

PNP Transistors

BC857S (KC857S)

■ Features

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

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

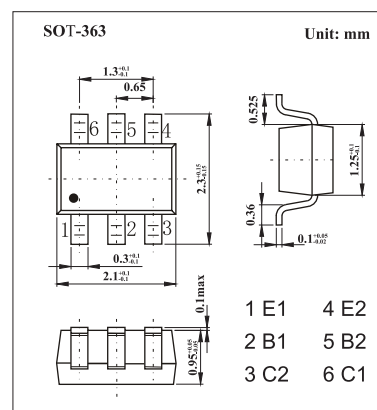
Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CB0}	-50	V
Collector - Emitter Voltage	V_{CE0}	-45	
	V_{CES}	-50	
Emitter - Base Voltage	V_{EB0}	-5	
Collector Current - Continuous	I_C	-200	mA
Collector Power Dissipation -Derate above 25°C	P_C	300	mW
		2.4	mW/ $^\circ\text{C}$
Thermal Resistance, 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_{EB0}	$I_E = -100\ \mu\text{A}$, $I_C = 0$	-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	μA
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

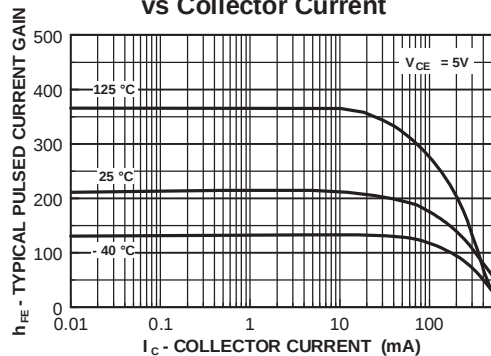
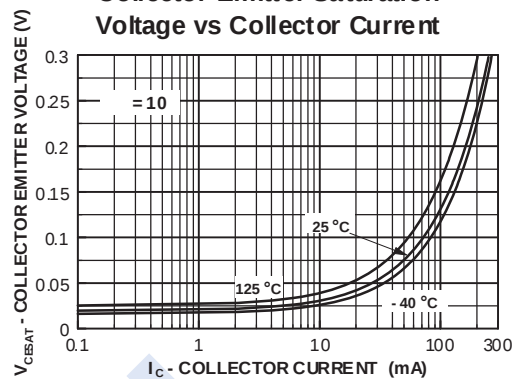
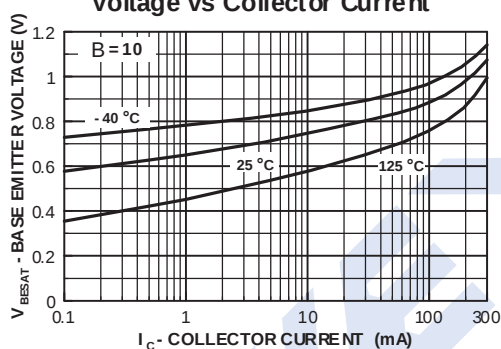
