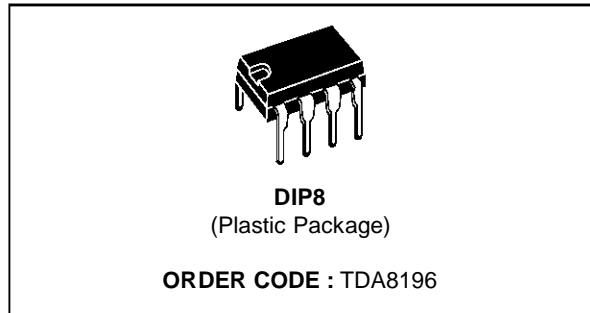


AUDIO SWITCH AND DC VOLUME CONTROL FOR TV

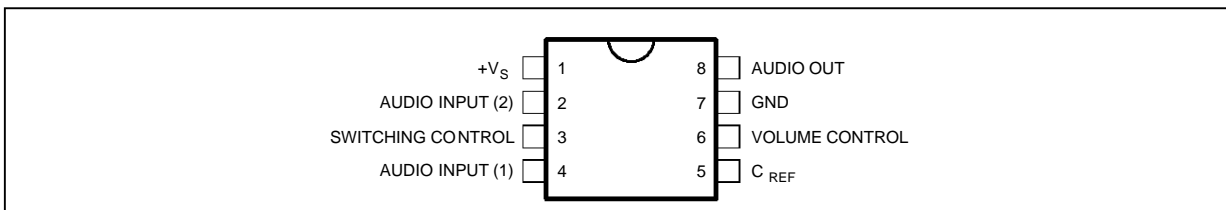
- TWO AUDIO INPUTS WITH SWITCHING FACILITIES FULLY COMPATIBLE WITH THE SCART EUROPEAN NORM EN 50049
- DC VOLUME CONTROL



DESCRIPTION

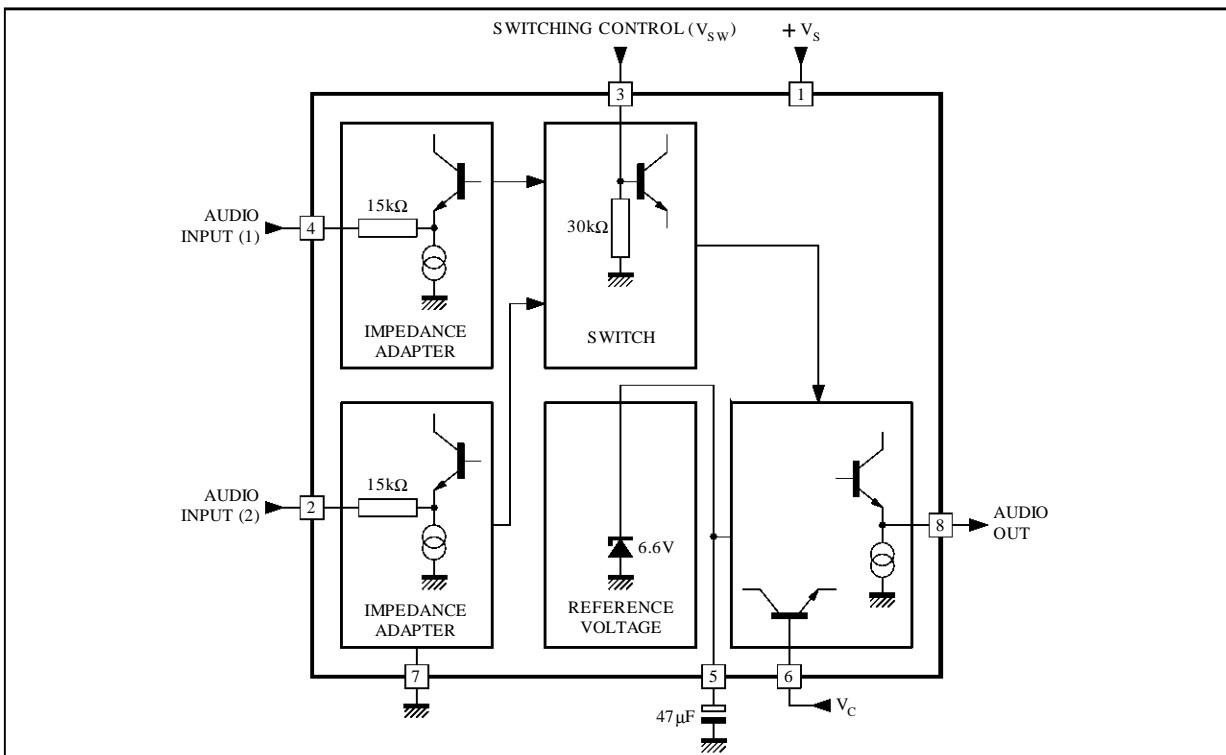
The TDA8196 is a monolithic integrated circuit in DIP8 package intended for TV applications.

