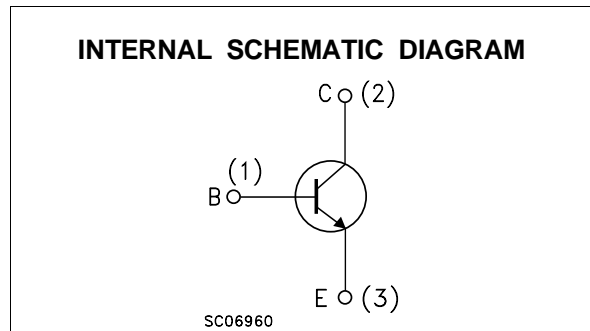
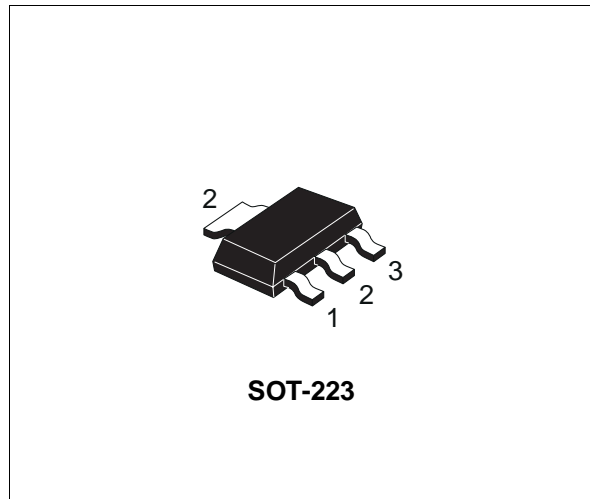


MEDIUM POWER AMPLIFIER

ADVANCE DATA

- SILICON EPITAXIAL PLANAR NPN TRANSISTORS
- MINIATURE PLASTIC PACKAGE FOR APPLICATION IN SURFACE MOUNTING CIRCUITS
- GENERAL PURPOSE MAINLY INTENDED FOR USE IN MEDIUM POWER INDUSTRIAL APPLICATION AND FOR AUDIO AMPLIFIER OUTPUT STAGE
- PNP COMPLEMENTS ARE STZT2907 AND STZT2907A RESPECTIVELY



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		STZT2222	STZT2222A	
V _{CBO}	Collector-Base Voltage (I _E = 0)	60	75	V
V _{CEO}	Collector-Emitter Voltage (I _B = 0)	30	40	V
V _{EBO}	Emitter-Base Voltage (I _C = 0)	5	6	V
I _C	Collector Current	0.8		A
P _{tot}	Total Dissipation at T _c = 25 °C	1.5		W
T _{stg}	Storage Temperature	-65 to 150		°C
T _j	Max. Operating Junction Temperature	150		°C

STZT2222/STZT2222A

THERMAL DATA

$R_{thj-amb}$	Thermal Resistance Junction-Ambient	Max	83.3	$^{\circ}\text{C}/\text{W}$
$R_{thj-tab}$	Thermal Resistance Junction-Collector Tab	Max	10	$^{\circ}\text{C}/\text{W}$

