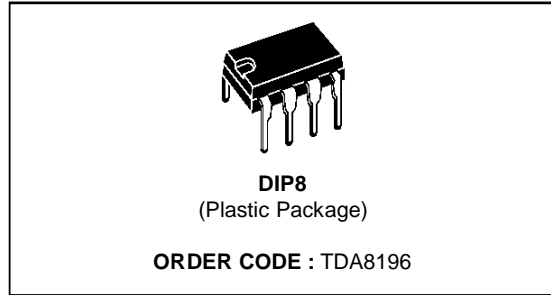


**AUDIO SWITCH AND DC VOLUME CONTROL FOR TV**

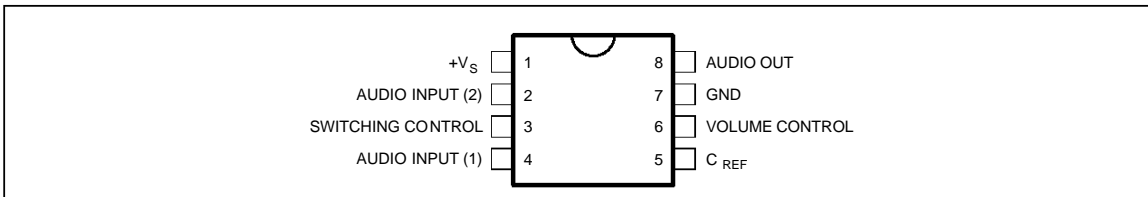
- TWO AUDIO INPUTS WITH SWITCHING FACILITIES FULLY COMPATIBLE WITH THE SCART EUROPEAN NORM EN 50049
- DC VOLUME CONTROL



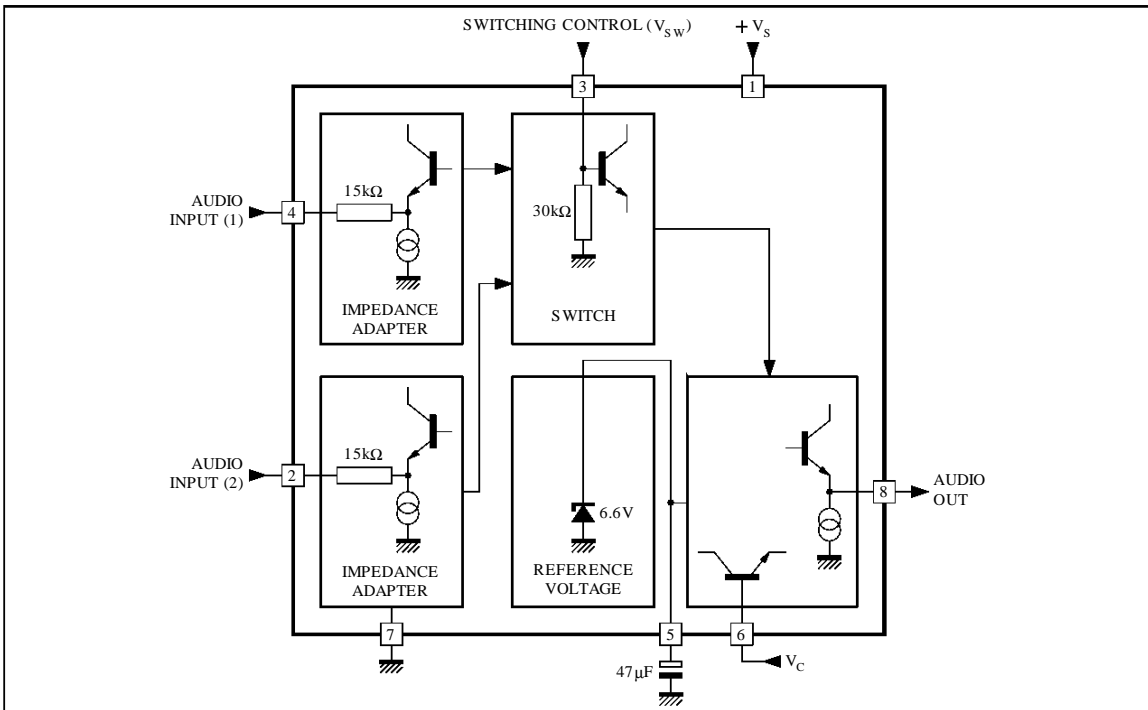
**DESCRIPTION**

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

**PIN CONNECTION (top view)**



**BLOCK DIAGRAM**



**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,  $V_s = 12V$ ,  $T_{amb} = 25^\circ C$  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	%
$E_n$	Output Noise Level	8	DIN45405 $V_C = 0.5V$ Weighted		40		$\mu V_{RMS}$
$E_n$	Output Noise Level	8	DIN45405 $V_C = 4.5V$ Weighted		120		$\mu V_{RMS}$
$\frac{K_V}{\Delta T_a}$	Vol. Attenuation Thermal Drift		$T_{amb} = 0$ to $70^\circ C$ $K_V = 30dB$ , 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

