NEW ENGLAND SEMICONDUCTOR

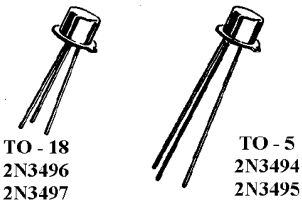
2N3494 thru 2N3497

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

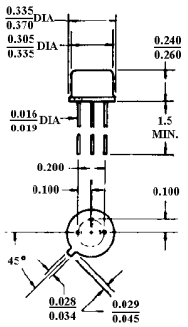
TO - 5
2N3494
2N3495

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		mAdc
		2N3494 2N3496	**2N3495 2N3497**	
Total Power Dissipation @ $T_A = 25^0C$ Derate above 25^0C	P_D	600 3.43	400 2.28	mW $mW/^0C$
Total Power Dissipation @ $T_C = 25^0C$ Derate above 25^0C	P_D	2.0 11.4	1.2 6.85	W $mW/^0C$
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		^0C

MECHANICAL OUTLINE

2N3494
2N3495

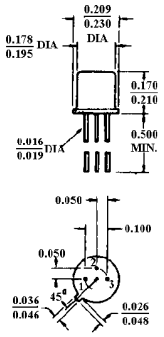


PIN 1. Emitter
PIN 2. Base
PIN 3. Collector

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

NEW ENGLAND SEMICONDUCTOR

2N3494 thru 2N3497

ELECTRICAL CHARACTERISTICS ($T_A = 25^0$C unless otherwise noted)

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

(1)Pulse Test: Pulse Width ≤ 300μs, Duty Cycle = 2.0%.

(2)f_T is definee as the frequency at which $\lvert h_{fe} \rvert$ extrapolates to unity

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