• Mounted on a ceramic substrate area = 30 x 35 x 0.7 mm

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = \text{rated } V_{CBO}$ $V_{CB} = \text{rated } V_{CBO} \quad T_{amb} = 125^{\circ}\text{C}$			10 10	nA μA
I_{CEX}	Collector Cut-off Current ($V_{BE} = -3\text{V}$)	$V_{CE} = 60\text{ V}$ for STZT2222A			10	nA
I_{BEX}	Base Cut-off Current ($V_{BE} = -3\text{V}$)	$V_{CE} = 60\text{ V}$ for STZT2222A			20	nA
I_{EBO}	Emitter Cut-off Current ($I_E = 0$)	$V_{EB} = 3\text{ V}$ for STZT2222 for STZT2222A			30 15	nA nA
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_E = 0$)	$I_C = 10\ \mu\text{A}$ for STZT2222 for STZT2222A	60 75			V V
$V_{(BR)CEO}^*$	Collector-Emitter Breakdown Voltage ($I_B = 0$)	$I_C = 10\text{ mA}$ for STZT2222 for STZT2222A	30 40			V V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_C = 0$)	$I_E = 10\ \mu\text{A}$ for STZT2222 for STZT2222	5 6			V V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 150\text{ mA} \quad I_B = 15\text{ mA}$ for STZT2222 for STZT2222A $I_C = 500\text{ mA} \quad I_B = 50\text{ mA}$ for STZT2222 for STZT2222A			0.4 0.3 1.6 1	V V V V
$V_{BE(sat)}^*$	Base-Emitter Saturation Voltage	$I_C = 150\text{ mA} \quad I_B = 15\text{ mA}$ for STZT2222 for STZT2222A $I_C = 500\text{ mA} \quad I_B = 50\text{ mA}$ for STZT2222 for STZT2222A		0.6	1.3 1.2 2.6 2	V V V V
h_{FE}^*	DC Current Gain	$I_C = 0.1\text{ mA} \quad V_{CE} = 10\text{ V}$ $I_C = 1\text{ mA} \quad V_{CE} = 10\text{ V}$ $I_C = 10\text{ mA} \quad V_{CE} = 10\text{ V}$ $I_C = 150\text{ mA} \quad V_{CE} = 10\text{ V}$ $I_C = 150\text{ mA} \quad V_{CE} = 1\text{ V}$ $I_C = 500\text{ mA} \quad V_{CE} = 10\text{ V}$ for STZT2222 for STZT2222A $I_C = 10\text{ mA} \quad V_{CE} = 10\text{ V} \quad T_C = -55^{\circ}\text{C}$ for STZT2222	35 50 75 100 50 30 40 35		300	

