



NES

NEW ENGLAND SEMICONDUCTOR

2N3494
thru
2N3497

PNP SILICON ANNULAR STAR TRANSISTORS

...designed for high-voltage switching circuits and DC to VHF amplifier applications.

- HIGH COLLECTOR-EMITTER BREAKDOWN VOLTAGE
- LOW COLLECTOR-EMITTER SATURATION VOLTAGE
- HIGH CURRENT-GAIN—BANDWIDTH PRODUCT

PNP SILICON HIGH-VOLTAGE TRANSISTORS



TO - 18
2N3496
2N3497



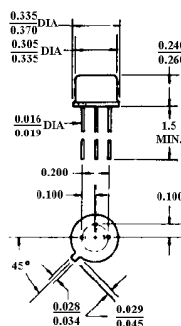
TO - 5
2N3494
2N3495

MAXIMUM RATINGS

RATINGS	SYMBOL	2N3494 2N3496	2N3495 2N3497	UNITS
Collector-Emitter Voltage	V_{CEO}	80	120	Vdc
Collector-Base Voltage	V_{CBO}	80	120	Vdc
Emitter-Base Voltage	V_{EBO}	4.5		Vdc
Collector Current -- Continuous	I_C	100		mA dc
		2N3494 2N3496	2N3495 2N3497	
Total Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	600 3.43	400 2.28	mW mW/ $^\circ\text{C}$
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	2.0 11.4	1.2 6.85	W mW/ $^\circ\text{C}$
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		$^\circ\text{C}$

MECHANICAL OUTLINE

2N3494
2N3495

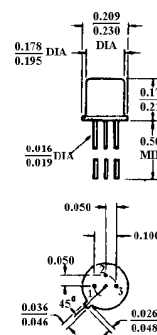


PIN 1. Emitter
PIN 2. Base
PIN 3. Collector

TO - 5

MECHANICAL OUTLINE

2N3496
2N3497



PIN 1. Emitter
PIN 2. Base 1
PIN 3. Collector

TO - 18

NEW ENGLAND SEMICONDUCTOR

6 Lake Street Lawrence, MA 01841
1-800-446-1158 / (978) 794-1666 / FAX: (978) 689-0803

T4-4.8-860-358 REV: --



NES
NEW ENGLAND SEMICONDUCTOR

**2N3494
thru
2N3497**

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

Characteristics	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage(1) $I_C = 10 \text{ mAdc}, I_B = 0$ 2N3494, 2N3496 2N3495, 2N3497	$V_{(BR)CEO}$	80 120		Vdc
Collector-Base Breakdown Voltage $I_C = 10 \text{ } \mu\text{Adc}, I_E = 0$ 2N3494, 2N3496 2N3495, 2N3497	$V_{(BR)CBO}$	80 120		Vdc
Emitter-Base Breakdown Voltage $I_E = 10 \text{ } \mu\text{Adc}, I_C = 0$	$V_{(BR)EBO}$	4.5		Vdc
Collector Cutoff Current $V_{CB} = 50 \text{ Vdc}, I_E = 0$ $V_{CB} = 90 \text{ Vdc}, I_E = 0$ 2N3494, 2N3496 2N3495, 2N3497	I_{CBO}		100 100	ηAdc
Emitter Cutoff Current $V_{BE} = 3.0 \text{ Vdc}, I_C = 0$	I_{EBO}		25	ηAdc
ON CHARACTERISTICS				
DC Current Gain (1) $I_C = 100 \text{ } \mu\text{Adc}, V_{CE} = 10 \text{ Vdc}$ All Types $I_C = 1.0 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ All Types $I_C = 10 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ All Types $I_C = 50 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ All Types $I_C = 100 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ 2N3494, 2N3496	h_{FE}	35 40 40 40 35		
Collector-Emitter Saturation Voltage $I_C = 10 \text{ mAdc}, I_B = 1.0 \text{ mAdc}$ 2N3494, 2N3496 2N3495, 2N3497	$V_{CE(sat)}$		0.3 0.35	Vdc
Base-Emitter Saturation Voltage $I_C = 10 \text{ mAdc}, I_B = 1.0 \text{ mAdc}$	$V_{BE(sat)}$	0.6	0.9	Vdc
SMALL-SIGNAL CHARACTERISTICS				
Small-Signal Current Gain $V_{CE} = 10 \text{ Vdc}, I_C = 10 \text{ mAdc}, f = 1.0 \text{ kHz}$	$ h_{fe} $	40	300	
Current-Gain—Bandwidth Product (2) $I_C = 20 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, f = 100 \text{ MHz}$ 2N3494, 2N3496 2N3495, 2N3497	f_T	250 150		MHz
Output Capacitance $V_{CB} = 10 \text{ Vdc}, I_E = 0, f = 100 \text{ kHz}$ 2N3494, 2N3496 2N3495, 2N3497	C_{obo}		7.0 6.0	p^f
Input Capacitance $V_{BE} = 2.0 \text{ Vdc}, I_C = 0, f = 100 \text{ kHz}$	C_{ibo}		30	p^f
SWITCHING CHARACTERISTICS				
Turn-On Time $V_{CC} = 30 \text{ Vdc}, I_C = 10 \text{ mAdc}, I_{B1} = 10 \text{ mAdc}$	t_{on}		300	ηs
Turn-Off Time $V_{CC} = 30 \text{ Vdc}, I_C = 10 \text{ mAdc}, I_{B1} = I_{B2} = 1.0 \text{ mAdc}$	t_{off}		1000	ηs

(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

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