PIN CONNECTION (top view)



8196-01.EPS

BLOCK DIAGRAM



8196-02.EPS

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V _S	Supply Voltage (pin 1)	16	V
T _{stg} , T _j	Storage and Junction Temperature	- 55 to 125	°C
T _{amb}	Operating Ambient Temperature	0 to 70	°C

8196-01.TBL

THERMAL DATA

Symbol	Parameter	Value	Unit
R _{thj-amb}	Thermal Resistance Junction-ambient	Max 200	°C/W

8196-02.TBL

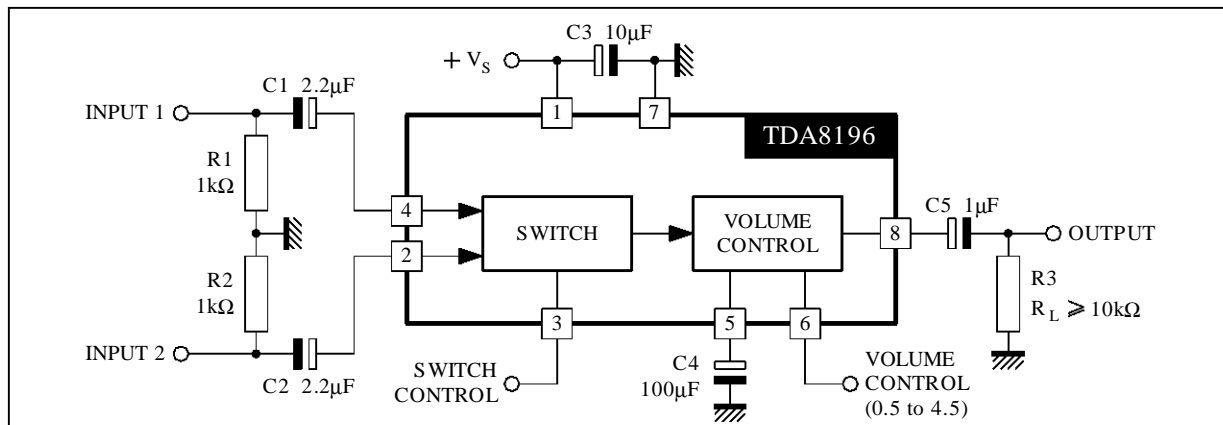
ELECTRICAL CHARACTERISTICS

(refer to the test circuit, V_S = 12V, T_{amb} = 25°C unless otherwise specified)