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

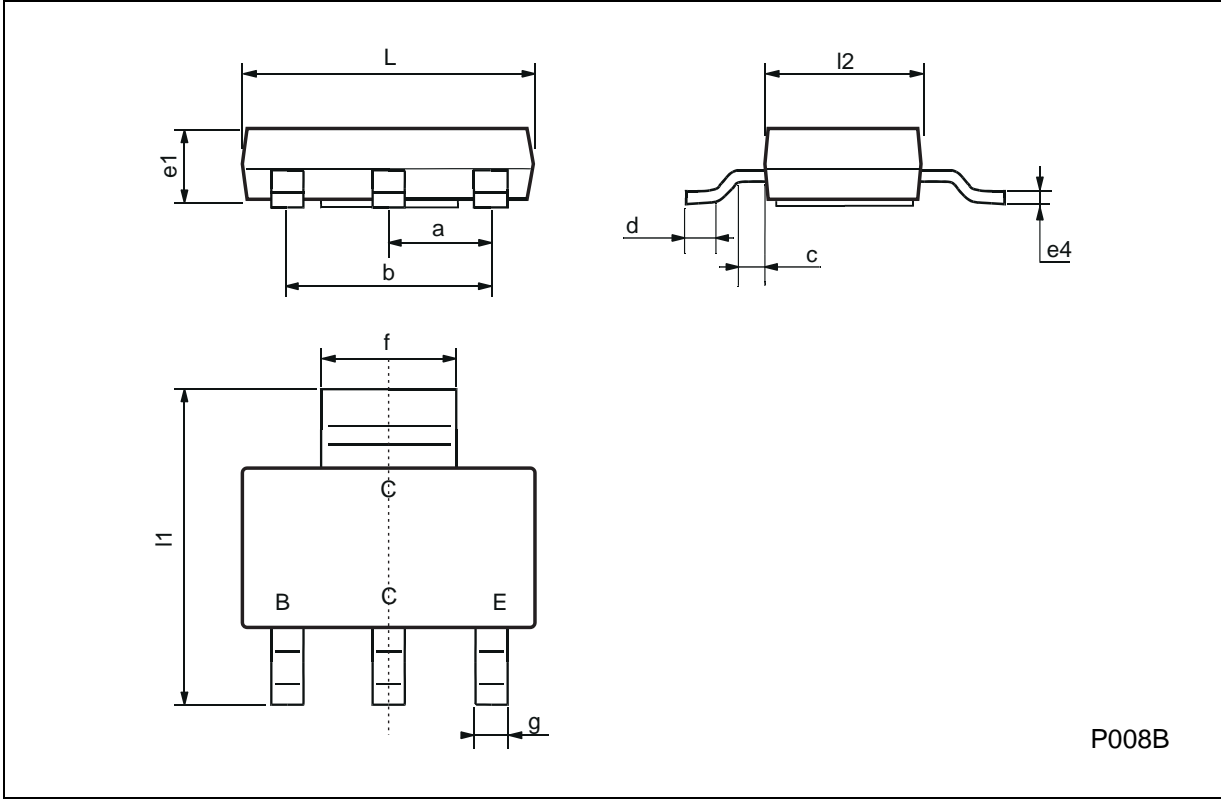
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
h_{fe} **	Small Signal Current Gain	$I_C = 1\text{ mA}$ $V_{CE} = 10\text{ V}$ $f = 1\text{ KHz}$ $I_C = 10\text{ mA}$ $V_{CE} = 10\text{ V}$ $f = 1\text{ KHz}$	50 75		300 375	$K\Omega$
h_{ie} **	Input Impedance	$I_C = 1\text{ mA}$ $V_{CE} = 10\text{ V}$ $f = 1\text{ KHz}$ $I_C = 10\text{ mA}$ $V_{CE} = 10\text{ V}$ $f = 1\text{ KHz}$	2 0.25		8 1.25	
h_{re} **	Reverse Voltage Ratio	$I_C = 1\text{ mA}$ $V_{CE} = 10\text{ V}$ $f = 1\text{ KHz}$ $I_C = 10\text{ mA}$ $V_{CE} = 10\text{ V}$ $f = 1\text{ KHz}$			8 4	10^{-4}
h_{oe} **	Output Impedance	$I_C = 1\text{ mA}$ $V_{CE} = 10\text{ V}$ $f = 1\text{ KHz}$ $I_C = 10\text{ mA}$ $V_{CE} = 10\text{ V}$ $f = 1\text{ KHz}$	5 25		35 375	S
f_T	Transition Frequency	$I_C = 10\text{ mA}$ $V_{CE} = 10\text{ V}$ $f = 100\text{ MHz}$ for STZT2222 for STZT2222A	250 300			MHz 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	$I_C = 0$ $V_{EB} = 0.5\text{ V}$ $f = 1\text{ MHz}$ for STZT2222 for STZT2222A			30 25	pF pF
NF	Noise Figure	$f = 1\text{ KHz}$ $\Delta F = 200\text{ Hz}$ $R_G = 1K\Omega$ $I_C = 0.1\text{ mA}$ $V_{CE} = 10\text{ V}$			4	dB
t_d	Delay Time	$I_C = 150\text{ mA}$ $I_{C1} = 15\text{ mA}$			10	ns
t_r	Rise Time	$V_{BE} = -0.5\text{ V}$			25	ns
t_s	Storage Time	$I_C = 150\text{ mA}$ $I_{C1} = 15\text{ mA}$			225	ns
t_f	Fall Time	$I_{B2} = 15\text{ mA}$			60	ns

* Pulsed: Pulse duration = 300 μs , duty cycle $\leq 1.5\%$

** Only for STZT2222A

SOT223 MECHANICAL DATA

DIM.	mm			mils		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
a	2.27	2.3	2.33	89.4	90.6	91.7
b	4.57	4.6	4.63	179.9	181.1	182.3
c	0.2	0.4	0.6	7.9	15.7	23.6
d	0.63	0.65	0.67	24.8	25.6	26.4
e1	1.5	1.6	1.7	59.1	63	66.9
e4			0.32			12.6
f	2.9	3	3.1	114.2	118.1	122.1
g	0.67	0.7	0.73	26.4	27.6	28.7
l1	6.7	7	7.3	263.8	275.6	287.4
l2	3.5	3.5	3.7	137.8	137.8	145.7
L	6.3	6.5	6.7	248	255.9	263.8



Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics 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 SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1995 SGS-THOMSON Microelectronics - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A