



**PZT3906**

## SMALL SIGNAL PNP TRANSISTOR

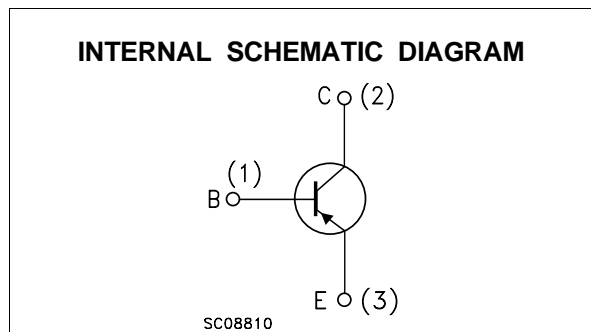
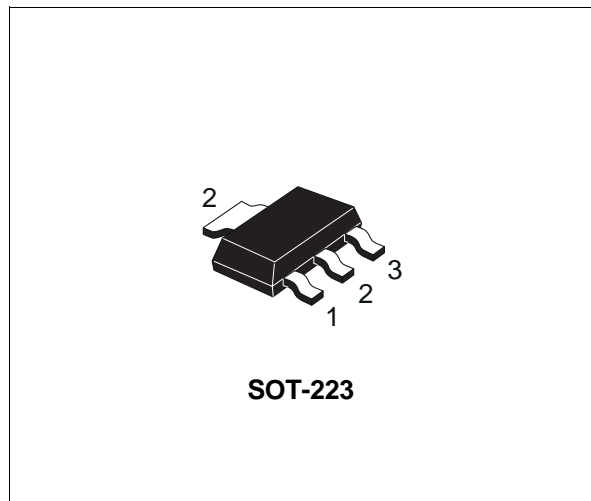
PRELIMINARY DATA

Type	Marking
PZT3906	3906

- SILICON EPITAXIAL PLANAR PNP TRANSISTOR
- SOT-223 PLASTIC PACKAGE FOR SURFACE MOUNTING CIRCUITS
- TAPE AND REEL PACKING
- THE NPN COMPLEMENTARY TYPE IS PZT3904

### APPLICATIONS

- WELL SUITABLE FOR SMD MOTHER BOARD ASSEMBLY
- SMALL LOAD SWITCH TRANSISTOR WITH HIGH GAIN AND LOW SATURATION VOLTAGE



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage ( $I_E = 0$ )	-60	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	-40	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	-6	V
$I_C$	Collector Current	-200	mA
$P_{tot}$	Total Dissipation at $T_C = 25\text{ }^\circ\text{C}$	1	W
$T_{stg}$	Storage Temperature	-65 to 150	$^\circ\text{C}$
$T_j$	Max. Operating Junction Temperature	150	$^\circ\text{C}$

**THERMAL DATA**

R <sub>thj-amb</sub> •	Thermal Resistance Junction-Ambient	Max	125	°C/W
------------------------	-------------------------------------	-----	-----	------

