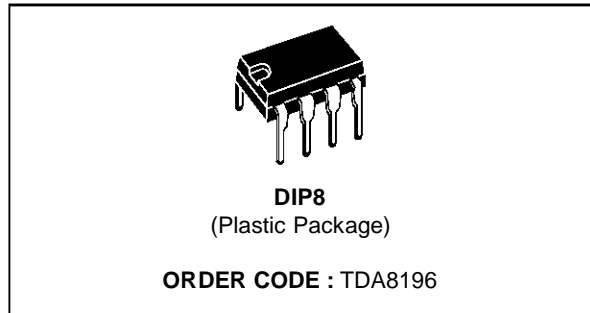


**AUDIO SWITCH AND DC VOLUME CONTROL FOR TV**

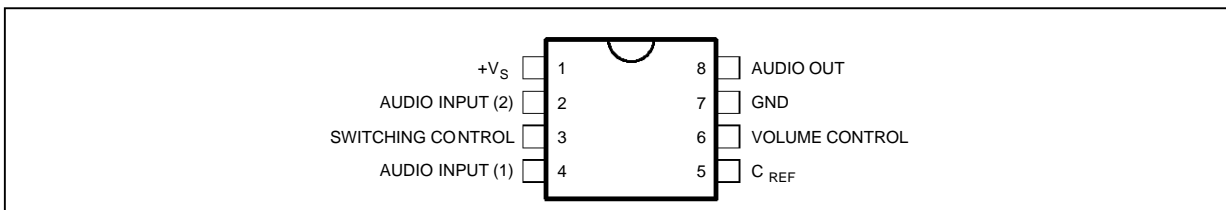
- TWO AUDIO INPUTS WITH SWITCHING FACILITIES FULLY COMPATIBLE WITH THE SCART EUROPEAN NORM EN 50049
- DC VOLUME CONTROL



**DESCRIPTION**

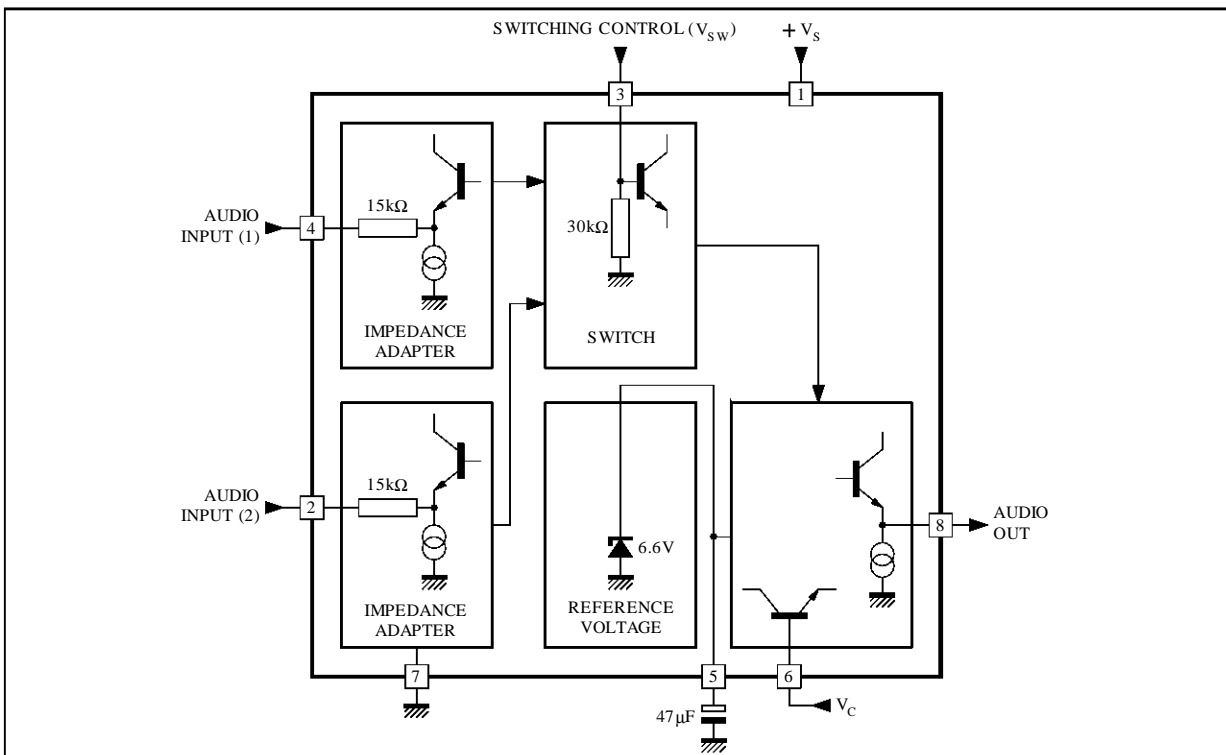
The TDA8196 is a monolithic integrated circuit in DIP8 package intended for TV applications.

