

2N3634, 2N3634L, 2N3635, 2N3635L, 2N3636, 2N3636L, 2N3637, 2N3637L



ON Semiconductor®

<http://onsemi.com>

Low Power Transistors

PNP Silicon

Features

- MIL-PRF-19500/357 Qualified
- Available as JAN, JANTX, JANTXV and JANHC

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

Characteristic	Symbol	2N3634/L 2N3635/L	2N3636/L 2N3637/L	Unit
Collector-Emmitter Voltage	V_{CEO}	-140	-175	Vdc
Collector-Base Voltage	V_{CBO}	-140	-175	Vdc
Emitter-Base Voltage	V_{EBO}	-5.0		Vdc
Collector Current - Continuous	I_C	1.0		Adc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$	P_T	1.0		W
Total Device Dissipation @ $T_C = 25^\circ\text{C}$	P_T	5.0		W
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		$^\circ\text{C}$

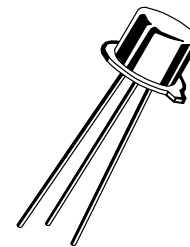
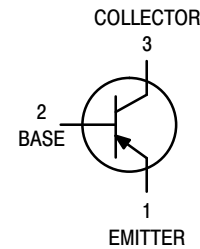
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	175	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	35	$^\circ\text{C/W}$

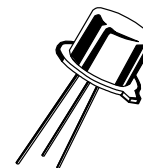
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

ORDERING INFORMATION

Level	Device	Package	Shipping
JAN JANTX JANTXV JANHC	2N3634	TO-39	Bulk
	2N3635		
	2N3636		
	2N3637		
	2N3634L	TO-5	Bulk
	2N3635L		
	2N3636L		
	2N3637L		



**TO-5
CASE 205AA
STYLE 1
2N3634L
2N3635L
2N3636L
2N3637L**



**TO-39
CASE 205AB
STYLE 1
2N3634
2N3635
2N3636
2N3637**

2N3634, 2N3634L, 2N3635, 2N3635L, 2N3636, 2N3636L, 2N3637, 2N3637L

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector–Emitter Breakdown Voltage (I _C = –10 mA)	V _{(BR)CEO}	–140 –175	– –	V
Emitter–Base Cutoff Current (V _{EB} = –3.0 V) (V _{EB} = –5.0 V)	I _{EBO}	– –	–50 –10	nA μA
Collector–Emitter Cutoff Current (V _{CE} = –100 V)	I _{CEO}	–	–10	μA
Collector–Base Cutoff Current (V _{CB} = –100 V) (V _{CB} = –140 V) (V _{CB} = –175 V)	I _{CBO}	– – –	–100 –10 –10	nA μA μA

ON CHARACTERISTICS (Note 1)

DC Current Gain (I _C = –0.1 mA, V _{CE} = –10 V) (I _C = –1.0 mA, V _{CE} = –10 V) (I _C = –10 mA, V _{CE} = –10 V) (I _C = –50 mA, V _{CE} = –10 V) (I _C = –150 mA, V _{CE} = –10 V)	2N3634, 2N3636	h _{FE}	25 45 50 50 30	– – – 150 –	–
DC Current Gain (I _C = –0.1 mA, V _{CE} = –10 V) (I _C = –1.0 mA, V _{CE} = –10 V) (I _C = –10 mA, V _{CE} = –10 V) (I _C = –50 mA, V _{CE} = –10 V) (I _C = –150 mA, V _{CE} = –10 V)	2N3635, 2N3637	h _{FE}	55 90 100 100 60	– – – 300 –	–
Collector–Emitter Saturation Voltage (I _C = –10 mA, I _B = –1.0 mA) (I _C = –50 mA, I _B = –5.0 mA)	V _{CE(sat)}	– –	–0.3 –0.6		V
Base–Emitter Saturation Voltage (I _C = –10 mA, I _B = –1.0 mA) (I _C = –50 mA, I _B = –5.0 mA)	V _{BE(sat)}	– –0.65	–0.8 –0.9		V

