



PN2907A

SMALL SIGNAL PNP TRANSISTOR

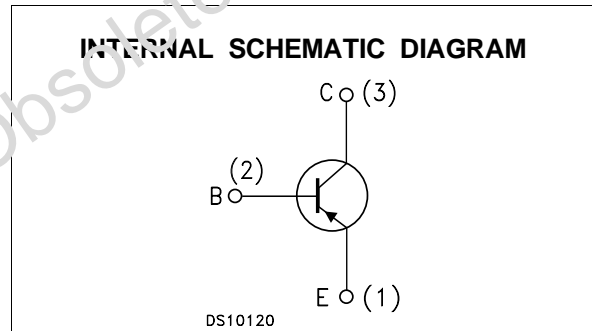
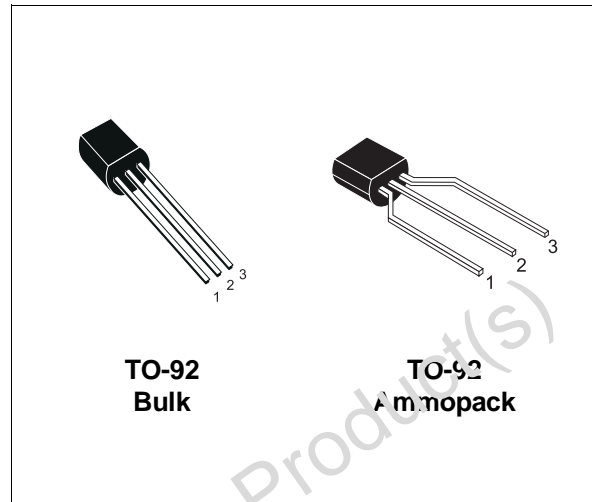
PRELIMINARY DATA

| Ordering Code | Marking | Package / Shipment |
|---------------|---------|--------------------|
| PN2907A | PN2907A | TO-92 / Bulk |
| PN2907A-AP | PN2907A | TO-92 / Ammopack |

- SILICON EPITAXIAL PLANAR PNP TRANSISTOR
- TO-92 PACKAGE SUITABLE FOR THROUGH-HOLE PCB ASSEMBLY
- THE NPN COMPLEMENTARY TYPE IS PN2222A

APPLICATIONS

- WELL SUITABLE FOR TV AND HOME APPLIANCE EQUIPMENT
- SMALL LOAD SWITCH TRANSISTOR WITH HIGH GAIN AND LOW SATURATION VOLTAGE



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|-----------|---|------------|------|
| V_{CBO} | Collector-Emitter Voltage ($I_E = 0$) | -60 | V |
| V_{CEO} | Collector-Emitter Voltage ($I_B = 0$) | -60 | V |
| V_{EBO} | Emitter-Base Voltage ($I_C = 0$) | -5 | V |
| I_C | Collector Current | -0.6 | A |
| I_{CM} | Collector Peak Current ($t_p < 5$ ms) | -0.8 | A |
| P_{tot} | Total Dissipation at $T_{amb} = 25$ °C | 500 | mW |
| T_{stg} | Storage Temperature | -65 to 150 | °C |
| T_j | Max. Operating Junction Temperature | 150 | °C |

THERMAL DATA

| | | | | |
|----------------|-------------------------------------|-----|------|-----------------------------|
| $R_{thj-amb}$ | Thermal Resistance Junction-Ambient | Max | 250 | $^{\circ}\text{C}/\text{W}$ |
| $R_{thj-case}$ | Thermal Resistance Junction-Case | Max | 83.3 | $^{\circ}\text{C}/\text{W}$ |

