

2N3700
2N3701

SILICON
NPN TRANSISTORS



TO-18 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N3700 and 2N3701 are silicon NPN transistors designed for high current general purpose applications.

MARKING: FULL PART NUMBER

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

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	140	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	7.0	V
Continuous Collector Current	I_C	1.0	A
Power Dissipation ($T_C=25^\circ\text{C}$)	P_D	1.8	W
Power Dissipation	P_D	500	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +200	$^\circ\text{C}$
Thermal Resistance	θ_{JA}	350	$^\circ\text{C/W}$
Thermal Resistance	θ_{JC}	97.2	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	2N3700		2N3701		UNITS
		MIN	MAX	MIN	MAX	
I_{CBO}	$V_{CB}=90\text{V}$	-	10	-	10	nA
I_{CBO}	$V_{CB}=90\text{V}, T_A=150^\circ\text{C}$	-	10	-	10	μA
I_{EBO}	$V_{EB}=5.0\text{V}$	-	10	-	10	nA
BV_{CBO}	$I_C=100\mu\text{A}$	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	-	

R1 (4-March 2014)

2N3700
2N3701

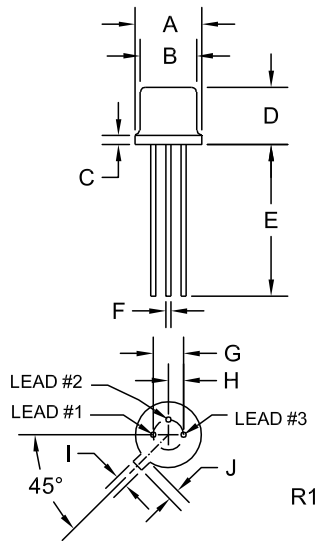
SILICON
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ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$ unless otherwise noted)

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

R1 (4-March 2014)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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