SMALL–SIGNAL CHARACTERISTICS

Magnitude of Small–Signal Current Gain (I _C = –30 mA, V _{CE} = –30 V, f = 100 MHz)	2N3634, 2N3636 2N3635, 2N3637	h _{fe}	1.5 2.0	8.0 8.5	–
Small–Signal Current Gain (I _C = –10 mA, V _{CE} = –10 V, f = 1 kHz)	2N3634, 2N3636 2N3635, 2N3637	h _{fe}	40 80	160 320	–
Output Capacitance (V _{CB} = –20 V, I _E = 0 A, 100 kHz ≤ f ≤ 1.0 MHz)		C _{obo}	–	10	pF
Input Capacitance (V _{EB} = –1.0 V, I _C = 0 A, 100 kHz ≤ f ≤ 1.0 MHz)		C _{ibo}	–	75	pF
Noise Figure (V _{CE} = –10 V, I _C = –0.5 mA, R _g = 1 kΩ, f = 100 Hz) (V _{CE} = –10 V, I _C = –0.5 mA, R _g = 1 kΩ, f = 1.0 kHz) (V _{CE} = –10 V, I _C = –0.5 mA, R _g = 1 kΩ, f = 10 kHz)		NF	– – –	5.0 3.0 3.0	dB

SWITCHING CHARACTERISTICS

Delay Time (Reference Figure 11 in MIL–PRF–19500/357)	t _d	–	100	ns
Rise Time (Reference Figure 11 in MIL–PRF–19500/357)	t _r	–	100	ns
Storage Time (Reference Figure 11 in MIL–PRF–19500/357)	t _s	–	500	ns
Fall Time (Reference Figure 11 in MIL–PRF–19500/357)	t _f	–	150	ns
Turn–Off Time (Reference Figure 11 in MIL–PRF–19500/357)	t _{off}	–	600	ns

1. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

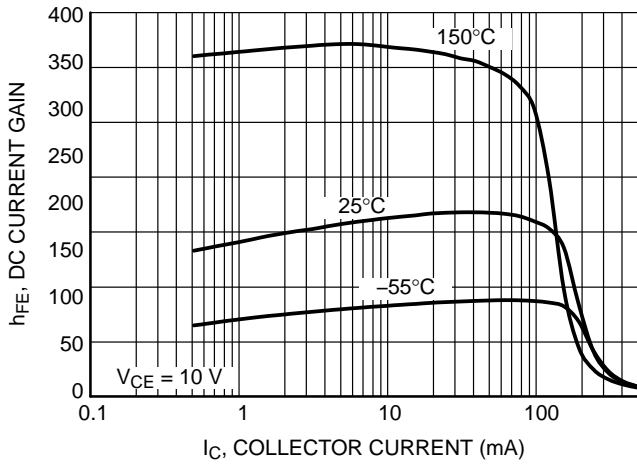


Figure 1. DC Current Gain

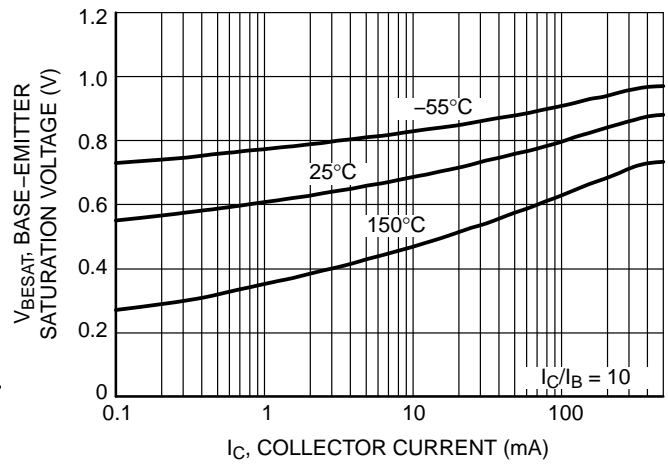


Figure 2. Base-Emitter Saturation Voltage

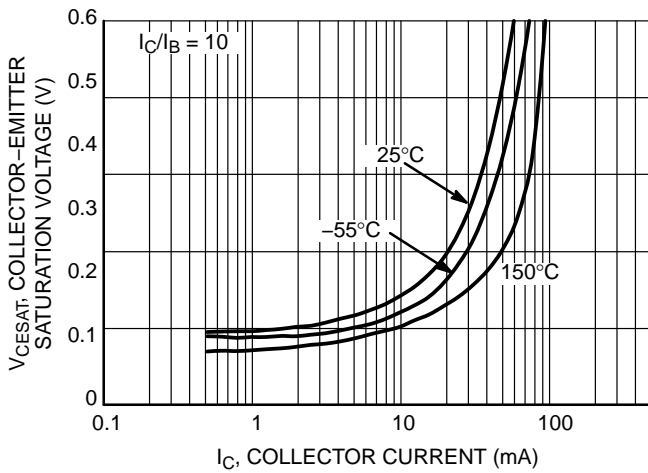


Figure 3. Collector-Emitter Saturation Voltage

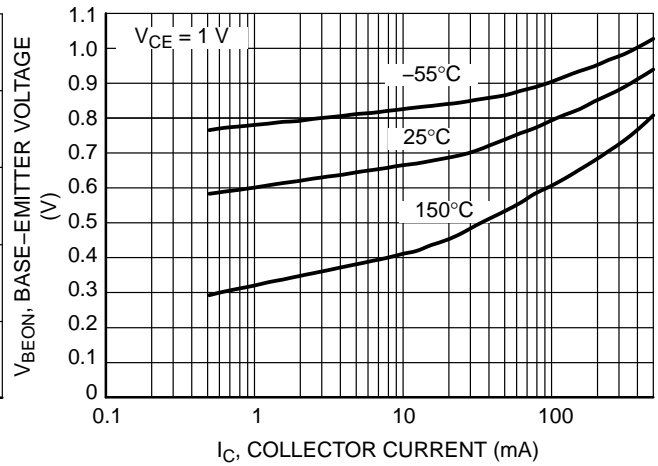


Figure 4. Base-Emitter Voltage

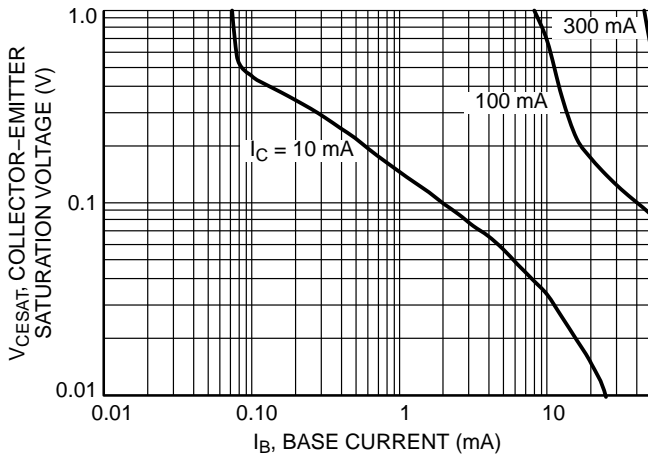


Figure 5. Collector Saturation Region

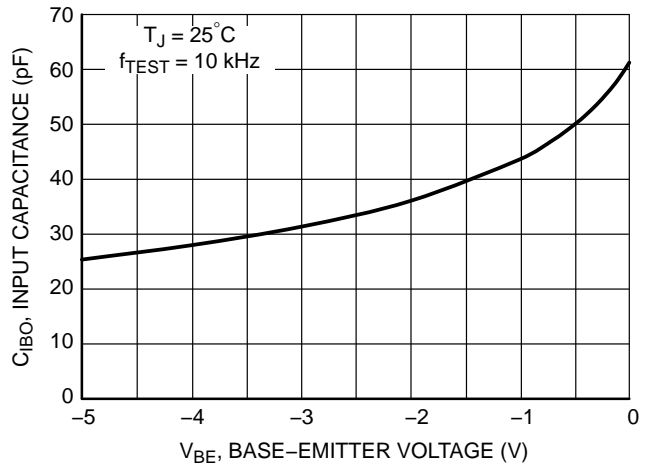


Figure 6. Input Capacitance

2N3634, 2N3634L, 2N3635, 2N3635L, 2N3636, 2N3636L, 2N3637, 2N3637L

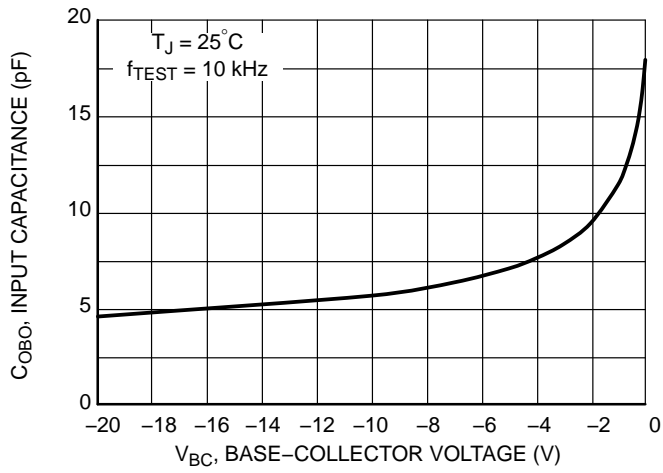


Figure 7. Output Capacitance

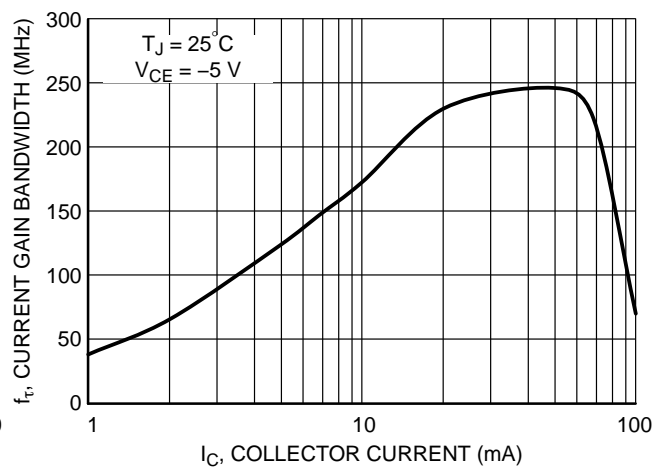
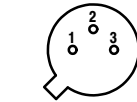
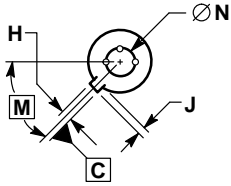