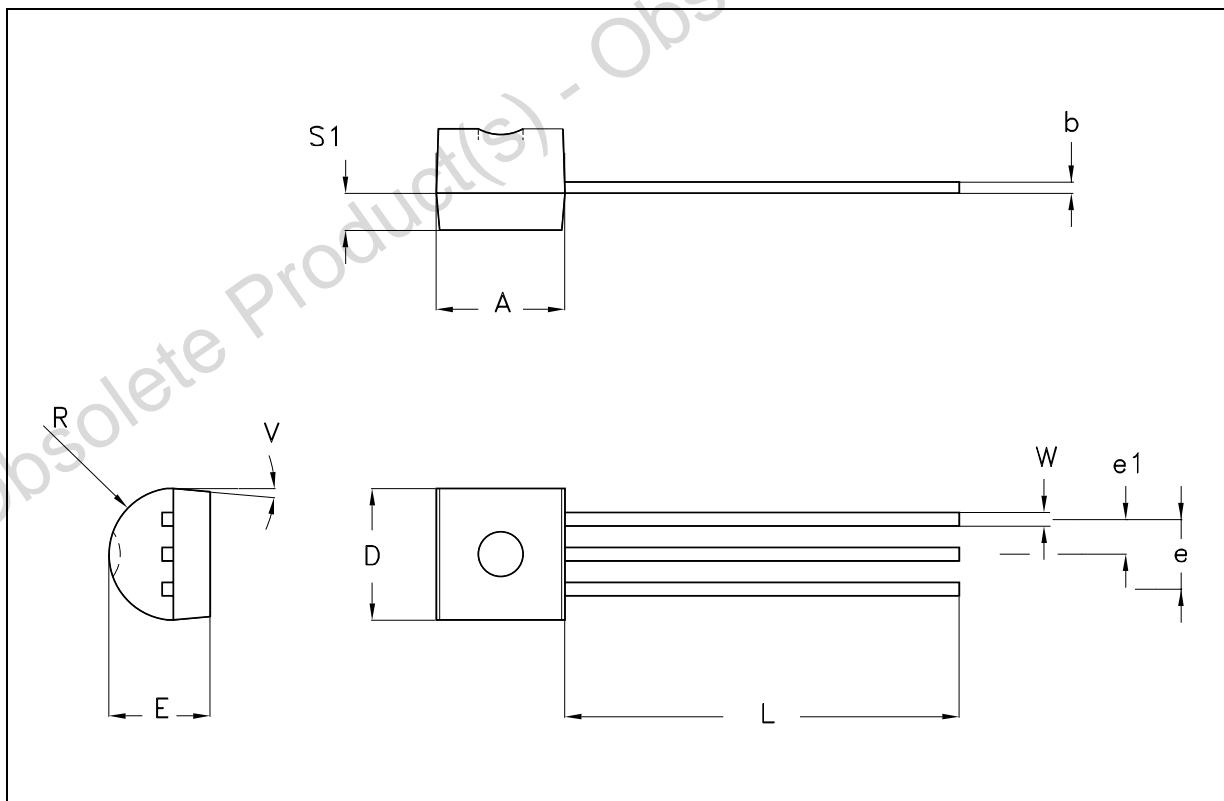
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|-----------------|--|---|-------------------------------|------|--------------|--------|
| I_{CEX} | Collector Cut-off Current ($V_{BE} = -3\text{ V}$) | $V_{CE} = -30\text{ V}$ | | | -50 | nA |
| I_{BEX} | Base Cut-off Current ($V_{BE} = -3\text{ V}$) | $V_{CE} = -30\text{ V}$ | | | -50 | nA |
| I_{CBO} | Collector Cut-off Current ($I_E = 0$) | $V_{CB} = -50\text{ V}$ | | | -10 | nA |
| $V_{(BR)CEO}^*$ | Collector-Emitter Breakdown Voltage ($I_B = 0$) | $I_C = -10\text{ mA}$ | -60 | | | V |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage ($I_E = 0$) | $I_C = -10\text{ }\mu\text{A}$ | -60 | | | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage ($I_C = 0$) | $I_E = -10\text{ }\mu\text{A}$ | -5 | | | V |
| $V_{CE(sat)}^*$ | Collector-Emitter Saturation Voltage | $I_C = -150\text{ mA}$ $I_B = -15\text{ mA}$ $I_C = -500\text{ mA}$ $I_B = -50\text{ mA}$ | | | -0.4 -1.6 | V V |
| $V_{BE(sat)}^*$ | Collector-Base Saturation Voltage | $I_C = -150\text{ mA}$ $I_B = -15\text{ mA}$ $I_C = -500\text{ mA}$ $I_B = -50\text{ mA}$ | | | -1.3 -2.6 | V V |