• Device mounted on a PCB of 1 cm<sup>2</sup>

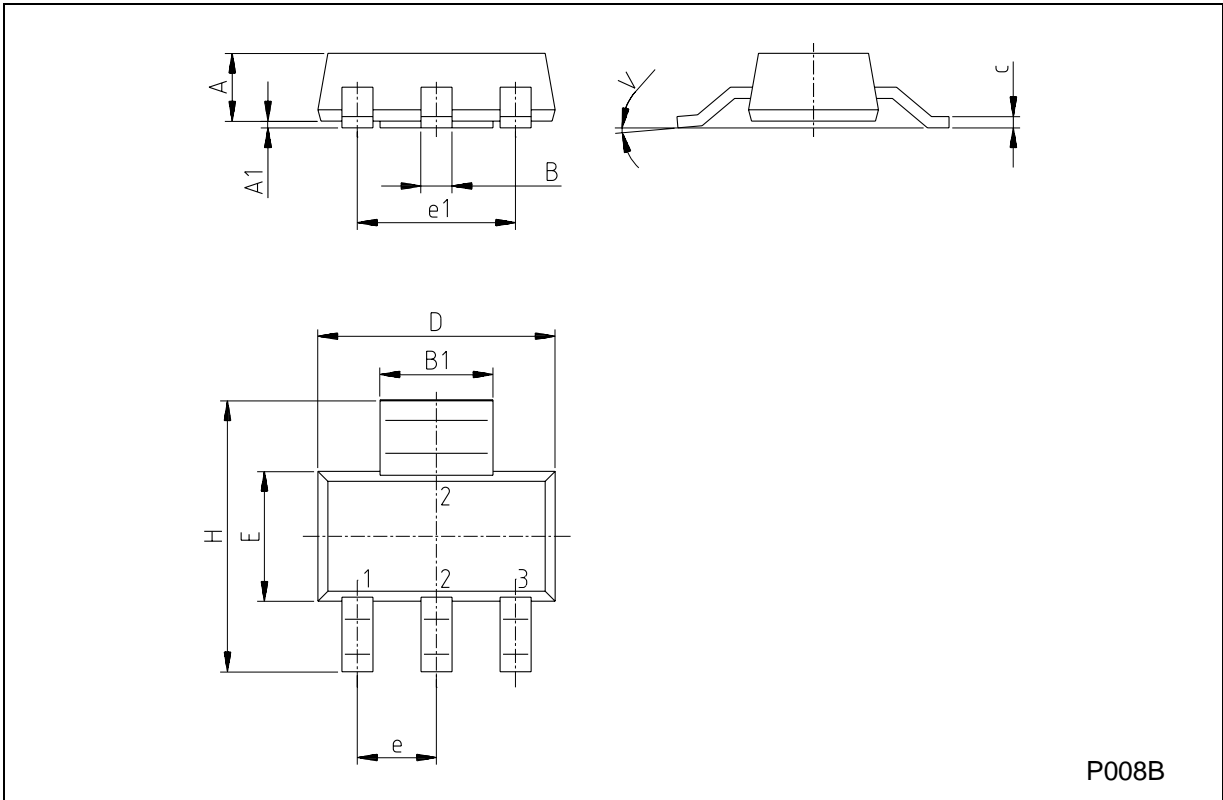
**ELECTRICAL CHARACTERISTICS** (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CEX</sub>	Collector Cut-off Current (V <sub>BE</sub> = 3 V)	V <sub>CE</sub> = -30 V			-50	nA
I <sub>BEX</sub>	Collector Cut-off Current (V <sub>BE</sub> = 3 V)	V <sub>CE</sub> = -30 V			-50	nA
V <sub>(BR)CEO*</sub>	Collector-Emitter Breakdown Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = -1 mA	-40			V
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage (I <sub>E</sub> = 0)	I <sub>C</sub> = -10 μA	-60			V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage (I <sub>C</sub> = 0)	I <sub>E</sub> = -10 μA	-6			V
V <sub>CE(sat)*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = -10 mA I <sub>B</sub> = -1 mA I <sub>C</sub> = -50 mA I <sub>B</sub> = -5 mA			-0.25 -0.4	V V
V <sub>BE(sat)*</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = -10 mA I <sub>B</sub> = -1 mA I <sub>C</sub> = -50 mA I <sub>B</sub> = -5 mA	-0.65		-0.85 -0.95	V V
h <sub>FE*</sub>	DC Current Gain	I <sub>C</sub> = -0.1 mA V <sub>CE</sub> = -1 V I <sub>C</sub> = -1 mA V <sub>CE</sub> = -1 V I <sub>C</sub> = -10 mA V <sub>CE</sub> = -1 V I <sub>C</sub> = -50 mA V <sub>CE</sub> = -1 V I <sub>C</sub> = -100 mA V <sub>CE</sub> = -1 V	60 80 100 60 30		300	
f <sub>T</sub>	Transition Frequency	I <sub>C</sub> = -10mA V <sub>CE</sub> = -20 V f = 100MHz	250			MHz
NF	Noise Figure	V <sub>CE</sub> = -5 V I <sub>C</sub> = -0.1 mA f = 10 Hz to 15.7 KHz R <sub>G</sub> = 1 KΩ		4		dB
C <sub>CBO</sub>	Collector-Base Capacitance	I <sub>E</sub> = 0 V <sub>CB</sub> = -5 V f = 100 KHz		6		pF
C <sub>EBO</sub>	Emitter-Base Capacitance	I <sub>C</sub> = 0 V <sub>EB</sub> = -0.5 V f = 100 KHz		25		pF
t <sub>d</sub>	Delay Time	I <sub>C</sub> = -10 mA I <sub>B</sub> = -1 mA			35	ns
t <sub>r</sub>	Rise Time	V <sub>CC</sub> = -3V			35	ns
t <sub>s</sub>	Storage Time	I <sub>C</sub> = -10 mA I <sub>B1</sub> = -I <sub>B2</sub> = -1 mA			225	ns
t <sub>f</sub>	Fall Time	V <sub>CC</sub> = -3V			72	ns

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

**SOT-223 MECHANICAL DATA**

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			1.80			0.071
B	0.60	0.70	0.80	0.024	0.027	0.031
B1	2.90	3.00	3.10	0.114	0.118	0.122
c	0.24	0.26	0.32	0.009	0.010	0.013
D	6.30	6.50	6.70	0.248	0.256	0.264
e		2.30			0.090	
e1		4.60			0.181	
E	3.30	3.50	3.70	0.130	0.138	0.146
H	6.70	7.00	7.30	0.264	0.276	0.287
V			10°			10°
A1		0.02				



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>