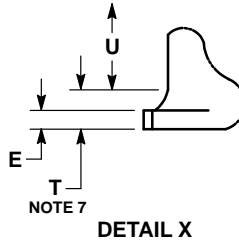
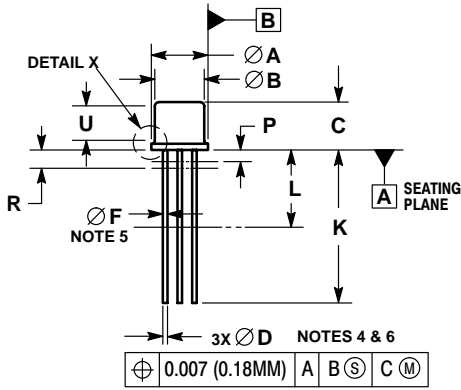


Figure 8. Current Gain Bandwidth Product

PACKAGE DIMENSIONS

TO-5 3-Lead
CASE 205AA
ISSUE B



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 GAUGE 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.
8. DIMENSION B SHALL NOT VARY MORE THAN 0.010 IN ZONE P.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	8.89	9.40	0.350	0.370
B	8.00	8.51	0.315	0.335
C	6.10	6.60	0.240	0.260
D	0.41	0.53	0.016	0.021
E	0.23	3.18	0.009	0.125
F	0.41	0.48	0.016	0.019
H	0.71	0.86	0.028	0.034
J	0.73	1.02	0.029	0.040
K	38.10	44.45	1.500	1.750
L	6.35	---	0.250	---
M	45° BSC		45° BSC	
N	5.08 BSC		0.200 BSC	
P	---	1.27	---	0.050
R	1.37 BSC		0.054 BSC	
T	---	0.76	---	0.030
U	2.54	---	0.100	---

