , $f = 100\text{MHz}$		200		MHz

## ■ Marking

Marking	3F
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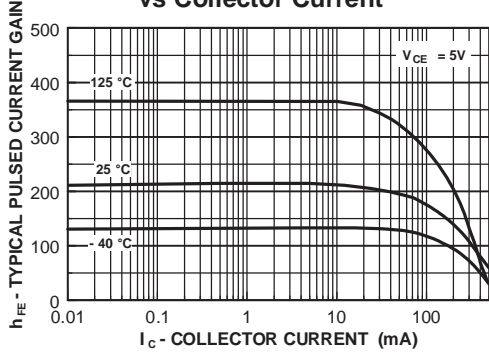


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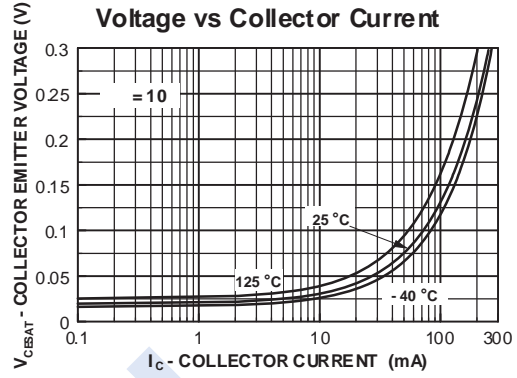
## BC857S (KC857S)

■ Typical Characteristics

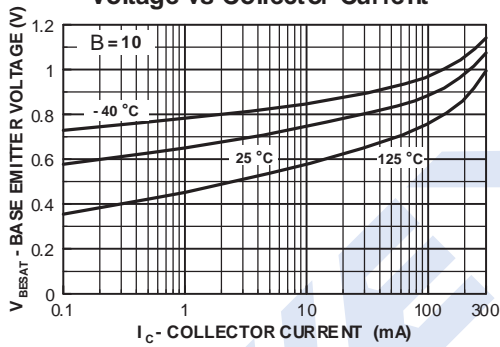
Typical Pulsed Current Gain vs Collector Current



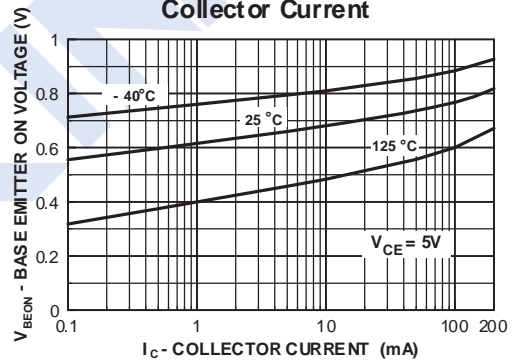
Collector-Emitter Saturation Voltage vs Collector Current



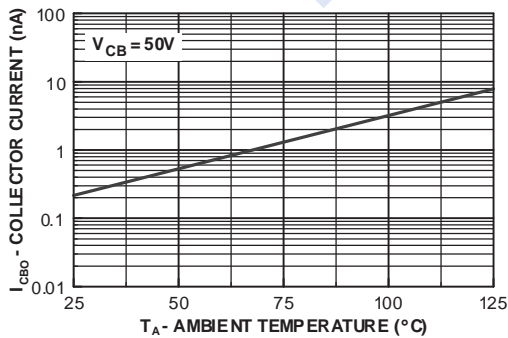
Base-Emitter Saturation Voltage vs Collector Current



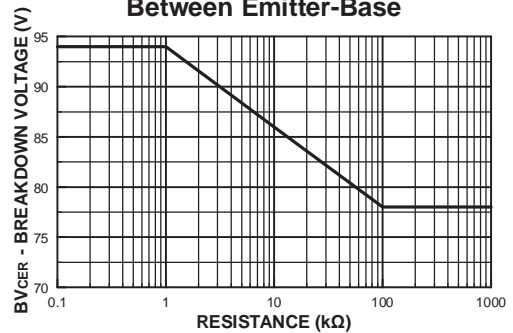
Base Emitter ON Voltage vs Collector Current



Collector-Cutoff Current vs Ambient Temperature



Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base



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■ Typical Characteristics