Symbol	Parameter	Pin	Test Conditions	Min.	Typ.	Max.	Unit
V _S	Supply Voltage	1		10.8	12	13.2	V
I _S	Supply Current	1	V _i = 0, V _C = 0.5V		12		mA
V _R	Reference Voltage	5			6.6		V
V _{SW}	Switching Voltage Audio Input 1 Audio Input 2	3		0 8		5 12	V V
R _{SW}	Switching Input Resistance	3	V _{SW} = 12V	20	30		kΩ
C _{SW}	Switching Input Capacitance	3				10	pF
C _t	Crosstalk between Switched Inputs		Selective Voltmeter (B _W = 8Hz), see Fig.1	70	90		dB
V _i	Audio Input Amplitude (1 or 2)	4 2			0.5	2	V _{RMS}
R _i	Audio Input Resistance (1 or 2)	4 2		10	13		kΩ
K _{min}	Output / Input Gain for Max Vol				0		dB
R _O	Audio Output Resistance	8			0.2	1	kΩ
K _V	Attenuation Range		Selective Voltmeter (B _W = 8Hz), see Fig.2	70	90		dB
V _C	Control Voltage Range K _V = K _{MAX} (Vol. min) K _V = K _{MIN} (Vol. max)	6			0.5 4.5		V V
THD	Distortion	8	V _i = 2 V _{RMS} @ V _C = 4.5V		0.4	1	%
En	Output Noise Level	8	DIN45405 V _C = 0.5V Weighted		40		μV _{RMS}
En	Output Noise Level	8	DIN45405 V _C = 4.5V Weighted		120		μV _{RMS}
$\frac{K_V}{\Delta T_a}$	Vol. Attenuation Thermal Drift		T _{amb} = 0 to 70°C K _V = 30dB, see Fig.3		0.04		dB/°C
SVR	Supply Voltage Rejection	8	V _C = 0.5V, f = 100Hz V _{ripple} = 1V _{PP} Selective Voltmeter (B _W = 8Hz), see Fig.4 and 5		38		dB
V _O	Output DC Shift	8	V _C = 0.5 + 4.5V, V _i = 2 V _{RMS}		0.25		V