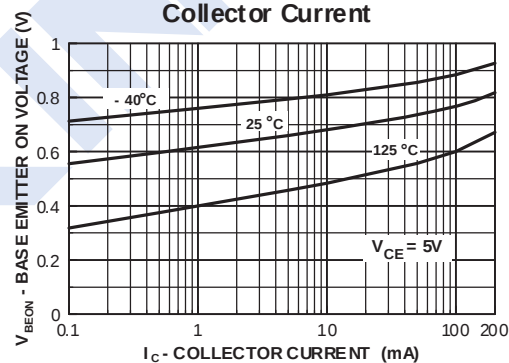
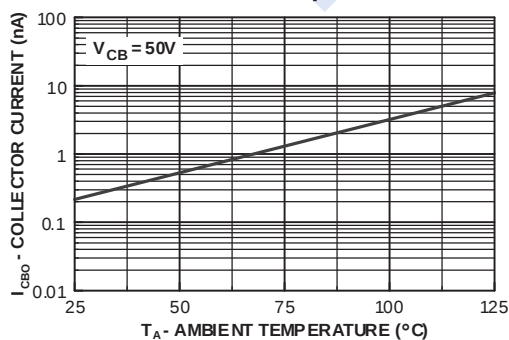
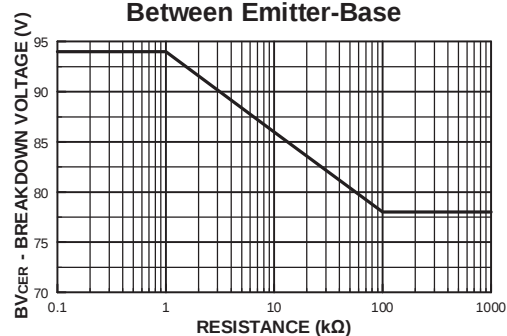
Marking	3F
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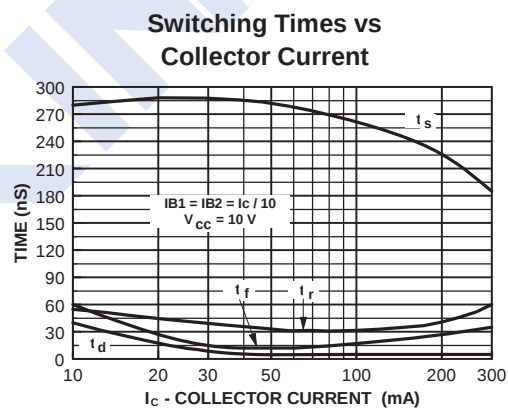
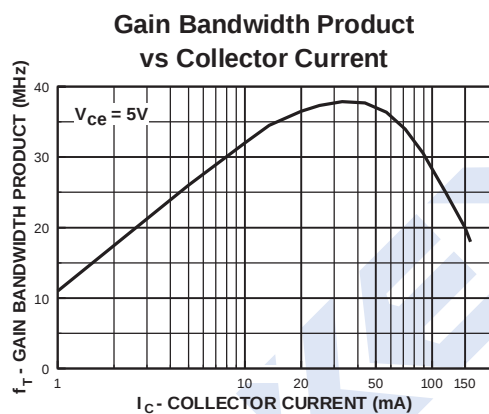
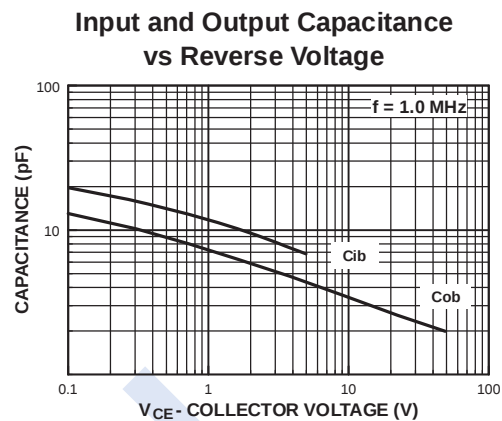
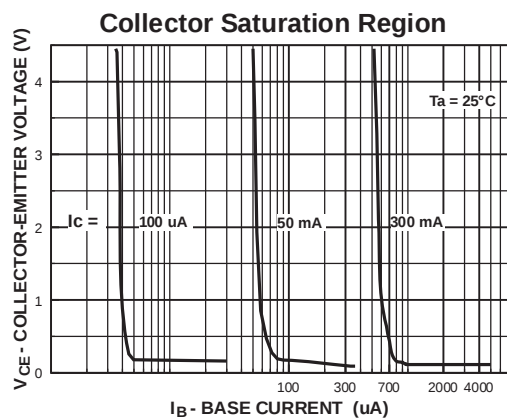
■ Typical Characteristics

Typical Pulsed Current Gain
vs Collector CurrentCollector-Emitter Saturation
Voltage vs Collector CurrentBase-Emitter Saturation
Voltage vs Collector CurrentBase Emitter ON Voltage vs
Collector CurrentCollector-Cutoff Current
vs Ambient TemperatureCollector-Emitter Breakdown
Voltage with Resistance
Between Emitter-Base

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■ Typical Characteristics



Power Dissipation vs Ambient Temperature

