

PN4946
NPN GENERAL PURPOSE TRANSISTORS

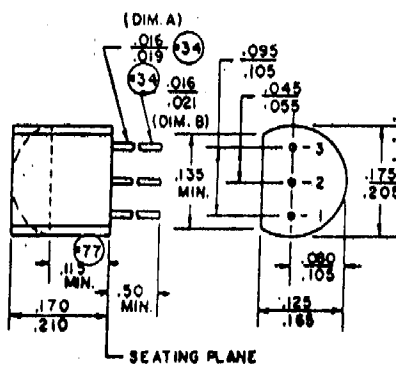
ELECTRICAL CHARACTERISTICS (25°C Free Air Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
h_{FE}	DC Pulse Current Gain (Note 5)	100	150	300		$I_C = 150 \text{ mA}$ $V_{CE} = 1.0 \text{ V}$
h_{FE}	DC Pulse Current Gain (Note 5)	100				$I_C = 30 \text{ mA}$ $V_{CE} = 1.0 \text{ V}$
$V_{CE(sat)}$	Pulsed Collector Saturation Voltage (Note 5)		0.10	0.25	Volts	$I_C = 150 \text{ mA}$ $I_B = 15 \text{ mA}$
$V_{BE(sat)}$	Pulsed Base Saturation Voltage (Note 5)		0.85	1.1	Volts	$I_C = 150 \text{ mA}$ $I_B = 15 \text{ mA}$
h_{FE}	High Frequency Current Gain ($f = 20 \text{ MHz}$)	3.0		15		$I_C = 50 \text{ mA}$ $V_{CE} = 10 \text{ V}$
C_{obe}	Common Base, Open Circuit Output Capacitance (2N4944 only)		16	25	pF	$I_E = 0$ $V_{CE} = 10 \text{ V}$
C_{obe}	Common Base, Open Circuit Output Capacitance (2N4945 only)				pF	$I_E = 0$ $V_{CE} = 10 \text{ V}$
C_{ibe}	Common Base, Open Circuit Input Capacitance		63	80	pF	$I_C = 0$ $V_{EB} = 0.5 \text{ V}$
I_{C10}	Collector Cutoff Current			50	nA	$I_E = 0$ $V_{CE} = 40 \text{ V}$
$I_{C10}(75^\circ\text{C})$	Collector Cutoff Current			5.0	μA	$I_E = 0$ $V_{CE} = 40 \text{ V}$
I_{E10}	Emitter Cutoff Current			25	nA	$I_C = 0$ $V_{EB} = 4.0 \text{ V}$
BV_{C10}	Collector to Base Breakdown Voltage	80			Volts	$I_C = 100 \mu\text{A}$ $I_E = 0$
$V_{CE0(sust)}$	Collector to Emitter Sustaining Voltage (Notes 4 and 5) (2N4944 only)	40			Volts	$I_C = 30 \text{ mA}$ $I_E = 0$ (pulsed)
$V_{CE0(sust)}$	Collector to Emitter Sustaining Voltage (Notes 4 and 5) (2N4945 only)				Volts	$I_C = 30 \text{ mA}$ $I_B = 0$
BV_{E10}	Emitter to Base Breakdown Voltage	5.0			Volts	$I_C = 0$ $I_E = 10 \mu\text{A}$

SMALL SIGNAL CHARACTERISTICS ($f = 1.0 \text{ kHz}$)

SYMBOL	CHARACTERISTIC	TYP.	TYP.	UNITS	TEST CONDITIONS
h_{ie}	Input Resistance	1800	3800	ohms	$I_C = 1.0 \text{ mA}$ $V_{CE} = 5.0 \text{ V}$
h_{oe}	Output Conductance	8.0	19.2	μmhos	$I_C = 1.0 \text{ mA}$ $V_{CE} = 5.0 \text{ V}$
h_{re}	Voltage Feedback Ratio	2.1	5.6	$\times 10^{-4}$	$I_C = 1.0 \text{ mA}$ $V_{CE} = 5.0 \text{ V}$
h_{fe}	Small Signal Current Gain	60	130		$I_C = 1.0 \text{ mA}$ $V_{CE} = 5.0 \text{ V}$

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