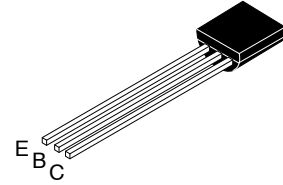


PNP General-Purpose Transistor

PN2907



TO-92 3 4.825x4.76
CASE 135AN

Description

This device is designed for use with general-purpose amplifiers and switches requiring collector currents to 500 mA.

These devices are Pb-Free, Halogen Free/BFR Free, Beryllium Free and are RoHS compliant.

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted) (Note 1, 2)

Symbol	Parameter	Value	Unit
V _{CEO}	Collector-Emitter Voltage	-40	V
V _{CBO}	Collector-Base Voltage	-60	V
V _{EBO}	Emitter-Base Voltage	-5.0	V
I _C	Collector Current - Continuous	-800	mA
T _J , T _{STG}	Operating and Storage Junction Temperature Range	-55 to +150	°C

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.

- These ratings are based on a maximum junction temperature of 150°C.
- These are steady-state limits. onsemi should be consulted on applications involving pulsed or low-duty cycle operations.

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

Symbol	Parameter	Max (Note 3)	Unit
P _D	Total Device Dissipation	625	mW
	Derate Above 25°C	5.0	mW/°C
R _{θJC}	Thermal Resistance, Junction to Case	83.3	°C/W
R _{θJA}	Thermal Resistance, Junction to Ambient	200	°C/W

- PCB size: FR-4 76 x 114 x 1.57 mm³ (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

MARKING DIAGRAM



PN2907 = Specific Device Code
A = Assembly Site
Y = Year of Production
WW = Work Week Number

ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

PN2907

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

Symbol	Parameter	Conditions	Min	Max	Unit
OFF CHARACTERISTICS					
$V_{(BR)CEO}$	Collector–Emitter Breakdown Voltage (Note 4)	$I_C = -10\text{ mA}, I_B = 0$	-40	-	V
$V_{(BR)CBO}$	Collector–Base Breakdown Voltage	$I_C = -10\text{ }\mu\text{A}, I_E = 0$	-60	-	V
$V_{(BR)EBO}$	Emitter–Base Breakdown Voltage	$I_E = -10\text{ }\mu\text{A}, I_C = 0$	-5.0	-	V
I_{CEX}	Collector Cut–Off Current	$V_{CE} = -30\text{ V}, V_{EB} = -0.5\text{ V}$	-	-50	nA
I_{BL}	Base Cut–Off Current	$V_{CE} = -30\text{ V}, V_{EB} = -0.5\text{ V}$	-	-50	nA
I_{CBO}	Collector Cut–Off Current	$V_{CB} = -50\text{ V}, I_E = 0$	-	-20	nA
		$V_{CB} = -50\text{ V}, I_E = 0, T_A = 150^\circ\text{C}$	-	-20	μA

ON CHARACTERISTICS (Note 4)

h_{FE}	DC Current Gain	$V_{CE} = -10\text{ V}, I_C = -0.1\text{ mA}$	35	-	
		$V_{CE} = -10\text{ V}, I_C = -1.0\text{ mA}$	50	-	
		$V_{CE} = -10\text{ V}, I_C = -10\text{ mA}$	70	-	
		$V_{CE} = -10\text{ V}, I_C = -150\text{ mA}$	100	300	
		$V_{CE} = -10\text{ V}, I_C = -500\text{ mA}$	30	-	
$V_{CE(sat)}$	Collector–Emitter Saturation Voltage	$I_C = -150\text{ mA}, I_B = -15\text{ mA}$	-	-0.4	V
		$I_C = -500\text{ mA}, I_B = -50\text{ mA}$	-	-1.6	
$V_{BE(sat)}$	Base–Emitter Saturation Voltage	$I_C = -150\text{ mA}, I_B = -15\text{ mA}$	-	-1.3	V
		$I_C = -500\text{ mA}, I_B = -50\text{ mA}$	-	-2.6	

SMALL SIGNAL CHARACTERISTICS

C_{ob}	Output Capacitance	$V_{CB} = -10\text{ V}, f = 1.0\text{ MHz}$	-	8	pF
C_{ib}	Input Capacitance	$V_{EB} = -2.0\text{ V}, f = 1.0\text{ MHz}$	-	30	pF
h_{fe}	Small–Signal Current Gain	$I_C = -50\text{ mA}, V_{CE} = -20\text{ V}, f = 100\text{ MHz}$	2	-	

SWITCHING CHARACTERISTICS

t_{on}	Turn–On Time	$V_{CC} = -30\text{ V}, I_C = -150\text{ mA}, I_{B1} = -15\text{ mA}$	-	45	ns
t_d	Delay Time		-	10	ns
t_r	Rise Time		-	40	ns
t_{off}	Turn–Off Time	$V_{CC} = -6.0\text{ V}, I_C = -150\text{ mA}, I_{B1} = I_{B2} = -15\text{ mA}$	-	100	ns
t_s	Storage Time		-	80	ns
t_f	Fall Time		-	30	ns

