

Transistors

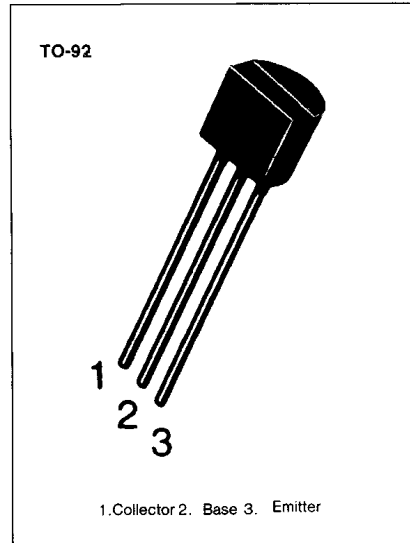
BC549

SWITCHING AND AF AMPLIFIER

- LOW NOISE: BC549,

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Rating	Unit
Collector Base Voltage	V_{CBO}	30	V
Collector Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current (DC)	I_C	100	mA
Collector Dissipation	P_C	500	mW
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	$-65 \sim 150$	$^\circ\text{C}$



ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

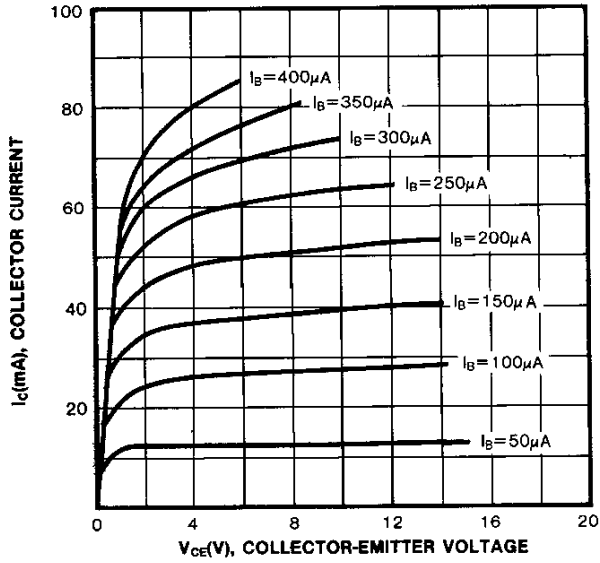
Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 30\text{V}, I_E = 0$			15	nA
DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}, I_C = 2\text{mA}$	110		800	
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$		90	250	mV
		$I_C = 100\text{mA}, I_B = 5\text{mA}$		200	600	mV
Collector Base Saturation Voltage	$V_{BE(sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$		700		mV
		$I_C = 100\text{mA}, I_B = 5\text{mA}$		900		mV
Base Emitter On Voltage	$V_{BE(on)}$	$V_{CE} = 5\text{V}, I_C = 2\text{mA}$	580	660	700	mV
		$V_{CE} = 5\text{V}, I_C = 10\text{mA}$			720	mV
Current Gain Bandwidth Product	f_T	$V_{CE} = 5\text{V}, I_C = 10\text{mA}, f = 100\text{MHz}$		300		MHz
Collector Base Capacitance	C_{CBO}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$		3.5	6	pF
Emitter Base Capacitance	C_{EBO}	$V_{EB} = 0.5\text{V}, f = 1\text{MHz}$		9		pF
Noise Figure	NF	$f = 1\text{KHz}, R_g = 2\text{kohm}, V_{CE} = 5\text{V}, I_C = 200\mu\text{A}$		1.2	4	dB
	NF	$f = 30 \sim 15000\text{Hz}$		1.4	4	dB

h_{FE} CLASSIFICATION

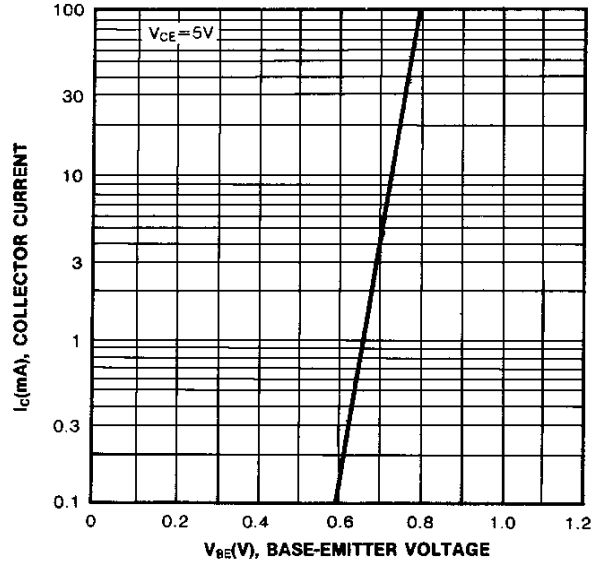
Classification	A	B	C
h_{FE}	110-220	200-450	420-800



