SPATIAL, STEREO AND PSEUDO-STEREO SOUND CIRCUIT

The TDA3810 integrated circuit provides spatial, stereo and pseudo-stereo sound for radio and television equipment.

Features

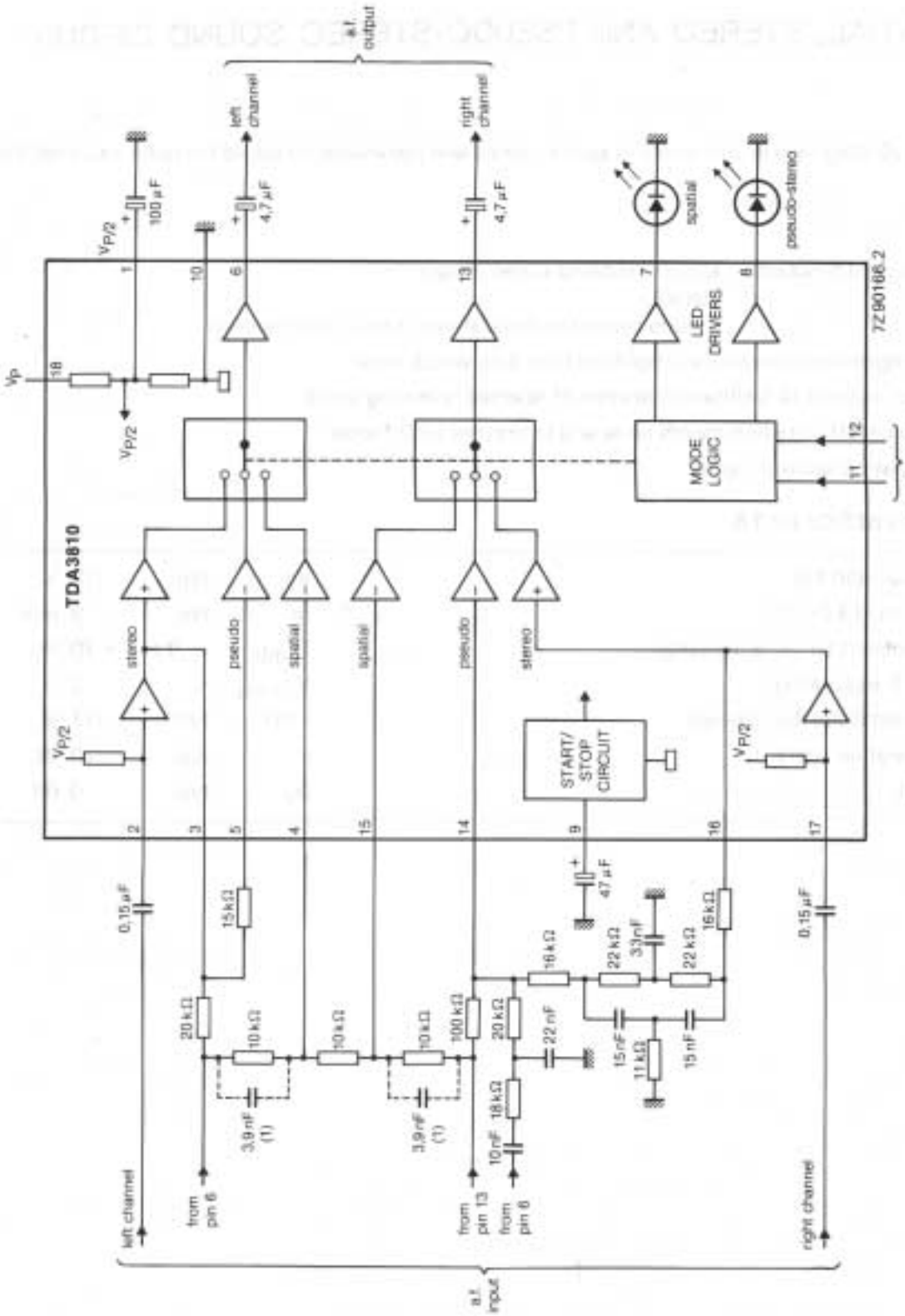
- Three switched functions: spatial (widened stereo image)
  stereo
  pseudo-stereo (artificial stereo from a mono source)
- Offset compensated operational amplifiers to reduce switch noise
- LED driver outputs to facilitate indication of selected operating mode
- Start/stop circuit to reduce switch noise and to prevent LED-flicker
- TTL-compatible control inputs

QUICK REFERENCE DATA

Supply voltage (pin 18)	V_P	typ.	12 V
Supply current (LEDs off)	I_P	typ.	6 mA
Operating ambient temperature range	T_{amb}	0 to	+ 70 °C
Input signal (r.m.s. value)	$V_{i(rms)}$	<	2 V
Total harmonic distortion (stereo)	THD	typ.	0,1 %
Channel separation (stereo)	α	typ.	70 dB
Gain (stereo)	G_v	typ.	0 dB

PACKAGE OUTLINE

18-lead DIL; plastic (SOT102).



(1) Used in spatial mode for correction of high frequency only (optimal performance).

Fig. 1 Block diagram/test circuit showing external components; for control inputs to pins 11 and 12 see truth table.

RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

Supply voltage (pin 18)	V_P	max.	18 V
Storage temperature range	T_{stg}		−25 to + 150 °C
Operating ambient temperature range	T_{amb}		0 to + 70 °C

THERMAL RESISTANCE

From crystal to ambient	$R_{th\ cr\text{-}a}$	=	80 K/W

CHARACTERISTICS

V_P = 12 V; T_{amb} = 25 °C; test circuit Fig. 1 stereo mode (pin 11 to ground) unless otherwise specified. Output load: $R_{6\text{-}10,\ 13\text{-}10} \geqslant 4{,}7$ kΩ; $C_{6\text{-}10,\ 13\text{-}10} \leqslant 150$ pF.

parameter	symbol	min.	typ.	max.	unit
Supply voltage range (pin 18)	V_P	4,5	–	16,5	V
Supply current	I_P	–	6	12	mA
Reference voltage	V_S	5,3	6	6,7	V
Input voltage (pin 2 or 17) THD = 0,2% (stereo mode)	$V_{i(rms)}$	–	–	2	V
Input resistance (pin 2 or 17)	R_i	50	75	–	kΩ
Voltage gain V_o/V_i	G_v	–	0	–	dB
Channel separation (R/L)	α	60	70	–	dB
Total harmonic distortion f = 40 to 16 000 Hz; $V_{o(rms)}$ = 1 V	THD	–	0,1	–	%
Power supply ripple rejection	RR	–	50	–	dB
Noise output voltage (unweighted) left and right output	$V_{n(rms)}$	–	10	–	μV
SPATIAL MODE (pins 11 and 12 HIGH)					
Antiphase crosstalk	α	–	50	–	%
Voltage gain	G_v	1,4	2,4	3,4	dB

PSEUDO-STEREO MODE

The quality and strength of the pseudo-stereo effect is determined by external filter components.