**PIN CONNECTION (top view)**



8196-01.EPS

**BLOCK DIAGRAM**



8196-02.EPS

**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
V <sub>S</sub>	Supply Voltage (pin 1)	16	V
T <sub>stg</sub> , T <sub>j</sub>	Storage and Junction Temperature	- 55 to 125	°C
T <sub>amb</sub>	Operating Ambient Temperature	0 to 70	°C

8196-01.TBL

**THERMAL DATA**

Symbol	Parameter	Value	Unit
R <sub>thj-amb</sub>	Thermal Resistance Junction-ambient	Max 200	°C/W

8196-02.TBL

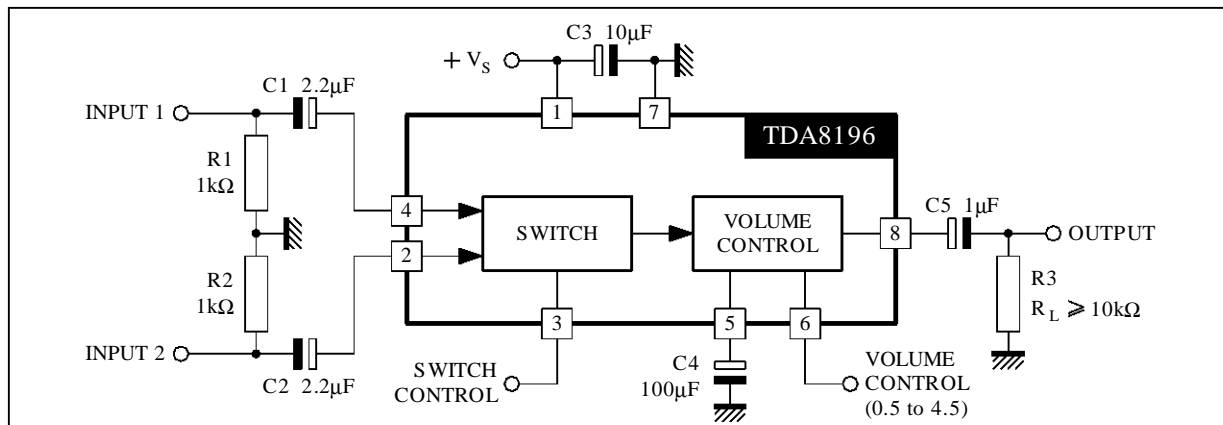
**ELECTRICAL CHARACTERISTICS**

(refer to the test circuit, V<sub>S</sub> = 12V, T<sub>amb</sub> = 25°C unless otherwise specified)

