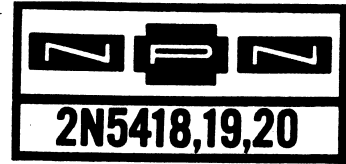
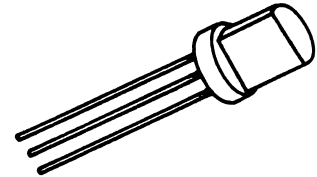


Silicon Transistors

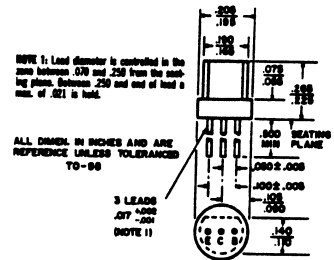


This series of transistors are NPN silicon, planar, epitaxial, passivated devices. These units feature low collector saturation voltage, good current gain linearity over a wide collector current range, high gain-bandwidth product, and low noise. These characteristics make these units excellent for use in general purpose consumer and industrial amplifier and switching applications.



Absolute maximum ratings: (25°C) (unless otherwise specified)

Parameter	Symbol	Value	Units
Collector to Emitter Voltage	V_{CE0}	25	Volts
Emitter to Base Voltage	V_{EB0}	4	Volts
Collector to Base Voltage	V_{CB0}	25	Volts
Collector Current (Continuous)	I_C	500	mA
Total Power (Free Air at 25°C)*	P_T	400	mW
Storage Temperature	T_{stg}	-65 to +150	°C
Operating Temperature	T_j	+125	°C
Lead temperature, $1/16" \pm 1/32"$ from case for ten seconds maximum	T_L	+260	°C



*Rate 4.0 mW/°C increase in ambient temperature above 25°C.

Electrical characteristics: (25°C) (unless otherwise specified)

Parameter	Symbol	Min.	Max.
STATIC CHARACTERISTICS			
Collector Cutoff Current ($V_{CE} = 25V$)	I_{CBO}		100 nA
Collector Cutoff Current ($V_{CE} = 25V, T_A = 100°C$)	I_{CBO}		10 μ A
Emitter Cutoff Current ($V_{EB} = 5V$)	I_{EBO}		100 nA
Forward Current Transfer Ratio ($V_{CE} = 10V, I_C = 2 mA$)	h_{FE}	25	
($V_{CE} = 1V, I_C = 50 mA$)	h_{FE}	40	120
($V_{CE} = 5V, I_C = 300 mA$)	h_{FE}	20	
($V_{CE} = 10V, I_C = 2 mA$)	h_{FE}	70	
($V_{CE} = 1V, I_C = 50 mA$)	h_{FE}	100	300
($V_{CE} = 5V, I_C = 300 mA$)	h_{FE}	40	
($V_{CE} = 10V, I_C = 2 mA$)	h_{FE}	150	
($V_{CE} = 1V, I_C = 50 mA$)	h_{FE}	250	500
($V_{CE} = 5V, I_C = 300 mA$)	h_{FE}	75	
Reverse Emitter Breakdown Voltage ($I_E = 10 mA$)	$V_{(BR) EBO}$	25	Volts
Collector Saturation Voltage ($I_C = 50 mA, I_B = 2.5 mA$)	$V_{CE(SAT)}$.250 Volts
($I_C = 300 mA, I_B = 30 mA$)	$V_{CE(SAT)}$		1.0 Volts
Base Saturation Voltage ($I_C = 50 mA, I_B = 2.5 mA$)	$V_{BE(SAT)}$		1.1 Volts
($I_C = 300 mA, I_B = 30 mA$)	$V_{BE(SAT)}$		2.0 Volts

2N5418,19,20

Base Emitter Voltage

($V_{CE} = 10V, I_C = 2 \text{ mA}$)

V_{BE}

Min.

Typ.

Max.

0.5

0.8

Volts

DYNAMIC CHARACTERISTICS

Forward Current Transfer Ratio

($V_{CE} = 10V, I_C = 2 \text{ mA}, f = 1 \text{ kHz}$)

2N5418

h_{fe}

25

150

($V_{CE} = 10V, I_C = 2 \text{ mA}, f = 1 \text{ kHz}$)

2N5419

h_{fe}

70

400

($V_{CE} = 10V, I_C = 2 \text{ mA}, f = 1 \text{ kHz}$)

2N5420

h_{fe}

150

650

Output Capacitance, Common Base

($V_{CB} = 10V, I_E = 0, f = 1 \text{ MHz}$)

C_{cb}

4

6

pF

Input Capacitance, Common Base

($V_{EB} = 0.5V, I_C = 0, f = 1 \text{ MHz}$)

C_{cb}

35

pF

Gain Bandwidth Product

($V_{CE} = 10V, I_C = 2 \text{ mA}$)

f_T

250

MHz