

2N2895  
2N2896  
2N2897

**SILICON  
NPN TRANSISTORS**



**TO-18 CASE**



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**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N2895, 2N2896, and 2N2897 are silicon NPN epitaxial planar transistors designed for small signal, general purpose applications.

**MARKING: FULL PART NUMBER**

**MAXIMUM RATINGS:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

	SYMBOL	2N2895	2N2896	2N2897	UNITS
Collector-Base Voltage	$V_{CBO}$	120	140	60	V
Collector-Emitter Voltage	$V_{CER}$	80	140	60	V
Collector-Emitter Voltage	$V_{CEO}$	65	90	45	V
Emitter-Base Voltage	$V_{EBO}$		7.0		V
Continuous Collector Current	$I_C$		1.0		A
Power Dissipation	$P_D$		500		mW
Power Dissipation ( $T_C=25^\circ\text{C}$ )	$P_D$		1.8		W
Operating and Storage Junction Temperature	$T_J, T_{stg}$		-65 to +200		$^\circ\text{C}$

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

SYMBOL	TEST CONDITIONS	2N2895		2N2896		2N2897		UNITS
		MIN	MAX	MIN	MAX	MIN	MAX	
$I_{CBO}$	$V_{CB}=60\text{V}$	-	2.0	-	10	-	50	nA
$I_{CBO}$	$V_{CB}=60\text{V}, T_A=150^\circ\text{C}$	-	2.0	-	-	-	50	$\mu\text{A}$
$I_{CBO}$	$V_{CB}=90\text{V}$	-	-	-	10	-	-	nA
$I_{CBO}$	$V_{CB}=90\text{V}, T_A=150^\circ\text{C}$	-	-	-	10	-	-	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=5.0\text{V}$	-	5.0	-	10	-	50	nA
$BV_{CBO}$	$I_C=100\mu\text{A}$	120	-	140	-	60	-	V
$BV_{CER}$	$I_C=100\text{mA}, R_{BE}=10\Omega$	80	-	140	-	60	-	V
$BV_{CEO}$	$I_C=100\text{mA}$	65	-	90	-	45	-	V
$BV_{EBO}$	$I_E=100\mu\text{A}$	7.0	-	7.0	-	7.0	-	V
$V_{CE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$	-	0.6	-	0.6	-	1.0	V
$V_{BE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$	-	1.2	-	1.2	-	1.3	V
$h_{FE}$	$V_{CE}=10\text{V}, I_C=10\mu\text{A}$	10	-	-	-	-	-	
$h_{FE}$	$V_{CE}=10\text{V}, I_C=100\mu\text{A}$	20	-	-	-	-	-	
$h_{FE}$	$V_{CE}=10\text{V}, I_C=1.0\text{mA}$	-	-	35	-	35	-	
$h_{FE}$	$V_{CE}=10\text{V}, I_C=10\text{mA}$	35	-	-	-	-	-	
$h_{FE}$	$V_{CE}=10\text{V}, I_C=10\text{mA}, T_A=-55^\circ\text{C}$	20	-	20	-	-	-	
$h_{FE}$	$V_{CE}=10\text{V}, I_C=150\text{mA}$	40	120	60	200	50	200	
$h_{FE}$	$V_{CE}=10\text{V}, I_C=500\text{mA}$	25	-	-	-	-	-	

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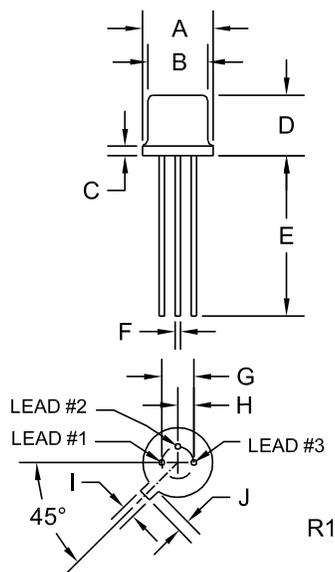
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**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	2N2895		2N2896		2N2897		UNITS
		MIN	MAX	MIN	MAX	MIN	MAX	
$f_T$	$V_{CE}=10\text{V}$ , $I_C=50\text{mA}$ , $f=20\text{MHz}$	120	-	120	-	100	-	MHz
$C_{ob}$	$V_{CB}=10\text{V}$ , $I_E=0$ , $f=100\text{kHz}$	-	15	-	15	-	15	pF
$C_{ib}$	$V_{BE}=0.5\text{V}$ , $I_C=0$ , $f=100\text{kHz}$	-	80	-	80	-	80	pF
$h_{fe}$	$V_{CE}=5.0\text{V}$ , $I_C=5.0\text{mA}$ , $f=1.0\text{kHz}$	50	200	50	275	50	275	
NF	$V_{CE}=10\text{V}$ , $I_C=0.3\text{mA}$ , $R_S=500\Omega$ , $f=1.0\text{kHz}$ , $BW=15\text{kHz}$	-	8.0	-	-	-	-	dB