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

8196-03.TBL

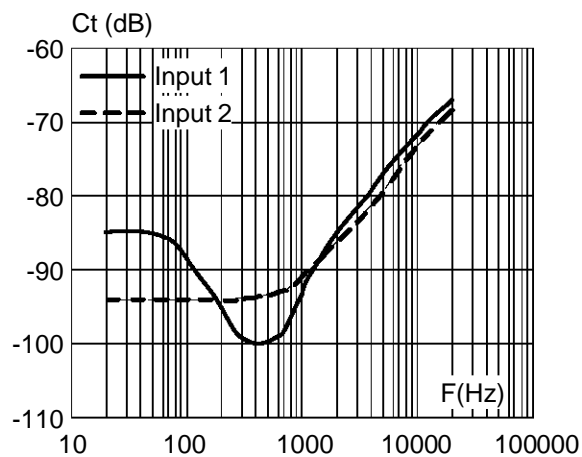
TEST CIRCUIT



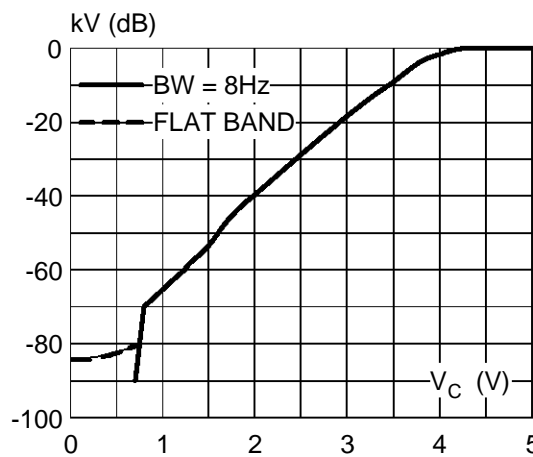
8196-03.EPS

Figure 1 : TDA8196 Crosstalk

Figure 2 : Output Attenuation versus DC Volume Control Voltage



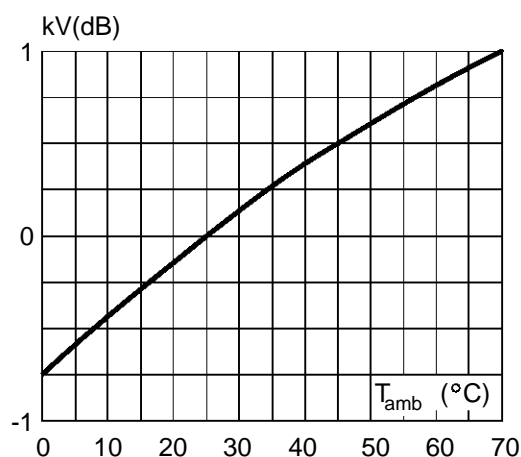
8196-04.EPS



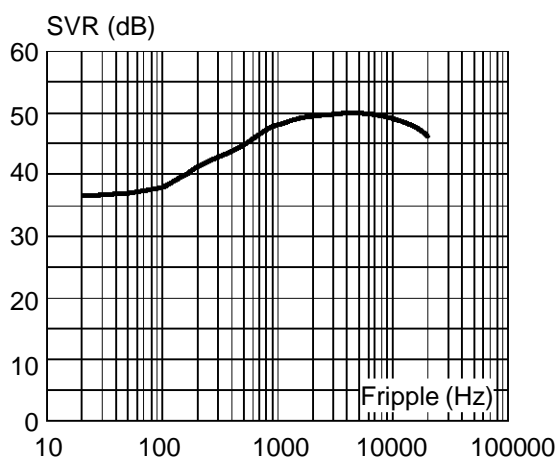
8196-05.EPS

