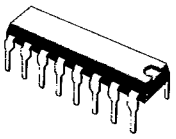
SGS-THOMSON MICROELECTRONICS

TDA7230A

STEREO DECODER AND HEADPHONE AMPLIFIER

- OPERATING SUPPLY VOLTAGE RANGE: 1.8 to 6V
- LED DRIVING FOR STEREO INDICATION
- STEREO/MONO SWITCH
- ONLY OSCILLATOR FREQUENCY ADJUSTMENT NECESSARY
- LOW DISTORTION AND LOW NOISE
- VERY LOW POP ON/OFF NOISE
- FEW EXTERNAL COMPONENTS
- SOFT CLIPPING

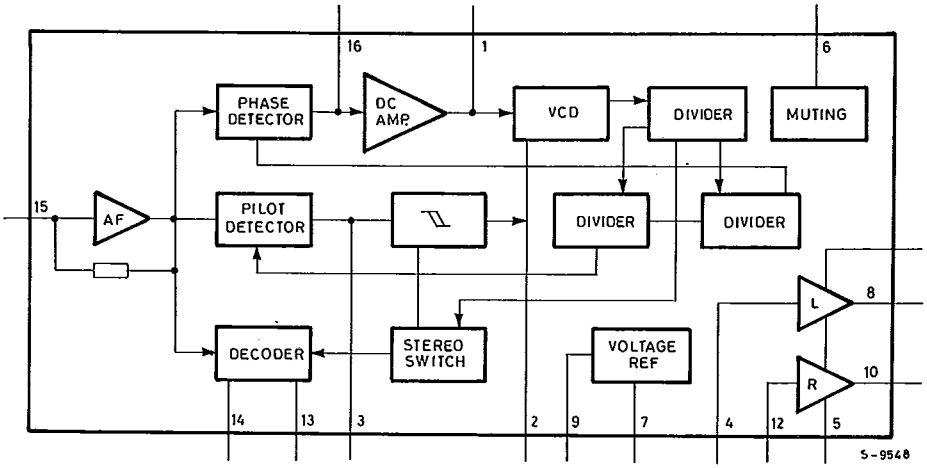
The TDA7230A is a monolithic integrated circuit in 16 pin plastic package designed for stereo decoder and headphone amplifier applications in portable radio.



DIP-16 Plastic (0.4)

ORDER CODE: TDA 7230A

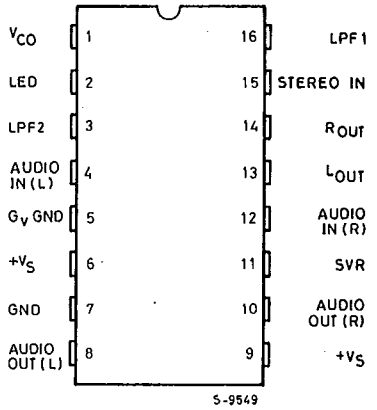
BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

V_s	Supply voltage	9	V
I_L	LED current	8	mA
I_O	Peak output current	200	mA
P_{tot}	Total power dissipation at T_{amb} = 70°C	1	W

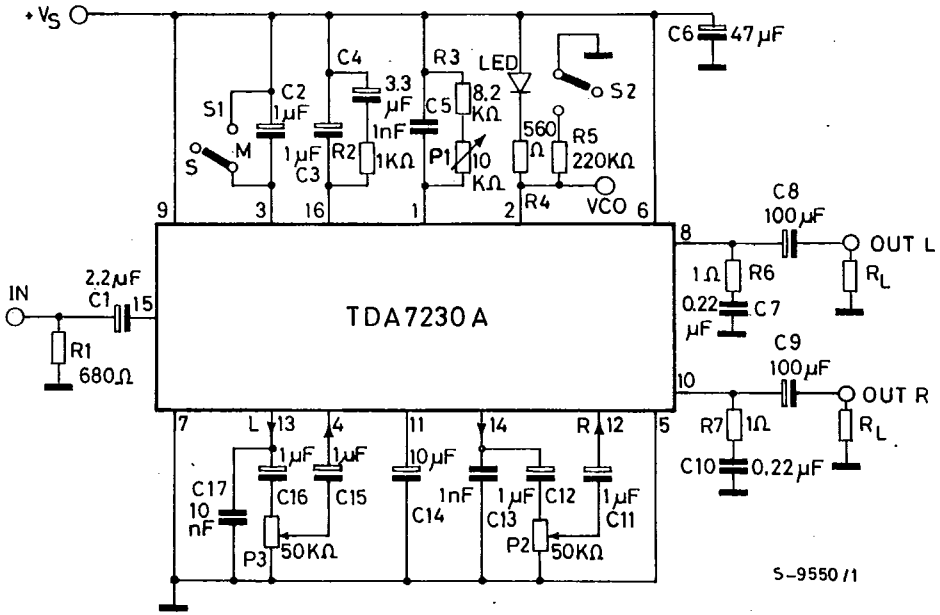
CONNECTION DIAGRAM



THERMAL DATA

$R_{th\ j\text{-}amb}$	Thermal resistance junction to ambient	max	80	°C/W

TEST CIRCUIT



ELECTRICAL CHARACTERISTICS (Unless otherwise stated, T_{amb} = 25°C, V_s = 3V, f = 1 KHz)

Parameter		Test Conditions	Min.	Typ.	Max.	Unit
V_s	Supply voltage		1.8		6	V
I_s	Supply current	LED on		9.5		mA
AUDIO STEREO AMPLIFIER						
P_o	Output power	V_s = 3V, R_L = 32Ω, d = 10% V_s = 3V, R_L = 16Ω, d = 10% V_s = 1.8V, R_L = 32Ω, d = 10%	27 45 6	30 48 7		mW mW mW
d	Distortion	P_o = 10 mW, f = 1 KHz, R_L = 32Ω		0.2	1	%

ELECTRICAL CHARACTERISTICS (continued)

Parameter		Test Conditions	Min.	Typ.	Max.	Unit
G_v	Voltage gain		28	30	32	dB
R_I	Input resistance		15	20		KΩ
	Cross talk	f = 1 KHz R_s = 10 KΩ	40			dB
SVR	Supply voltage rejection	C_{14}= 10μF, R_g = 10 KΩ, f = 100 Hz		40		dB
e_N	Total input noise voltage	R_G = 10 KΩ Bandwidth: 22 Hz - 22 KHz		2	5	μV

STEREO DECODER

R_I	Input resistance		6	10		KΩ
R_o	Output resistance			5		KΩ
V_I	Max. Input signal (composite)	L + R = 90% P = 10% f_m = 1 KHz THD = 5%	200			mVrms
S_c	Channel separation	L + R = 90 mVrms f_m = 1 KHz	25	35		dB
d	Total harmonic distortion (Out pin 13, pin 14)	Mono V_I = 100 mVrms Stereo L + R = 90 mVrms f_m = 1 KHz P = 10 mVrms		0.4 0.5	1 1	%
G_v	Voltage gain	V_I = 100 mVrms	-3		+3	dB
	Channel balance	V_I = 100 mVrms	-1	0	+1	dB
	LED on	Pilot input		8	11	mVrms
	LED off			6		mVrms
	LED Hysteresis	Turn OFF from Turn ON		3		mVrms
	Capture range	P = 10 mVrms		± 3		%
S/N	Carrier leak 19 KHz 38 KHz	P = 10 mVrms L + R = 90mVrms	-25 -40	-32 -48		dB dB
S/N	Signal to noise	V_I = 100 mVrms R_G = 600Ω		82		dB

TYPICAL APPLICATION

Fig. 1 - 3V stereo AM/FM mini-radio