

2N3494
2N3495
CASE 31-03, STYLE 1
TO-39 (TO-205AD)

2N3496
2N3497
CASE 22-03, STYLE 1
TO-18 (TO-206AA)

**GENERAL PURPOSE
TRANSISTOR**

PNP SILICON

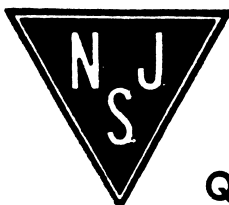
MAXIMUM RATINGS

Rating	Symbol	2N3494	2N3495	Unit
		2N3496	2N3497	
Collector-Emitter Voltage	V _{CEO}	80	120	V _{dc}
Collector-Base Voltage	V _{CBO}	80	120	V _{dc}
Emitter-Base Voltage	V _{EBO}	4.5		V _{dc}
Collector Current — Continuous	I _C	100		mAdc
		2N3494	2N3496	
		2N3495	2N3497	
Total Device Dissipation (at T _A = 25°C Derate above 25°C)	P _D	600 3.43	400 2.28	mW mW/°C
Total Device Dissipation (at T _C = 25°C* Derate above 25°C)	P _D	3.0 17.2	1.2 6.85	Watts mW/°C
Operating and Storage Junction Temperature Range	T _J , T _{stg}	- 65 to +200		°C

*Indicates Data in addition to JEDEC Requirements.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage(1) (I _C = 10 mAdc, I _B = 0)	V _{(BR)CEO}	80 120	— —	V _{dc}
Collector-Base Breakdown Voltage (I _C = 10 μAdc, I _E = 0)	V _{(BR)CBO}	80 120	— —	V _{dc}
Emitter-Base Breakdown Voltage (I _E = 10 μAdc, I _C = 0)	V _{(BR)EBO}	4.5	—	V _{dc}
Collector Cutoff Current (V _{CB} = 50 Vdc, I _E = 0) (V _{CB} = 90 Vdc, I _E = 0)	I _{CBO}	— —	100 100	nAdc
Emitter Cutoff Current (V _{BE} = 3.0 Vdc, I _C = 0)	I _{EBO}	—	25	nAdc
ON CHARACTERISTICS				
DC Current Gain(1) (I _C = 100 μAdc, V _{CE} = 10 Vdc) (I _C = 1.0 mAdc, V _{CE} = 10 Vdc) (I _C = 10 mAdc, V _{CE} = 10 Vdc) (I _C = 50 mAdc, V _{CE} = 10 Vdc) (I _C = 100 mAdc, V _{CE} = 10 Vdc)	h _{FE}	35 40 40 40 35	— — — — —	—
Collector-Emitter Saturation Voltage (I _C = 10 mAdc, I _B = 1.0 mAdc)	V _{CE(sat)}	— —	0.3 0.35	V _{dc}
Base-Emitter Saturation Voltage (I _C = 10 mAdc, I _B = 1.0 mAdc)	V _{BE(sat)}	0.6	0.9	V _{dc}
SMALL-SIGNAL CHARACTERISTICS				
Current-Gain — Bandwidth Product(2) (I _C = 20 mAdc, V _{CE} = 10 Vdc, f = 100 MHz)	f _T	200 150	— —	MHz
Output Capacitance (V _{CB} = 10 Vdc, I _E = 0, f = 100 kHz)	C _{obo}	— —	7.0 6.0	pF
Input Capacitance (V _{BE} = 2.0 Vdc, I _C = 0, f = 100 kHz)	C _{ibo}	—	30	pF



2N3494, 2N3495, 2N3496, 2N3497

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

Characteristic	Symbol	Min	Max	Unit
Input Impedance ($I_C = 10 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 1.0 \text{ kHz}$)	h_{ie}	0.1	1.2	k ohms
Voltage Feedback Ratio ($I_C = 10 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 1.0 \text{ kHz}$)	h_{re}	—	2.0	$\times 10^{-4}$
Small-Signal Current Gain ($I_C = 10 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 1.0 \text{ kHz}$)	h_{fe}	40	300	—
Output Admittance ($I_C = 10 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 1.0 \text{ kHz}$)	h_{oe}	—	300	μhos
Real Part of Input Impedance ($I_C = 20 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 300 \text{ MHz}$)	$\text{Re}(h_{ie})$	—	30	Ohms

SWITCHING CHARACTERISTICS

Turn-On Time ($V_{CC} = 30 \text{ Vdc}$, $I_C = 10 \text{ mAdc}$, $I_{B1} = 1.0 \text{ mAdc}$)	t_{on}	—	300	ns
Turn-Off Time ($V_{CC} = 30 \text{ Vdc}$, $I_C = 10 \text{ mAdc}$, $I_{B1} = I_{B2} = 1.0 \text{ mAdc}$)	t_{off}	—	1000	ns

- (1) Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle = 2.0%.
 (2) f_T is defined as the frequency at which $|h_{fe}|$ extrapolates to unity.

FIGURE 1 – TURN-ON TIME TEST CIRCUIT

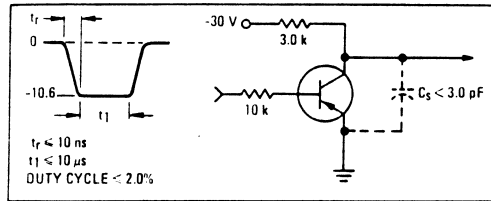


FIGURE 2 – TURN-OFF TIME TEST CIRCUIT

