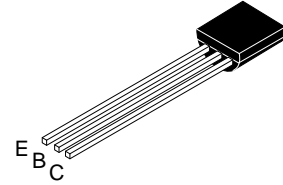


PNP General-Purpose Transistor

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.

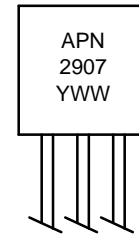
- These ratings are based on a maximum junction temperature of 150°C.
- These are steady-state limits. **onsemi** should be consulted on applications involving pulsed or low-duty cycle operations.

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°C unless otherwise noted)

| Symbol | Parameter | Conditions | Min | Max | Unit |
|--------|-----------|------------|-----|-----|------|
|--------|-----------|------------|-----|-----|------|

OFF CHARACTERISTICS

| | | | | | |
|----------------------|--|---|------|-----|----|
| V _{(BR)CEO} | Collector–Emitter Breakdown Voltage (Note 4) | I _C = –10 mA, I _B = 0 | –40 | – | V |
| V _{(BR)CBO} | Collector–Base Breakdown Voltage | I _C = –10 μA, I _E = 0 | –60 | – | V |
| V _{(BR)EBO} | Emitter–Base Breakdown Voltage | I _E = –10 μA, I _C = 0 | –5.0 | – | V |
| I _{CEX} | Collector Cut–Off Current | V _{CE} = –30 V, V _{EB} = –0.5 V | – | –50 | nA |
| I _{BL} | Base Cut–Off Current | V _{CE} = –30 V, V _{EB} = –0.5 V | – | –50 | nA |
| I _{CBO} | Collector Cut–Off Current | V _{CB} = –50 V, I _E = 0 | – | –20 | nA |
| | | V _{CB} = –50 V, I _E = 0, T _A = 150°C | – | –20 | μA |

ON CHARACTERISTICS (Note 4)

| | | | | | |
|----------------------|--------------------------------------|---|-----|------|---|
| h _{FE} | DC Current Gain | V _{CE} = –10 V, I _C = –0.1 mA | 35 | – | |
| | | V _{CE} = –10 V, I _C = –1.0 mA | 50 | – | |
| | | V _{CE} = –10 V, I _C = –10 mA | 70 | – | |
| | | V _{CE} = –10 V, I _C = –150 mA | 100 | 300 | |
| | | V _{CE} = –10 V, I _C = –500 mA | 30 | – | |
| V _{CE(sat)} | Collector–Emitter Saturation Voltage | I _C = –150 mA, I _B = –15 mA | – | –0.4 | V |
| | | I _C = –500 mA, I _B = –50 mA | – | –1.6 | |
| V _{BE(sat)} | Base–Emitter Saturation Voltage | I _C = –150 mA, I _B = –15 mA | – | –1.3 | V |
| | | I _C = –500 mA, I _B = –50 mA | – | –2.6 | |

SMALL SIGNAL CHARACTERISTICS

| | | | | | |
|-----------------|---------------------------|---|---|----|----|
| C _{ob} | Output Capacitance | V _{CB} = –10 V, f = 1.0 MHz | – | 8 | pF |
| C _{ib} | Input Capacitance | V _{EB} = –2.0 V, f = 1.0 MHz | – | 30 | pF |
| h _{fe} | Small–Signal Current Gain | I _C = –50 mA, V _{CE} = –20 V, f = 100 MHz | 2 | – | |

SWITCHING CHARACTERISTICS

| | | | | | |
|------------------|---------------|---|---|-----|----|
| t _{on} | Turn–On Time | V _{CC} = –30 V, I _C = –150 mA, I _{B1} = –15 mA | – | 45 | ns |
| t _d | Delay Time | | – | 10 | ns |
| t _r | Rise Time | | – | 40 | ns |
| t _{off} | Turn–Off Time | V _{CC} = –6.0 V, I _C = –150 mA, I _{B1} = I _{B2} = –15 mA | – | 100 | ns |
| t _s | Storage Time | | – | 80 | ns |
| t _f | Fall Time | | – | 30 | ns |