8196-03.TBL

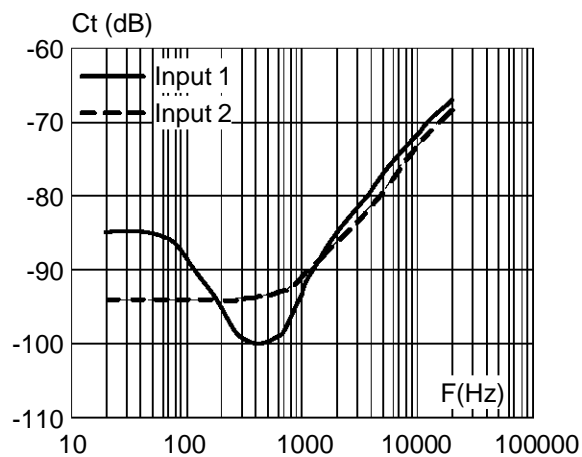
TEST CIRCUIT



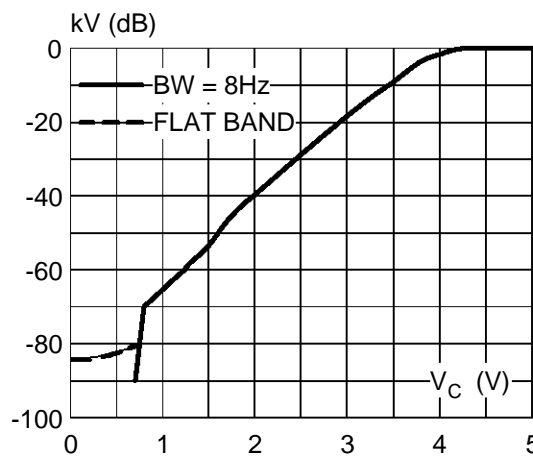
8196-03.EPS

Figure 1 : TDA8196 Crosstalk

Figure 2 : Output Attenuation versus DC Volume Control Voltage



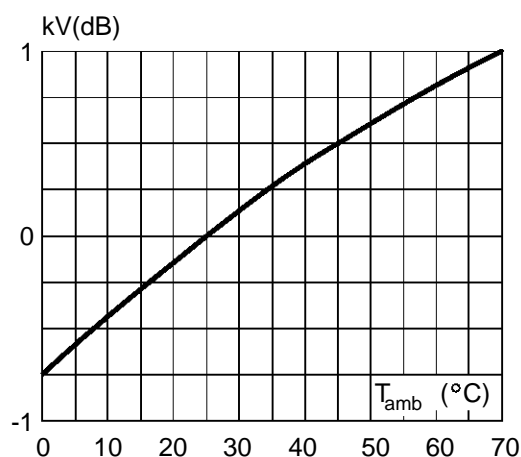
8196-04.EPS



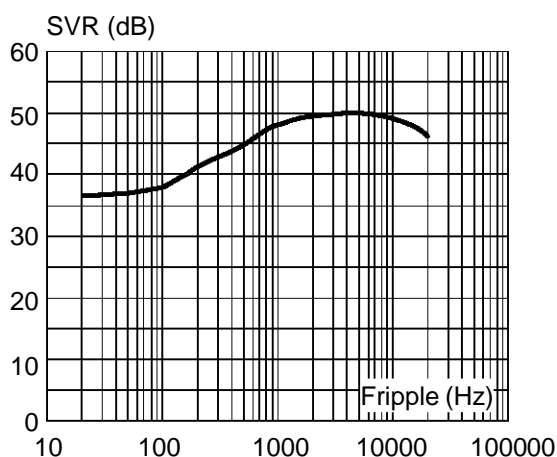
8196-05.EPS

Figure 3 : K_v Drift vs. T_{amb} Variation

Figure 4 : SVR vs. Ripple Frequency

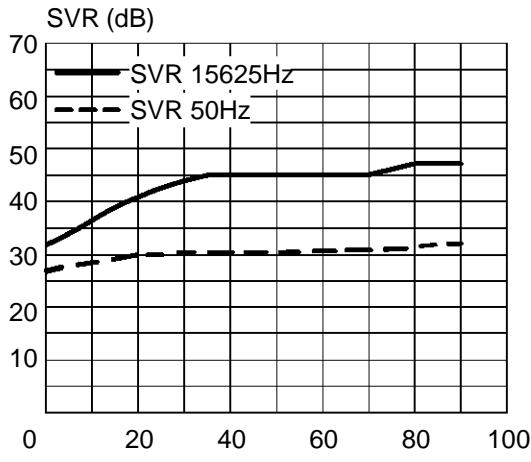


8196-06.EPS



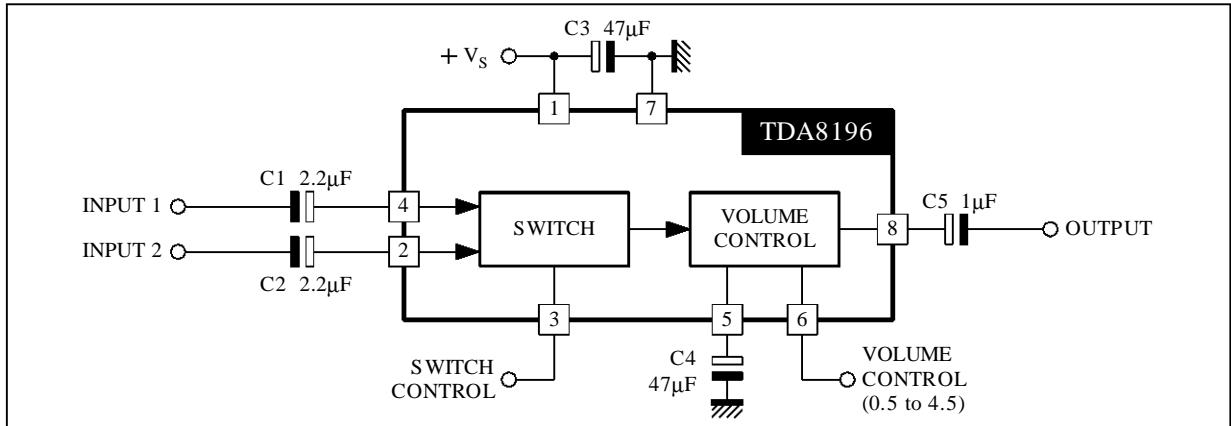
8196-07.EPS

Figure 5 : SVR vs. Volume Attenuation



8196-08.EPS

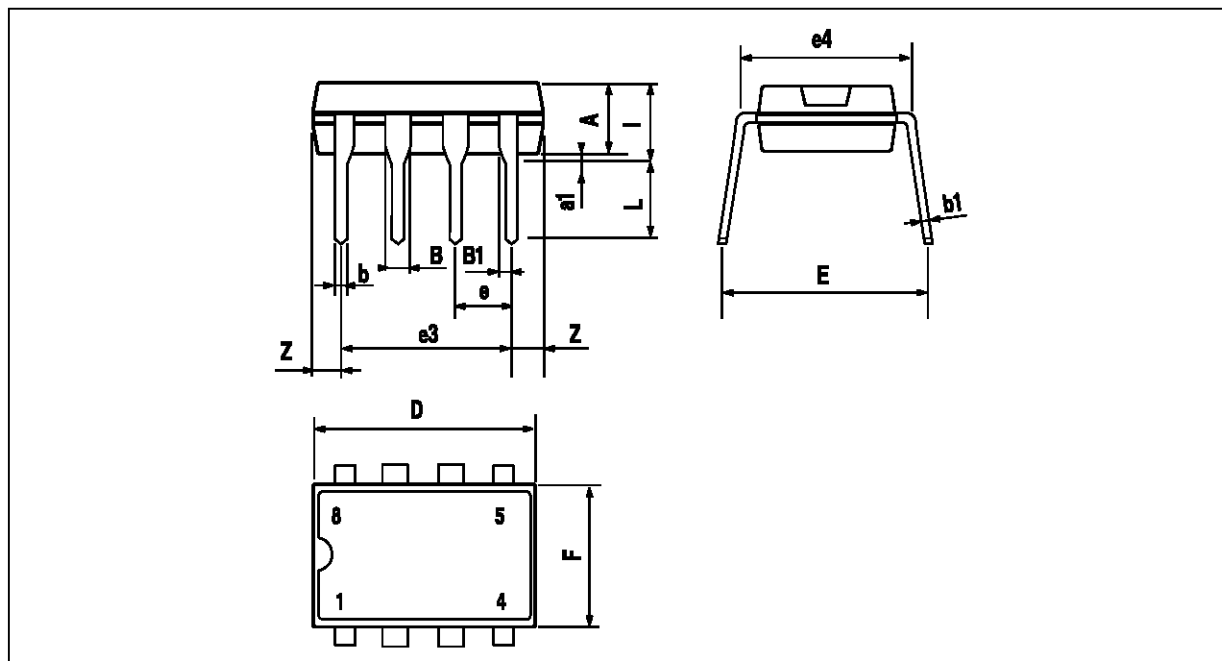
APPLICATION CIRCUIT



8196-09.EPS

PACKAGE MECHANICAL DATA

8 PINS - PLASTIC DIP



PM-DIP8-EFS

Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A		3.32			0.131	
a1	0.51			0.020		
B	1.15		1.65	0.045		0.065
b	0.356		0.55	0.014		0.022
b1	0.204		0.304	0.008		0.012
D			10.92			0.430
E	7.95		9.75	0.313		0.384
e		2.54			0.100	
e3		7.62			0.300	
e4		7.62			0.300	
F			6.6			0.260
l			5.08			0.200
L	3.18		3.81	0.125		0.150
Z			1.52			0.060

DIP8-TBL

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 licence 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.

© 1996 SGS-THOMSON Microelectronics - All Rights Reserved

Purchase of I^2C Components of SGS-THOMSON Microelectronics, conveys a license under the Philips I^2C Patent. Rights to use these components in a I^2C system, is granted provided that the system conforms to the I^2C Standard Specifications as defined by Philips.

SGS-THOMSON Microelectronics GROUP OF COMPANIES

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