

# Central<sup>TM</sup> Semiconductor Corp.

145 Adams Ave., Hauppauge, NY 11788 USA  
Phone (631) 435-1110 FAX (631) 435-1824

Manufacturers of World Class Discrete Semiconductors  
www.centrasemi.com

2N3700  
2N3701

**NPN SILICON TRANSISTOR**

**JEDEC TO-18 CASE**

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N3700 and 2N3701 NPN Silicon Transistors are designed for high current general purpose amplifier applications.

## MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ )

	<u>SYMBOL</u>	2N3700 <u>2N3701</u>	<u>UNITS</u>
Collector-Base Voltage	$V_{CB0}$	140	V
Collector-Emitter Voltage	$V_{CEO}$	80	V
Emitter-Base Voltage	$V_{EBO}$	7.0	V
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	$^\circ\text{C}$
Thermal Resistance	$\theta_{JA}$	350	$^\circ\text{C/W}$
Thermal Resistance	$\theta_{JC}$	97.2	$^\circ\text{C/W}$

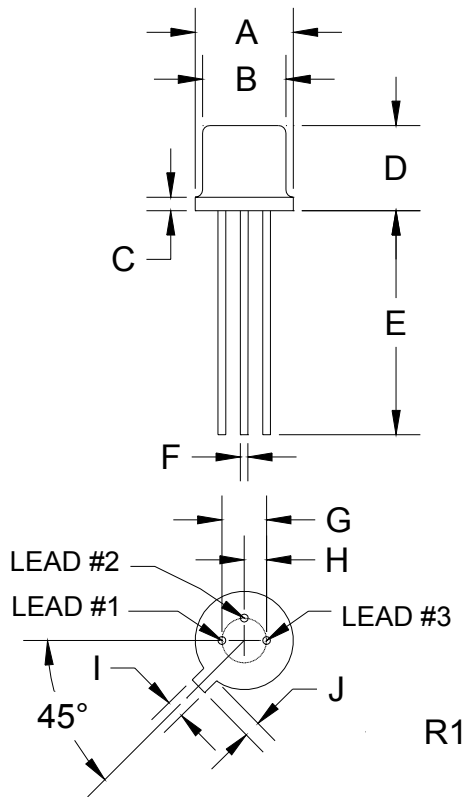
## ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ )

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>2N3700</u>		<u>2N3701</u>		<u>UNITS</u>
		<u>MIN</u>	<u>MAX</u>	<u>MIN</u>	<u>MAX</u>	
$I_{CB0}$	$V_{CB}=90\text{V}$		10		10	nA
$I_{CB0}$	$V_{CB}=90\text{V}, T_A=150^\circ\text{C}$		10		10	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=5.0\text{V}$		10		10	nA
$BV_{CB0}$	$I_C=100\mu\text{A}$	140		140		V
$BV_{CEO}$	$I_C=30\text{mA}$	80		80		V
$BV_{EBO}$	$I_E=100\mu\text{A}$	7.0		7.0		V
$V_{CE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$		0.2		0.2	V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		0.5		0.5	V
$V_{BE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$		1.1		1.1	V
$h_{FE}$	$V_{CE}=10\text{V}, I_C=0.1\text{mA}$	50		30	100	
$h_{FE}$	$V_{CE}=10\text{V}, I_C=10\text{mA}$	90		40	120	
$h_{FE}$	$V_{CE}=10\text{V}, I_C=150\text{mA}$	100	300	40	120	
$h_{FE}$	$V_{CE}=10\text{V}, I_C=150\text{mA}, T_A=-55^\circ\text{C}$	40		-		
$h_{FE}$	$V_{CE}=10\text{V}, I_C=500\text{mA}$	50		30	100	
$h_{FE}$	$V_{CE}=10\text{V}, I_C=1.0\text{A}$	15		15		

(Continue)

SYMBOL	TEST CONDITIONS	2N3700		2N3701		UNITS
		MIN	MAX	MIN	MAX	
$f_T$	$V_{CE}=10V, I_C=50mA, f=20MHz$	100	400	80	400	MHz
$C_{ob}$	$V_{CB}=10V, I_E=0, f=1.0MHz$		12		12	pF
$C_{ib}$	$V_{BE}=0.5V, I_C=0, f=1.0MHz$		60		60	pF
$h_{fe}$	$V_{CE}=5.0V, I_C=1.0mA, f=1.0KHz$	80	400	30	200	
$r_b'C_c$	$V_{CB}=10V, I_E=10mA, f=4.0MHz$	25	400	25	400	ps
NF	$V_{CE}=10V, I_C=100\mu A, f=1.0KHz, R_S=1.0K\Omega$		4.0		4.0	dB

**TO-18 PACKAGE - MECHANICAL OUTLINE**



DIMENSIONS				
SYMBOL	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

**Central**<sup>TM</sup>  
Semiconductor Corp.

145 Adams Ave., Hauppauge, NY 11788 USA  
Phone (631) 435-1110 FAX (631) 435-1824

Manufacturers of World Class Discrete Semiconductors

www.centrasemi.com