4. Pulse test: pulse width ≤ 300 μs, duty cycle ≤ 2.0%.

ORDERING INFORMATION

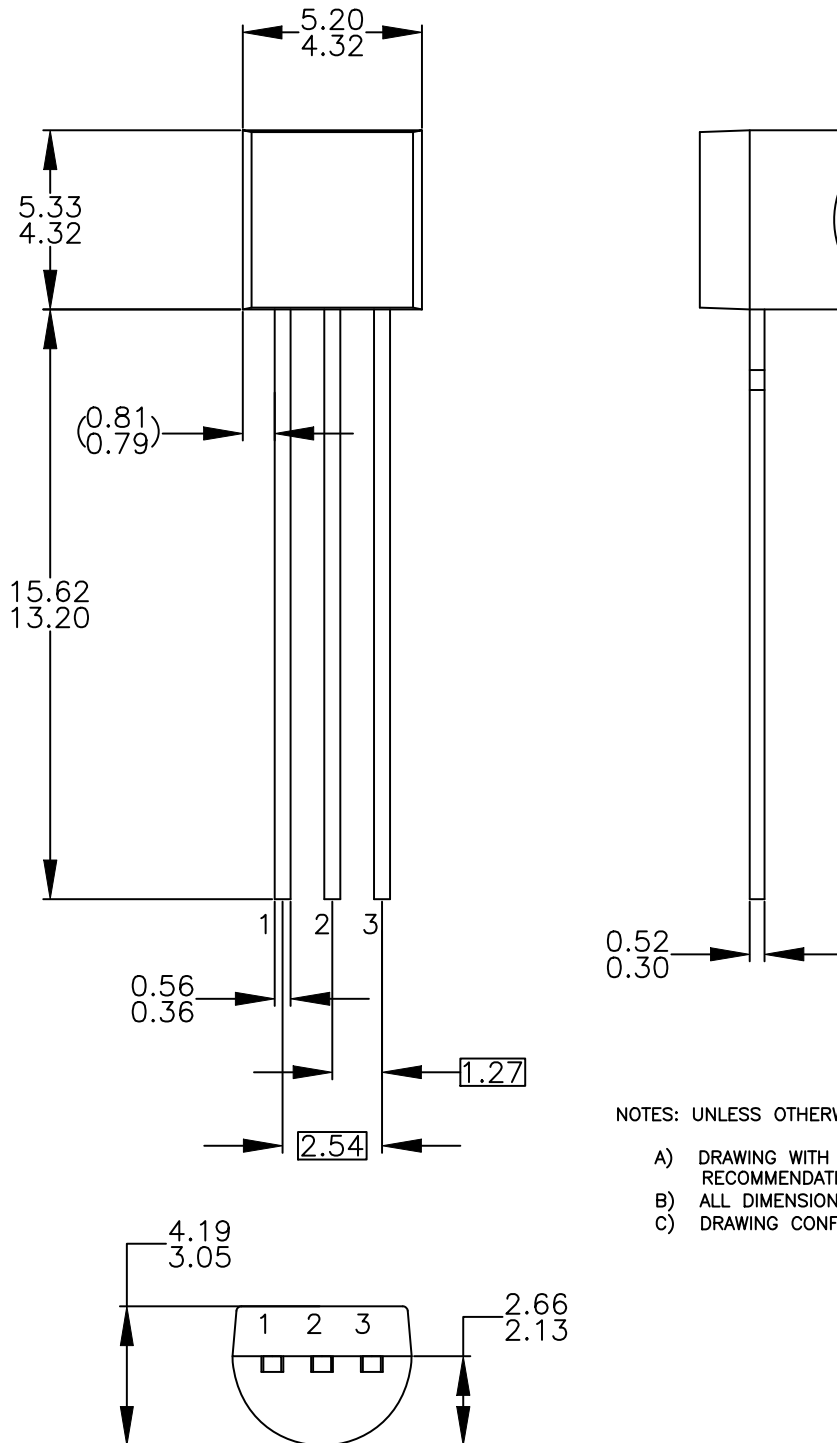
| Part Number | Top Mark | Package | Shipping |
|-------------|----------|---------------------------------|--------------------|
| PN2907BU | PN2907 | TO–92 3 4.825x4.76 (Pb–Free) | 10000 Units / Bulk |

†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.

| | | |
|-------------------------|---------------------------|--|
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| DESCRIPTION: | TO-92 3 4.825X4.76 | PAGE 1 OF 1 |

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