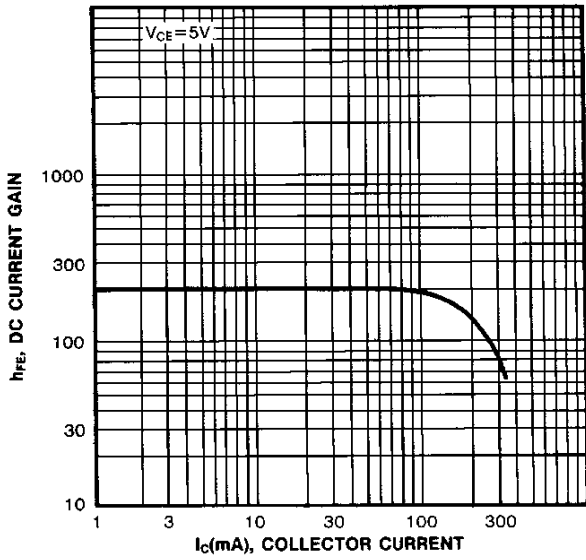
STATIC CHARACTERISTIC



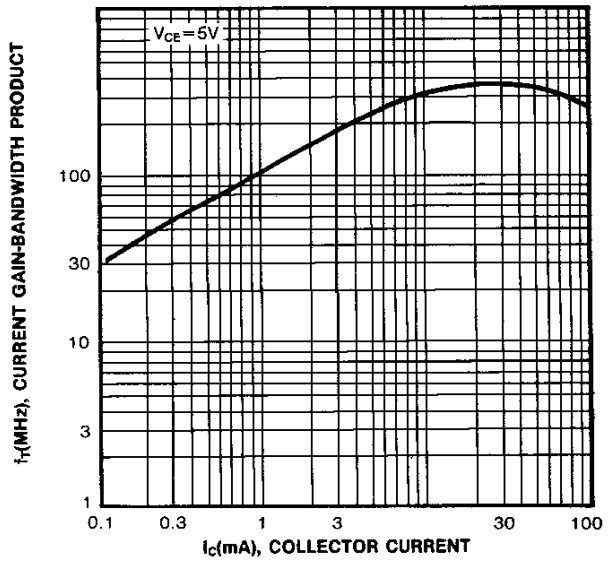
TRANSFER CHARACTERISTIC



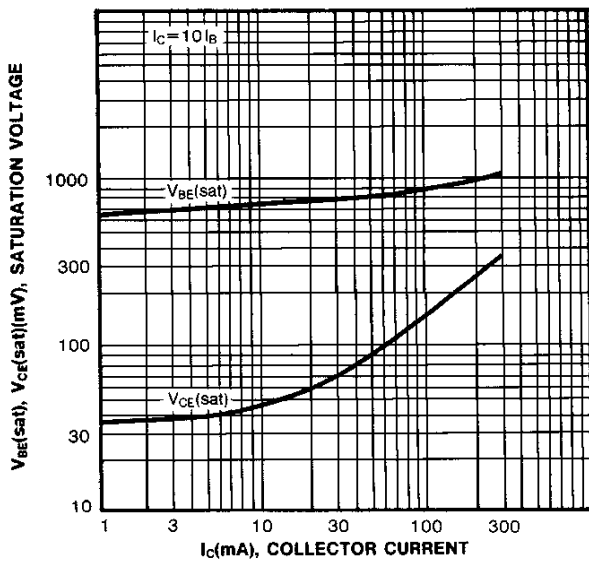
DC CURRENT GAIN



CURRENT GAIN BANDWIDTH PRODUCT



BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



OUTPUT CAPACITANCE