**TO-18 CASE - MECHANICAL OUTLINE**



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.209	0.230	5.31	5.84
B (DIA)	0.178	0.195	4.52	4.95
C	-	0.030	-	0.76
D	0.170	0.210	4.32	5.33
E	0.500	-	12.70	-
F (DIA)	0.016	0.019	0.41	0.48
G (DIA)	0.100		2.54	
H	0.050		1.27	
I	0.036	0.046	0.91	1.17
J	0.028	0.048	0.71	1.22

TO-18 (REV: R1)

**LEAD CODE:**

- 1) Emitter
- 2) Base
- 3) Collector

**MARKING: FULL PART NUMBER**

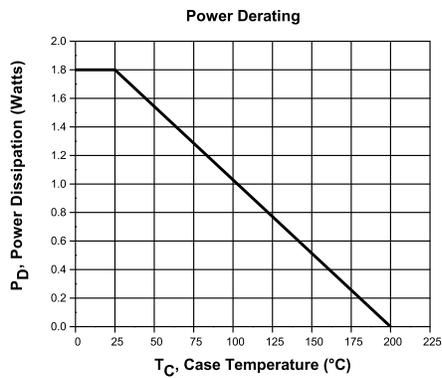
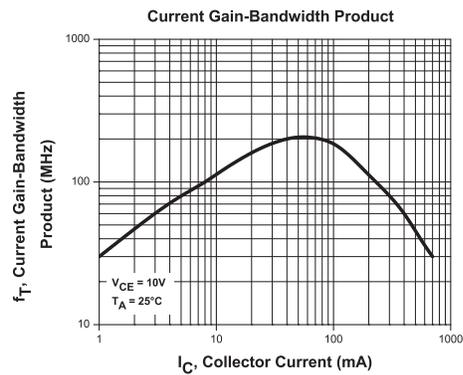
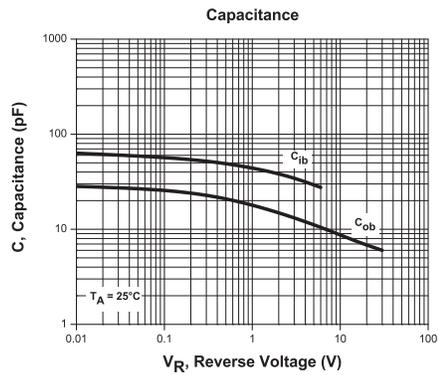
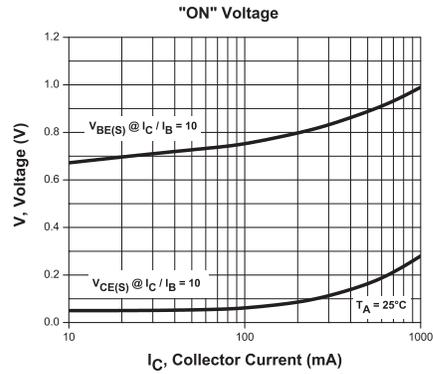
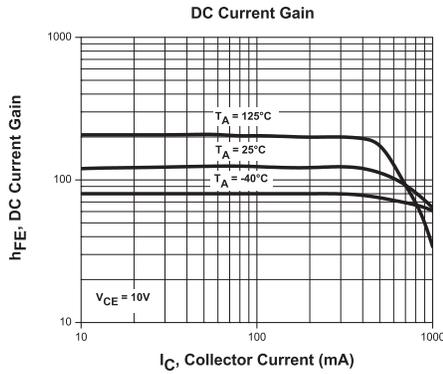
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TYPICAL ELECTRICAL CHARACTERISTICS



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