| h_{FE}^* | DC Current Gain | $I_C = -0.1\text{ mA}$ $V_{CE} = -10\text{ V}$ $I_C = -1\text{ mA}$ $V_{CE} = -10\text{ V}$ $I_C = -10\text{ mA}$ $V_{CE} = -10\text{ V}$ $I_C = -150\text{ mA}$ $V_{CE} = -10\text{ V}$ $I_C = -500\text{ mA}$ $V_{CE} = -10\text{ V}$ | 75 100 100 100 50 | | 300 | |
| f_T | Transition Frequency | $I_C = -50\text{ mA}$ $V_{CE} = -20\text{ V}$ $f = 100\text{ MHz}$ | 200 | | | MHz |
| C_{CBO} | Collector-Base Capacitance | $I_E = 0$ $V_{CB} = -10\text{ V}$ $f = 1\text{ MHz}$ | | | 8 | pF |
| C_{EBO} | Emitter-Base Capacitance | $I_C = 0$ $V_{EB} = -2\text{ V}$ $f = 1\text{ MHz}$ | | | 30 | pF |
| t_d | Delay Time | $I_C = -150\text{ mA}$ $I_B = -15\text{ mA}$ $V_{CC} = -30\text{ V}$ | | | 10 | ns |
| t_r | Rise Time | | | | 40 | ns |
| t_{on} | Switching On Time | | | | 45 | ns |
| t_s | Storage Time | $I_C = -150\text{ mA}$ $I_{B1} = -I_{B2} = -15\text{ mA}$ $V_{CC} = -30\text{ V}$ | | 190 | | ns |
| t_f | Fall Time | | | | 30 | ns |
| t_{off} | Switching Off Time | | | 220 | | ns |