4. Pulse test: pulse width $\leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2.0\%$.

ORDERING INFORMATION

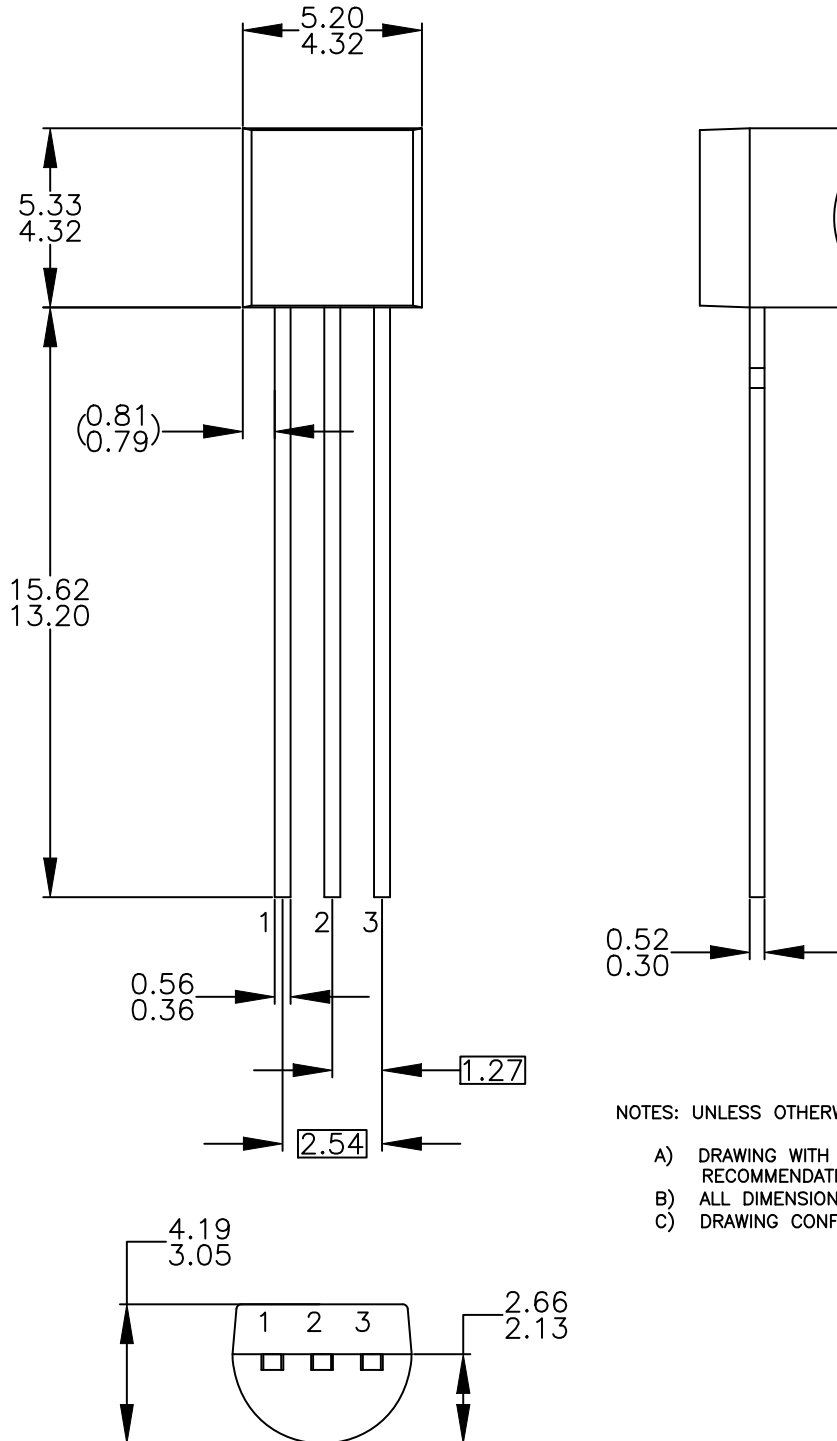
Part Number	Top Mark	Package	Shipping
PN2907BU	PN2907	TO–92 3 4.825x4.76 (Pb–Free)	10000 Units / Bulk

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

TO-92 3 4.825x4.76
CASE 135AN
ISSUE O

DATE 31 JUL 2016



NOTES: UNLESS OTHERWISE SPECIFIED

- A) DRAWING WITH REFERENCE TO JEDEC TO-92 RECOMMENDATIONS.
- B) ALL DIMENSIONS ARE IN MILLIMETERS.
- C) DRAWING CONFORMS TO ASME Y14.5M-2009.

DOCUMENT NUMBER:	98AON13880G	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
DESCRIPTION:	TO-92 3 4.825X4.76	PAGE 1 OF 1

ON Semiconductor and **ON** are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor 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. ON Semiconductor does not convey any license under its patent rights nor the rights of others.

onsemi, **Onsemi**, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi**'s product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** 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. Buyer is responsible for its products and applications using **onsemi** products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by **onsemi**. "Typical" parameters which may be provided in **onsemi** 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. **onsemi** does not convey any license under any of its intellectual property rights nor the rights of others. **onsemi** products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use **onsemi** products for any such unintended or unauthorized application, Buyer shall indemnify and hold **onsemi** 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 **onsemi** was negligent regarding the design or manufacture of the part. **onsemi** is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:

Technical Library: www.onsemi.com/design/resources/technical-documentation
onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support

For additional information, please contact your local Sales Representative at www.onsemi.com/support/sales