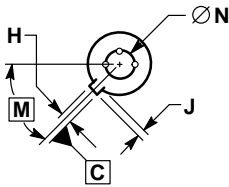
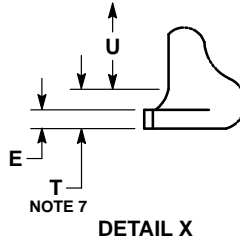
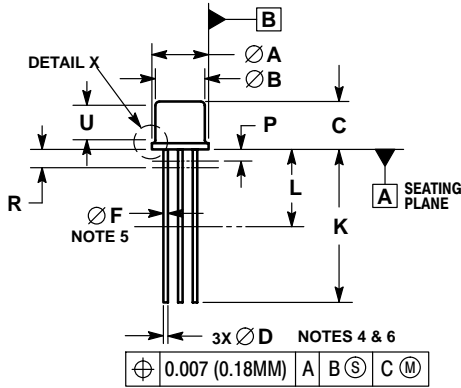
STYLE 1:

1. EMITTER
2. BASE
3. COLLECTOR

2N3634, 2N3634L, 2N3635, 2N3635L, 2N3636, 2N3636L, 2N3637, 2N3637L

PACKAGE DIMENSIONS

TO-39 3-Lead CASE 205AB ISSUE A



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 GAUGE 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.
8. DIMENSION B SHALL NOT VARY MORE THAN 0.010 IN ZONE P.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	8.89	9.40	0.350	0.370
B	8.00	8.51	0.315	0.335
C	6.10	6.60	0.240	0.260
D	0.41	0.48	0.016	0.019
E	0.23	3.18	0.009	0.125
F	0.41	0.48	0.016	0.019
H	0.71	0.86	0.028	0.034
J	0.73	1.02	0.029	0.040
K	12.70	14.73	0.500	0.580
L	6.35	---	0.250	---
M	45° BSC		45° BSC	
N	5.08 BSC		0.200 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 are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of SCILLC's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. 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: 81-3-5817-1050

ON Semiconductor Website: www.onsemi.com

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

For additional information, please contact your local Sales Representative

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Bipolar Transistors - BJT category](#):

Click to view products by [ON Semiconductor manufacturer](#):

Other Similar products are found below :

[619691C](#) [MCH4017-TL-H](#) [MJ15024/WS](#) [MJ15025/WS](#) [BC546/116](#) [BC556/FSC](#) [BC557/116](#) [BSW67A](#) [HN7G01FU-A\(T5L,F,T](#)
[NJVMJD148T4G](#) [NSVMMBT6520LT1G](#) [NTE187A](#) [NTE195A](#) [NTE2302](#) [NTE2330](#) [NTE2353](#) [NTE316](#) [IMX9T110](#) [NTE63](#) [NTE65](#)
[C4460](#) [SBC846BLT3G](#) [2SA1419T-TD-H](#) [2SA1721-O\(TE85L,F\)](#) [2SA1727TLP](#) [2SA2126-E](#) [2SB1202T-TL-E](#) [2SB1204S-TL-E](#) [2SC5488A-](#)
[TL-H](#) [2SD2150T100R](#) [SP000011176](#) [FMC5AT148](#) [2N2369ADCSM](#) [2SB1202S-TL-E](#) [2SC2412KT146S](#) [2SC4618TLN](#) [2SC5490A-TL-H](#)
[2SD1816S-TL-E](#) [2SD1816T-TL-E](#) [CMXT2207 TR](#) [CPH6501-TL-E](#) [MCH4021-TL-E](#) [BC557B](#) [TTC012\(Q\)](#) [BULD128DT4](#) [JANTX2N3810](#)
[Jantx2N5416](#) [US6T6TR](#) [KSF350](#) [068071B](#)