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

Figure 4 : SVR vs. Ripple Frequency

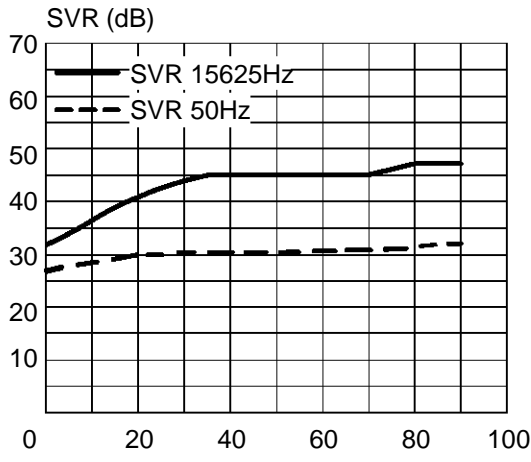


8196-06.EPS



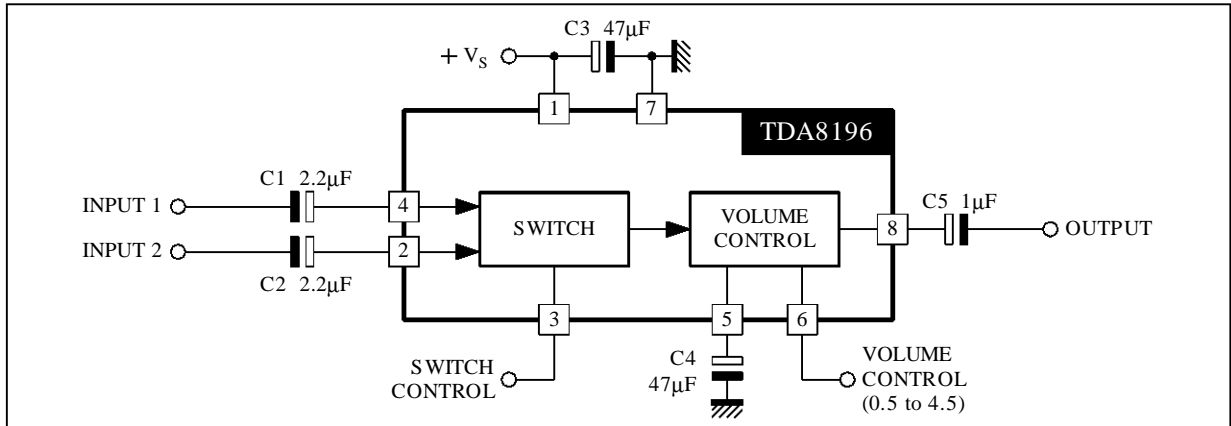
8196-07.EPS

Figure 5 : SVR vs. Volume Attenuation



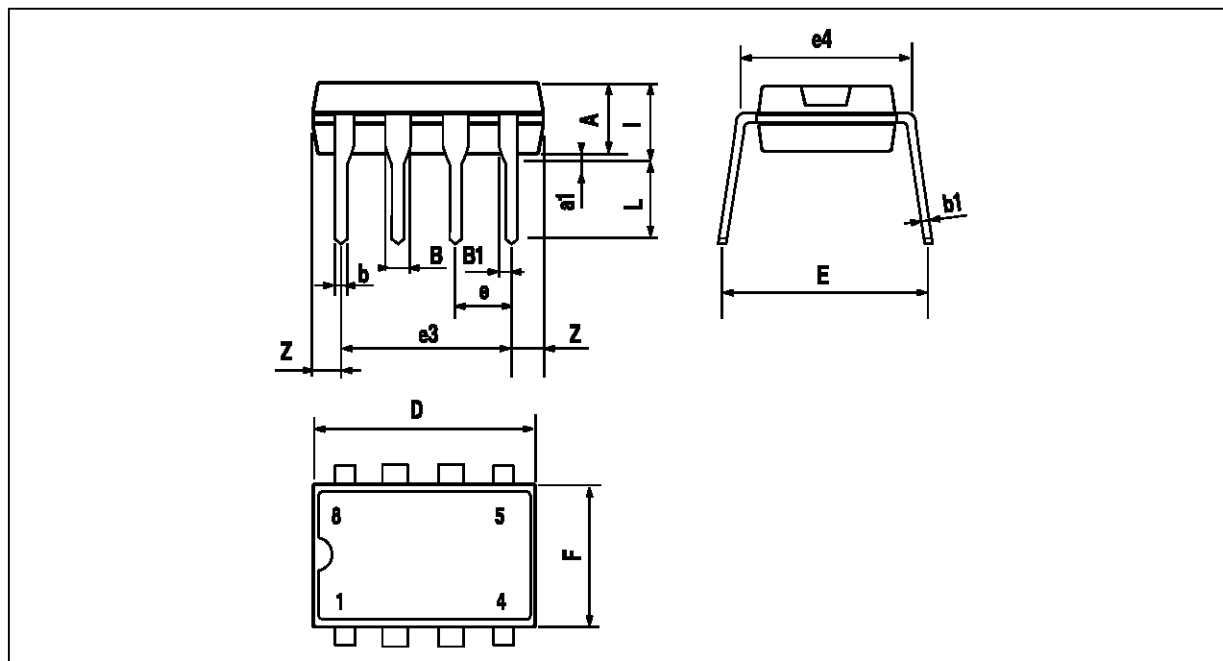
8196-08.EPS

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

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