* Pulsed: Pulse duration = 300 μs , duty cycle $\leq 2\%$

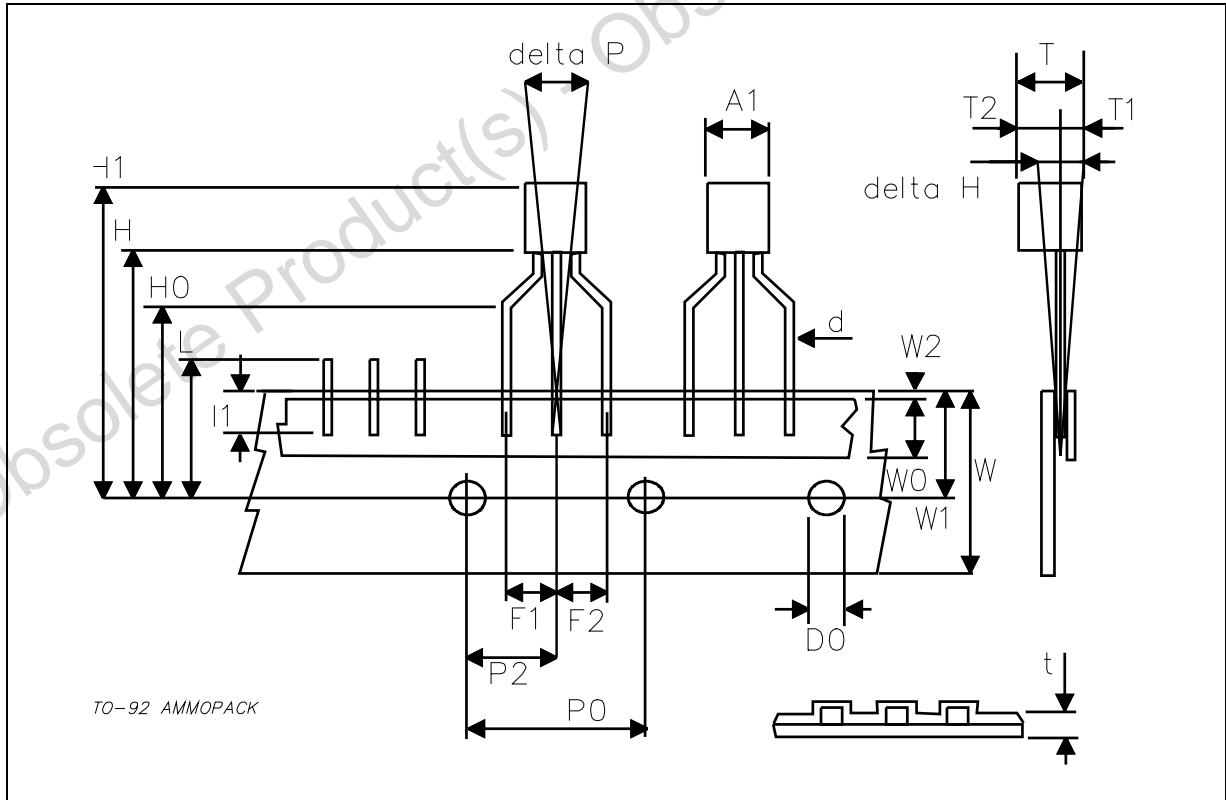
TO-92 MECHANICAL DATA

| DIM. | mm | | | inch | | |
|------|----------|------|----------|----------|------|----------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | 4.32 | | 4.95 | 0.170 | | 0.195 |
| b | 0.36 | | 0.51 | 0.014 | | 0.020 |
| D | 4.45 | | 4.95 | 0.175 | | 0.194 |
| E | 3.30 | | 3.94 | 0.130 | | 0.155 |
| e | 2.41 | | 2.67 | 0.095 | | 0.105 |
| e1 | 1.14 | | 1.40 | 0.045 | | 0.055 |
| L | 12.70 | | 15.49 | 0.500 | | 0.609 |
| R | 2.16 | | 2.41 | 0.085 | | 0.094 |
| S1 | 1.14 | | 1.52 | 0.045 | | 0.059 |
| W | 0.41 | | 0.56 | 0.016 | | 0.022 |
| V | 4 degree | | 6 degree | 4 degree | | 6 degree |



TO-92 AMMOPACK SHIPMENT (Suffix"-AP") MECHANICAL DATA

| DIM. | mm | | | inch | | |
|---------|-------|-------|-------|--------|-------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A1 | | | 4.80 | | | 0.189 |
| T | | | 3.80 | | | 0.150 |
| T1 | | | 1.60 | | | 0.063 |
| T2 | | | 2.30 | | | 0.091 |
| d | | | 0.48 | | | 0.019 |
| P0 | 12.50 | 12.70 | 12.90 | 0.492 | 0.500 | 0.508 |
| P2 | 5.65 | 6.35 | 7.05 | 0.222 | 0.250 | 0.278 |
| F1,F2 | 2.44 | 2.54 | 2.94 | 0.096 | 0.100 | 0.116 |
| delta H | -2.00 | | 2.00 | -0.079 | | 0.079 |
| W | 17.50 | 18.00 | 19.00 | 0.689 | 0.709 | 0.748 |
| W0 | 5.70 | 6.00 | 6.30 | 0.224 | 0.236 | 0.248 |
| W1 | 8.50 | 9.00 | 9.25 | 0.335 | 0.354 | 0.364 |
| W2 | | | 0.50 | | | 0.020 |
| H | 18.50 | | 20.50 | 0.728 | | 0.807 |
| H0 | 15.50 | 16.00 | 16.50 | 0.610 | 0.630 | 0.650 |
| H1 | | | 25.00 | | | 0.984 |
| D0 | 3.80 | 4.00 | 4.20 | 0.150 | 0.157 | 0.165 |
| t | | | 0.90 | | | 0.035 |
| L | | | 11.00 | | | 0.433 |
| I1 | 3.00 | | | 0.118 | | |
| delta P | -1.00 | | 1.00 | -0.039 | | 0.039 |



Obsolete Product(s) - Obsolete Product(s)

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specification mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a trademark of STMicroelectronics

© 2003 STMicroelectronics – Printed in Italy – All Rights Reserved

STMicroelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States.

<http://www.st.com>