

**2N2895  
2N2896  
2N2897**

**CASE 22, STYLE 1  
TO-18 (TO-206AA)**

**GENERAL PURPOSE  
TRANSISTOR**

**NPN SILICON**

**MAXIMUM RATINGS**

Rating	Symbol	2N2895	2N2896	2N2897	Unit
Collector-Emitter Voltage	$V_{CEO}$	65	90	45	Vdc
Collector-Emitter Voltage	$V_{CER}$	80	140	60	Vdc
Collector-Base Voltage	$V_{CBO}$	120	140	60	Vdc
Emitter-Base Voltage	$V_{EBO}$	7.0			Vdc
Collector Current — Continuous	$I_C$	1.0			Adc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	0.5 2.86			Watt mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	1.8 10.3			Watts mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +200			$^\circ\text{C}$

**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(1) ( $I_C = 100 \text{ mAdc}, R_{BE} = 10 \text{ ohms}$ )	2N2895 2N2896 2N2897	$V_{(BR)ICER}$	80 140 60	— — —	Vdc
Collector-Emitter Sustaining Voltage(1) ( $I_C = 100 \text{ mAdc}, I_B = 0$ )	2N2895 2N2896 2N2897	$V_{CEO(sus)}$	65 90 45	— — —	Vdc
Collector-Base Breakdown Voltage ( $I_C = 0.1 \text{ mAdc}, I_E = 0$ )	2N2895 2N2896 2N2897	$V_{(BR)CBO}$	120 140 60	— — —	Vdc
Emitter-Base Breakdown Voltage ( $I_E = 0.1 \text{ mAdc}, I_C = 0$ )		$V_{(BR)EBO}$	7.0	—	Vdc
Collector Cutoff Current ( $V_{CB} = 60 \text{ Vdc}, I_C = 0$ )	2N2895 2N2896 2N2897	$I_{CBO}$	— — —	0.002 0.01 0.05	$\mu\text{Adc}$
( $V_{CB} = 60 \text{ Vdc}, I_E = 0, T_A = +150^\circ\text{C}$ )	2N2895 2N2897		— —	2.0 50	
( $V_{CB} = 90 \text{ Vdc}, I_E = 0$ ) ( $V_{CB} = 90 \text{ Vdc}, I_E = 0, T_A = +150^\circ\text{C}$ )	2N2896 2N2896		— —	0.01 10	
Emitter Cutoff Current ( $V_{BE} = 5.0 \text{ Vdc}, I_C = 0$ )	2N2895 2N2896 2N2897	$I_{EBO}$	— — —	0.005 0.01 0.05	$\mu\text{Adc}$

**ON CHARACTERISTICS**

DC Current Gain ( $I_C = 10 \mu\text{Adc}, V_{CE} = 10 \text{ Vdc}$ ) ( $I_C = 100 \mu\text{Adc}, V_{CE} = 10 \text{ Vdc}$ ) ( $I_C = 1.0 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ ) ( $I_C = 10 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ ) ( $I_C = 10 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, T_A = -55^\circ\text{C}$ )	2N2895 2N2895 2N2896, 2N2897 2N2895 2N2895, 2N2896	$h_{FE}$	10 20 35 35 20	— — — — —	—
( $I_C = 150 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ )(1)	2N2895 2N2896 2N2897		40 60 50	120 200 200	
( $I_C = 500 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ )(1)	2N2895		25	—	

**2N2895, 2N2896, 2N2897**

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

Characteristic		Symbol	Min	Max	Unit
Collector-Emitter Saturation Voltage(1) ( $I_C = 150 \text{ mAdc}$ , $I_B = 15 \text{ mAdc}$ )	2N2895, 2N2896 2N2897	$V_{CE(sat)}$	— —	0.6 1.0	Vdc
Base-Emitter Saturation Voltage(1) ( $I_C = 150 \text{ mAdc}$ , $I_B = 15 \text{ mAdc}$ )	2N2895, 2N2896 2N2897	$V_{BE(sat)}$	— —	1.2 1.3	Vdc

**SMALL-SIGNAL CHARACTERISTICS**

Current-Gain — Bandwidth Product ( $I_C = 50 \text{ mAdc}$ , $V_{CE} = 10 \text{ Vdc}$ , $f = 20 \text{ MHz}$ )	2N2895, 2N2896 2N2897	$f_T$	120 100	— —	MHz
Output Capacitance ( $V_{CB} = 10 \text{ Vdc}$ , $I_E = 0$ , $f = 100 \text{ kHz}$ )		$C_{obo}$	—	15	pF
Input Capacitance ( $V_{BE} = 0.5 \text{ Vdc}$ , $I_C = 0$ , $f = 100 \text{ kHz}$ )		$C_{ibo}$	—	80	pF
Small-Signal Current Gain ( $I_C = 5.0 \text{ mAdc}$ , $V_{CE} = 5.0 \text{ Vdc}$ , $f = 1.0 \text{ kHz}$ )	2N2895 2N2896, 2N2897	$h_{fe}$	50 50	200 275	—
Noise Figure ( $I_C = 0.3 \text{ mAdc}$ , $V_{CE} = 10 \text{ Vdc}$ , $R_S = 500 \text{ ohms}$ , $f = 1.0 \text{ kHz}$ , $BW = 15 \text{ kHz}$ )	2N2895	NF	—	8.0	dB

(1) Pulse Test: Pulse Width  $\leq 300 \mu\text{s}$ , Duty Cycle  $\leq 1.8\%$ .