

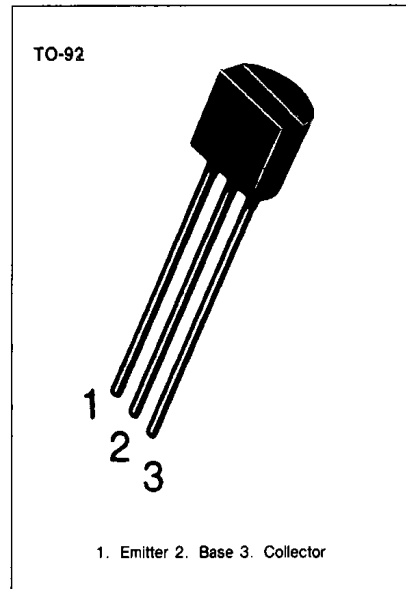
Transistors

2SA9015

LOW FREQUENCY, LOW NOISE AMPLIFIER

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-45	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-100	mA
Collector Dissipation	P_C	450	mW
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55~150	$^\circ\text{C}$



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

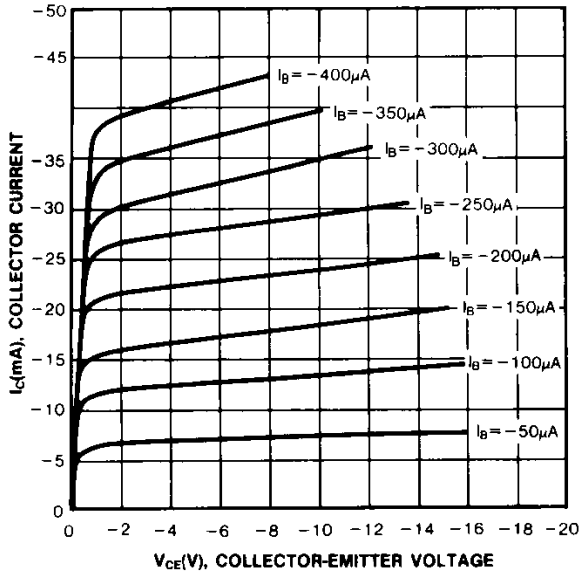
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C = -100\mu\text{A}, I_E = 0$	-50			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = -1\text{mA}, I_B = 0$	-45			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = -100\mu\text{A}, I_C = 0$	-5			V
Collector Cutoff Current	I_{CBO}	$V_{CB} = -50\text{V}, I_E = 0$			-50	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$			-50	nA
DC Current Gain	h_{FE}	$V_{CE} = -5\text{V}, I_C = -1\text{mA}$	60	200	600	
Collector-Base Saturation Voltage	$V_{CE(sat)}$	$I_C = -100\text{mA}, I_B = -5\text{mA}$		-0.2	-0.7	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -100\text{mA}, I_B = -5\text{mA}$		-0.82	-1.0	V
Base-Emitter On Voltage	$V_{BE(on)}$	$V_{CE} = -5\text{V}, I_C = -2\text{mA}$	-0.6	-0.65	-0.75	V
Output Capacitance	C_{ob}	$V_{CB} = -10\text{V}, I_E = 0$ $f = 1\text{MHz}$		4.5	7.0	pF
Current Gain-Bandwidth Product	f_T	$V_{CE} = -5\text{V}, I_C = -10\text{mA}$	100	190		MHz
Noise Figure	NF	$V_{CE} = -5\text{V}, I_C = -0.2\text{mA}$ $f = 1\text{KHz}, R_s = 1\text{K}\Omega$		0.7	10	dB

h_{FE} CLASSIFICATION

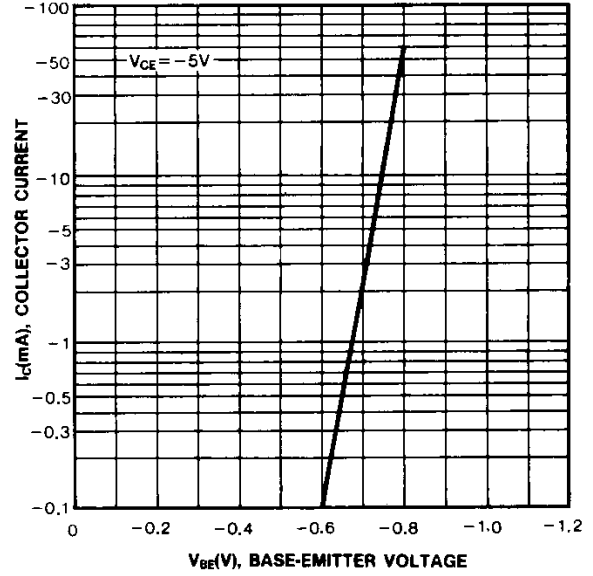
Classification	A	B	C
h_{FE}	60-150	100-300	200-600



