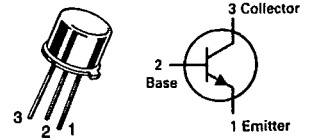


**MAXIMUM RATINGS**

Rating	Symbol	Value	Unit
Collector-Emitter Voltage(1)	$V_{CEO}$	150	Vdc
Collector-Base Voltage	$V_{CBO}$	150	Vdc
Emitter-Base Voltage	$V_{EBO}$	5.0	Vdc
Collector Current — Continuous	$I_C$	200	mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	0.8 4.57	Watt mW/°C
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	5.0 28.6	Watts mW/°C
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +200	°C

**AMPLIFIER TRANSISTOR**

NPN SILICON

Refer to 2N3498 for graphs.

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted.)

Characteristic	Symbol	Min	Max	Unit
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**OFF CHARACTERISTICS**

Collector-Emitter Breakdown Voltage(2) ( $I_C = 30 \text{ mAdc}, I_B = 0$ )	$V_{(BR)CEO}$	150	—	Vdc
Collector-Base Breakdown Voltage ( $I_C = 100 \mu\text{Adc}, I_E = 0$ )	$V_{(BR)CBO}$	150	—	Vdc
Emitter-Base Breakdown Voltage ( $I_E = 100 \mu\text{Adc}, I_C = 0$ )	$V_{(BR)EBO}$	5.0	—	Vdc
Collector Cutoff Current ( $V_{CB} = 100 \text{ Vdc}, I_E = 0$ ) ( $V_{CB} = 100 \text{ Vdc}, I_E = 0, T_A = 150^\circ\text{C}$ )	$I_{CBO}$	— —	0.010 10	$\mu\text{Adc}$
Emitter Cutoff Current ( $V_{EB} = 4.0 \text{ Vdc}, I_C = 0$ )	$I_{EBO}$	—	0.10	$\mu\text{Adc}$

**ON CHARACTERISTICS**

DC Current Gain(2) ( $I_C = 0.1 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ ) ( $I_C = 30 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ ) ( $I_C = 30 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, T_A = -55^\circ\text{C}$ )	$h_{FE}$	15 30 12	— 120 —	—
Collector-Emitter Saturation Voltage(2) ( $I_C = 50 \text{ mAdc}, I_B = 5.0 \text{ mAdc}$ )	$V_{CE(sat)}$	—	1.0	Vdc
Base-Emitter Saturation Voltage(2) ( $I_C = 50 \text{ mAdc}, I_B = 5.0 \text{ mAdc}$ )	$V_{BE(sat)}$	—	0.9	Vdc

**SMALL-SIGNAL CHARACTERISTICS**

Output Capacitance ( $V_{CB} = 20 \text{ Vdc}, I_E = 0, f = 140 \text{ kHz}$ )	$C_{obo}$	—	9.0	pF
Input Capacitance ( $V_{EB} = 0.5 \text{ Vdc}, I_C = 0, f = 140 \text{ kHz}$ )	$C_{ibo}$	—	80	pF
Small-Signal Current Gain ( $I_C = 1.0 \text{ mA}, V_{CE} = 5.0 \text{ V}, f = 1 \text{ kHz}$ )	$h_{fe}$	25	—	—
Current Gain — High Frequency ( $V_{CE} = 10 \text{ Vdc}, I_C = 30 \text{ mAdc}, f = 20 \text{ MHz}$ )	$ h_{fe} $	2.0	—	—
Real Part of Input Impedance ( $I_C = 10 \text{ mA}, V_{CE} = 10 \text{ V}, f = 100 \text{ MHz}$ )	$\text{Re}(h_{ie})$	—	30	Ohms

(1) Between 0 and 30 mA.

(2) Pulse Test: Pulse Width  $\leq 300 \mu\text{s}$ , Duty Cycle  $\leq 1.0\%$ .