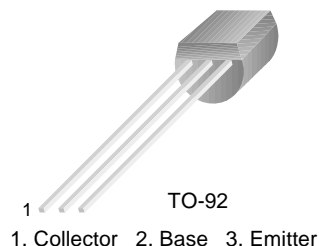


BC307/308/309

Switching and Amplifier Applications

- Low Noise: BC309



PNP Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CES}	Collector-Emitter Voltage : BC307	-50	V
	: BC308/309	-30	V
V_{CEO}	Collector-Emitter Voltage : BC307	-45	V
	: BC308/309	-25	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current (DC)	-100	mA
P_C	Collector Dissipation	500	mW
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

Electrical Characteristics $T_a=25^{\circ}\text{C}$ unless otherwise noted

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

 h_{FE} Classification

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

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