

BC307/308/309

PNP EPITAXIAL SILICON TRANSISTOR

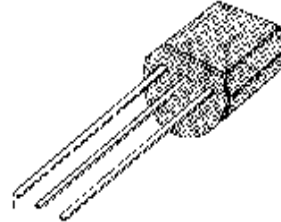
SWITCHING AND AMPLIFIER APPLICATIONS

- LOW NOISE: BC309

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

Characteristic	Symbol	Rating	Unit
Collector-Emitter Voltage : BC307	V_{CES}	-50	V
: BC308/309		-30	V
Collector-Emitter Voltage : BC307	V_{CEO}	-45	V
: BC308/309		-25	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}	-55 ~ 150	$^\circ\text{C}$

TO-92

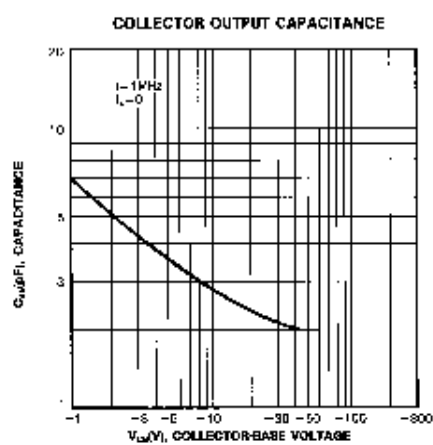
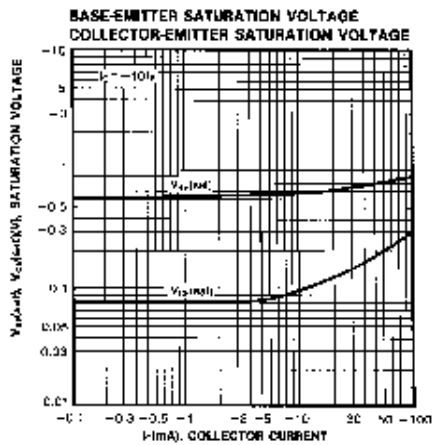
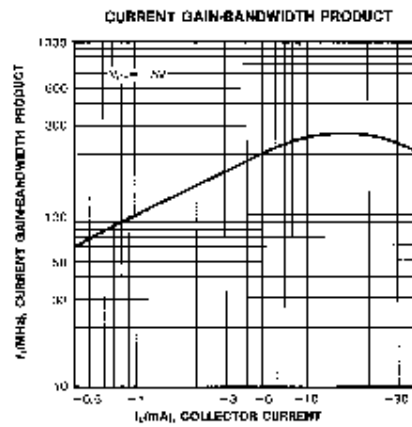
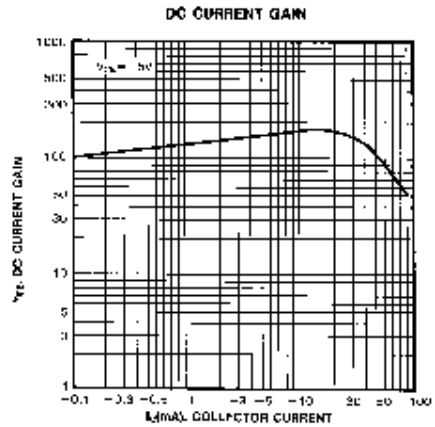
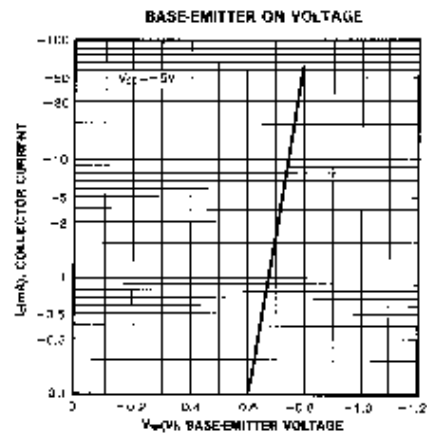
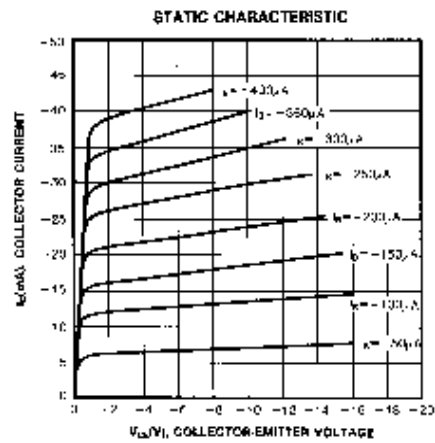


ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Emitter Breakdown Voltage : BC307	BV_{CEO}	$I_C = -2\text{mA}$, $I_B = 0$	-45			V
: BC308/309			-25			V
Collector Emitter Breakdown Voltage : BC307	BV_{CES}	$I_C = -10\mu\text{A}$, $I_B = 0$	-50			V
: BC308/309			-30			V
Emitter Base Breakdown Voltage	BV_{EBO}	$I_E = -10\mu\text{A}$, $I_B = 0$	-5			V
Collector Cut-off Current : BC307	I_{CES}	$V_{CE} = -45\text{V}$, $I_B = 0$		-2	-15	nA
: BC238/239		$V_{CE} = -25\text{V}$, $I_B = 0$		-2	-15	nA
DC Current Gain	h_{FE}	$V_{CE} = -5\text{V}$, $I_C = -2\text{mA}$	120		800	
Collector-Emitter Saturation Voltage	$V_{CE}(\text{sat})$	$I_C = -10\text{mA}$, $I_B = -0.5\text{mA}$			-0.3	V
		$I_C = -100\text{mA}$, $I_B = -5\text{mA}$		-0.5		V
Collector Base Saturation Voltage	$V_{BE}(\text{sat})$	$I_C = -10\text{mA}$, $I_B = -0.5\text{mA}$		-0.7		V
		$I_C = -100\text{mA}$, $I_B = -5\text{mA}$		-0.85		V
Base Emitter On Voltage	$V_{BE}(\text{on})$	$V_{CE} = -5\text{V}$, $I_C = -2\text{mA}$	-0.55	-0.62	-0.7	V
Current Gain Bandwidth Product	f_T	$V_{CE} = -5\text{V}$, $I_C = -10\text{mA}$		130		MHz
Collector Base Capacitance	C_{CBO}	$V_{CB} = -10\text{V}$, $f = 1\text{MHz}$			6	pF
Emitter Base Capacitance	C_{EBO}	$V_{EB} = -0.5\text{V}$, $f = 1\text{MHz}$		12		pF
Noise Figure : BC237/238	NF	$V_{CE} = -5\text{V}$, $I_C = -0.2\text{mA}$, $R_G = 2\text{K}\Omega$, $f = 1\text{KHz}$			10	dB
: BC239					4	dB
: BC239	NF	$V_{CE} = -5\text{V}$, $I_C = -0.2\text{mA}$, $R_G = 2\text{K}\Omega$, $f = 30\sim 15\text{KHz}$		2	4	dB

h_{FE} CLASSIFICATION

Classification	A	B	C
h_{FE}	120-220	180-460	380-800



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