2N3700

Low Power Transistor

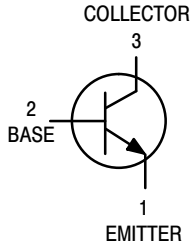
NPN Silicon

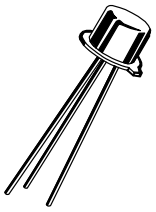
ON Semiconductor®

http://onsemi.com

Features

- MIL−PRF−19500/391 Qualified
- Available as JAN, JANTX, and JANTXV
- Hermetically Sealed Commercial Product with Option for Military Temperature Range Screening





TO−18
CASE 206AA
STYLE 1

MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Value	Unit
Collector − Emitter Voltage	V_{CEO}	80	Vdc
Collector − Base Voltage	V_{CBO}	140	Vdc
Emitter − Base Voltage	V_{EBO}	7.0	Vdc
Collector Current − Continuous	I_C	1.0	Adc
Total Device Dissipation @ T_A = 25°C	P_T	500	mW
Total Device Dissipation @ T_C = 25°C	P_T	1.0	W
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−65 to +200	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	325	°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	150	°C/W

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. This number assumes a substrate of 1 oz. thick copper and a copper area of 550 mm^2.

ORDERING INFORMATION

Device	Package	Shipping
JAN2N3700	TO−18	Bulk
JANTX2N3700		
JANTXV2N3700		

© Semiconductor Components Industries, LLC, 2011

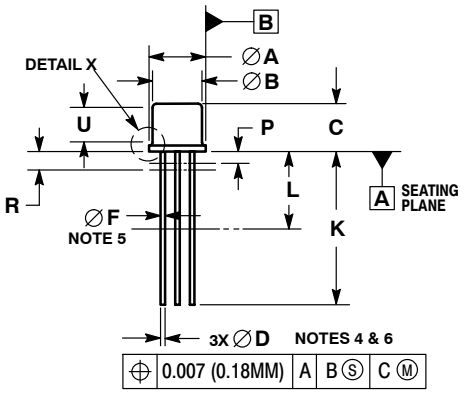
ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

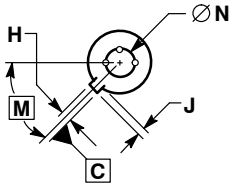
Characteristic	Symbol	Min	Max	Unit
ON CHARACTERISTICS				
DC Current Gain (I_C = 0.1 mAdc, V_{CE} = 10 Vdc) (Note 2) (I_C = 10 mAdc, V_{CE} = 10 Vdc) (Note 2) (I_C = 150 mAdc, V_{CE} = 10 Vdc) (Note 2) (I_C = 500 mAdc, V_{CE} = 10 Vdc) (Note 2) (I_C = 1.0 Adc, V_{CE} = 10 Vdc) (Note 2)	h_{FE}	 50 90 100 50 15	 300 – 300 300 –	–
Collector – Emitter Saturation Voltage (Note 2) (I_C = 150 mAdc, I_B = 15 mAdc) (I_C = 500 mAdc, I_B = 50 mAdc)	$V_{CE(sat)}$	 – –	 0.2 0.5	Vdc
Base – Emitter Saturation Voltage (Note 2) (I_C = 150 mAdc, I_B = 15 mAdc)	$V_{BE(sat)}$	 –	 1.1	Vdc
SMALL−SIGNAL CHARACTERISTICS				
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, 100 kHz ≤ f ≤ 1.0 MHz)	C_{obo}	–	12	pF
Small−Signal Current Gain (I_C = 50 mAdc, V_{CE} = 10 Vdc, f = 20 MHz)	$\|h_{fe}\|$	 5.0	 20	–

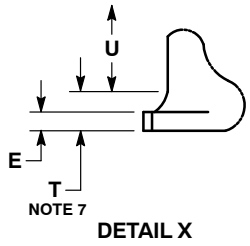
2. Pulse Test: See section 4 of MIL−STD−750.

PACKAGE DIMENSIONS

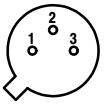
TO−18 3
CASE 206AA−01
ISSUE O







DETAIL X



LEAD IDENTIFICATION DETAIL

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: INCHES.
3. DIMENSION J MEASURED FROM DIAMETER A TO EDGE.
4. LEAD TRUE POSITION TO BE DETERMINED AT THE GUAGE PLANE DEFINED BY DIMENSION R.
5. DIMENSION F APPLIES BETWEEN DIMENSION P AND L.
6. DIMENSION D APPLIES BETWEEN DIMENSION L AND K.
7. BODY CONTOUR OPTIONAL WITHIN ZONE DEFINED BY DIMENSIONS A, B, AND T.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	5.31	5.84	0.209	0.230
B	4.52	4.95	0.178	0.195
C	4.32	5.33	0.170	0.210
D	0.41	0.53	0.016	0.021
E	---	0.76	---	0.030
F	0.41	0.48	0.016	0.019
H	0.91	1.17	0.036	0.046
J	0.71	1.22	0.028	0.048
K	12.70	19.05	0.500	0.750
L	6.35	---	0.250	---
M	45 ° BSC		45 ° BSC	
N	2.54 BSC		0.100 BSC	
P	---	1.27	---	0.050
R	1.37 BSC		0.054 BSC	
T	---	0.76	---	0.030
U	2.54	---	0.100	---

STYLE 1:
PIN 1. EMITTER
2. BASE
3. COLLECTOR

ON Semiconductor and ON are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. “Typical” parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including “Typicals” must be validated for each customer application by customer’s technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303−675−2175 or 800−344−3860 Toll Free USA/Canada
Fax: 303−675−2176 or 800−344−3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800−282−9855 Toll Free USA/Canada
Europe, Middle East and Africa Technical Support:
Phone: 421 33 790 2910
Japan Customer Focus Center
Phone: 81−3−5773−3850

ON Semiconductor Website: **www.onsemi.com**

Order Literature: http://www.onsemi.com/orderlit

For additional information, please contact your local Sales Representative

2N3700/D