



# PN2907A

## SMALL SIGNAL PNP TRANSISTOR

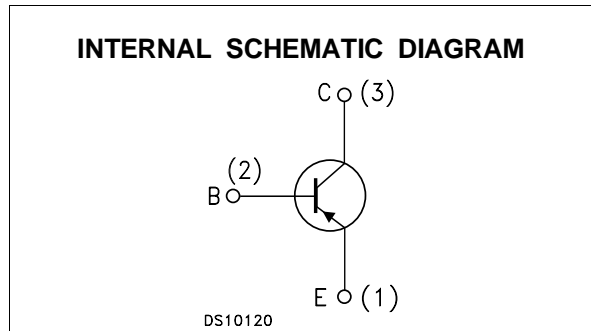
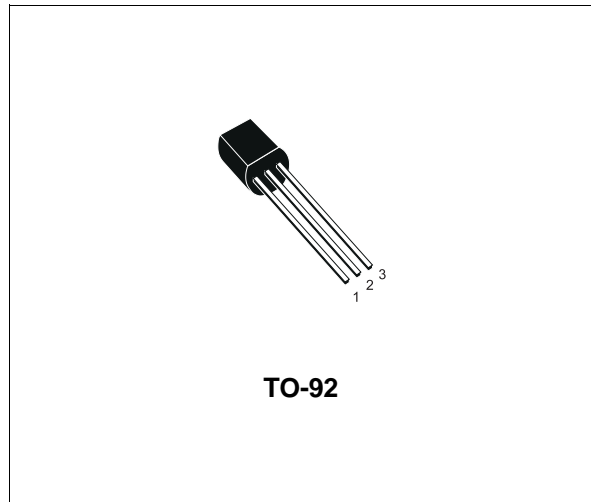
PRELIMINARY DATA

Type	Marking
PN2907A	PN2907A

- 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
$I_{CM}$	Collector Peak Current	-0.8	A
$P_{tot}$	Total Dissipation at $T_C = 25^\circ\text{C}$	500	mW
$T_{stg}$	Storage Temperature	-65 to 150	$^\circ\text{C}$
$T_j$	Max. Operating Junction Temperature	150	$^\circ\text{C}$

**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	$^{\circ}\text{C}/\text{W}$

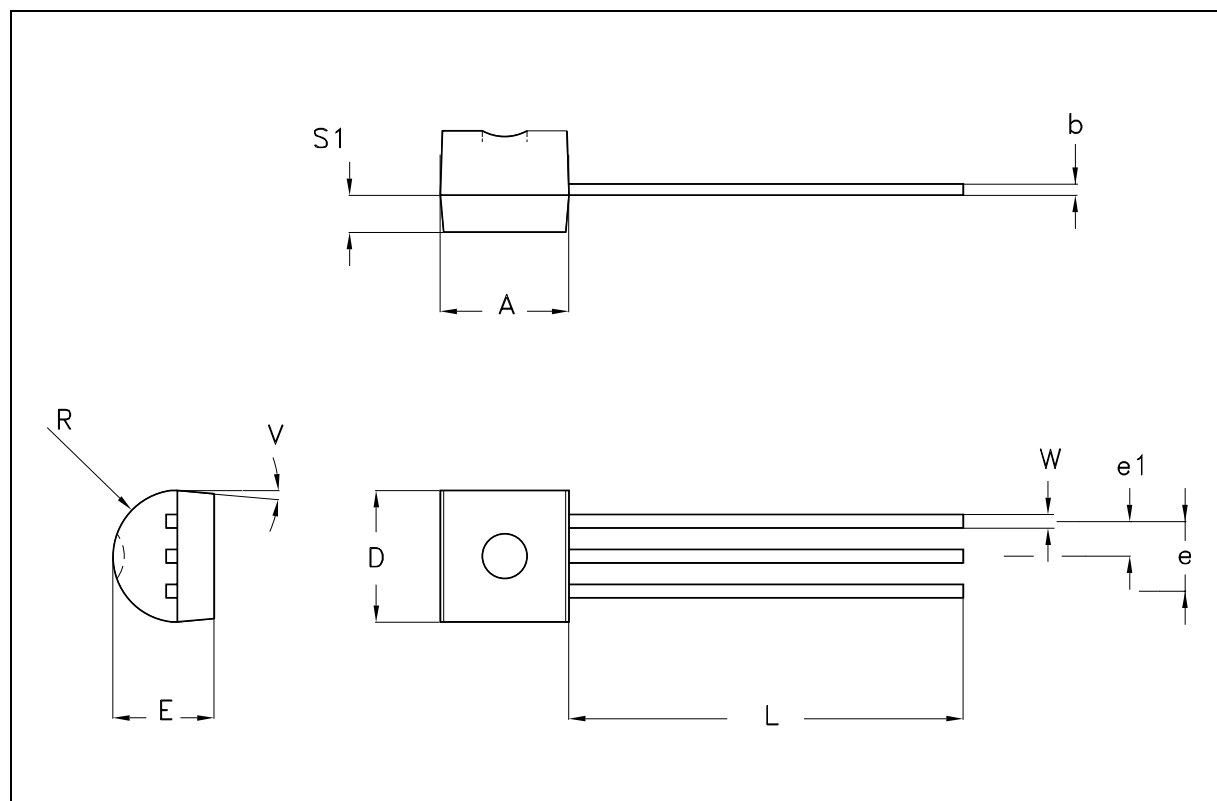
**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25^{\circ}\text{C}$  unless otherwise specified)

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  $\mu\text{s}$ , 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



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

© 2002 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>