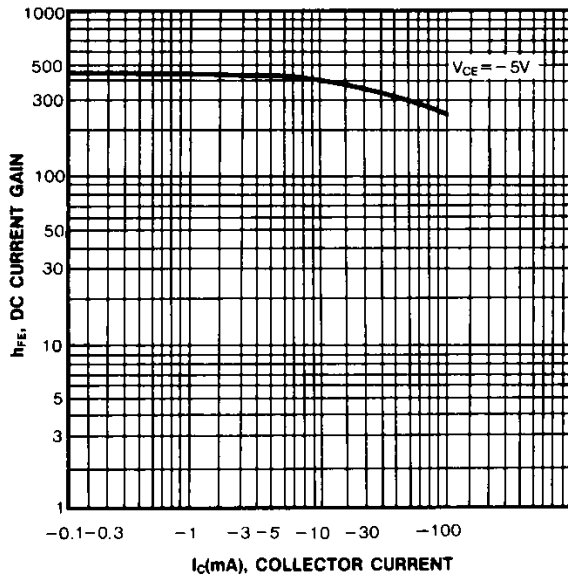
STATIC CHARACTERISTIC



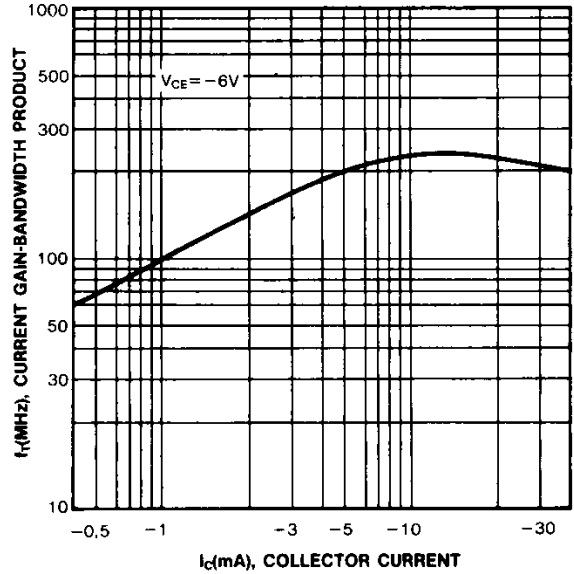
BASE-EMITTER ON VOLTAGE



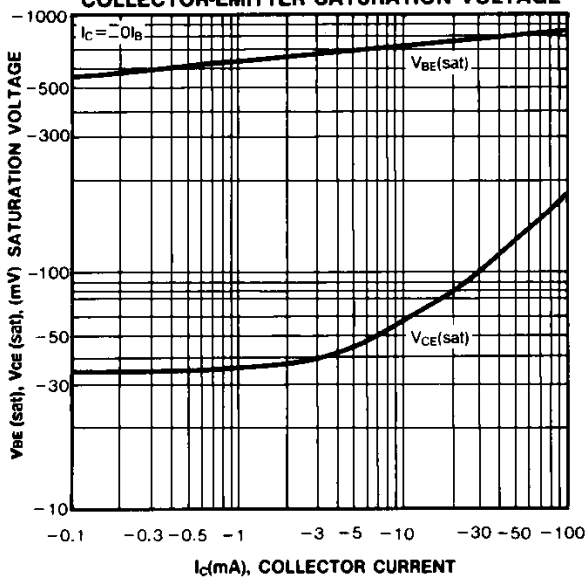
DC CURRENT GAIN



CURRENT GAIN-BANDWIDTH PRODUCT



BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



COLLECTOR OUTPUT CAPACITANCE