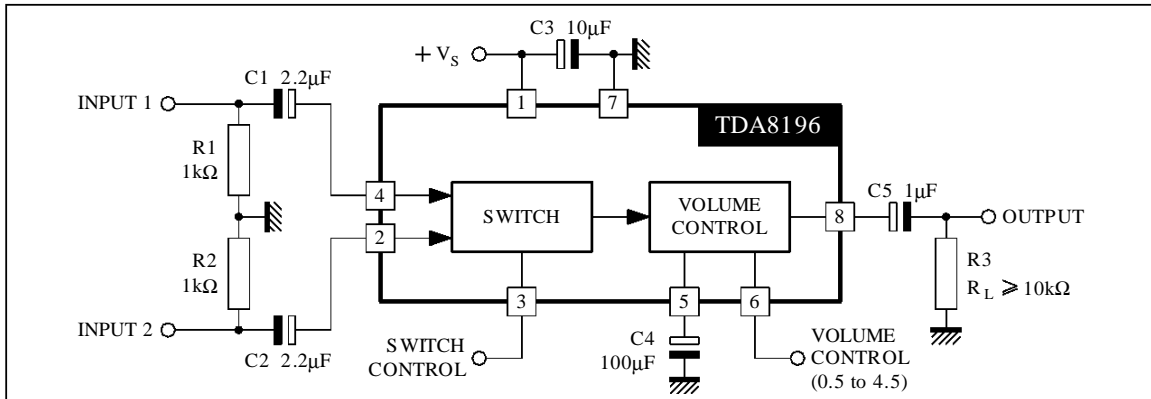


Figure 1 : TDA8196 Crosstalk

Figure 2 : Output Attenuation versus DC Volume Control Voltage

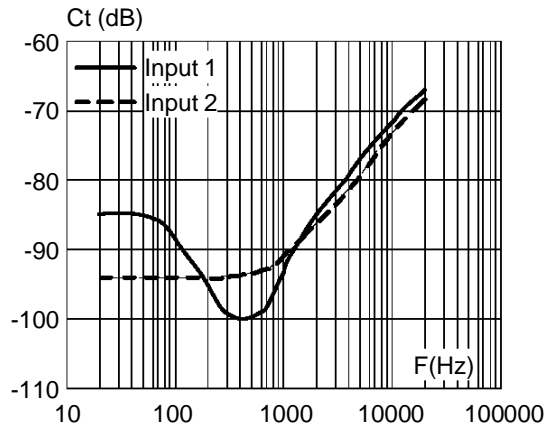


Figure 3 :  $K_v$  Drift vs.  $T_{amb}$  Variation

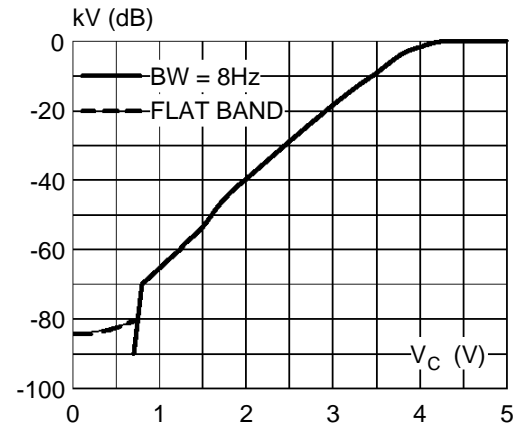
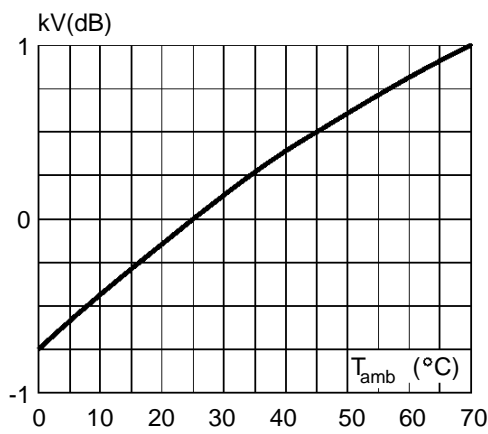


Figure 4 : SVR vs. Ripple Frequency

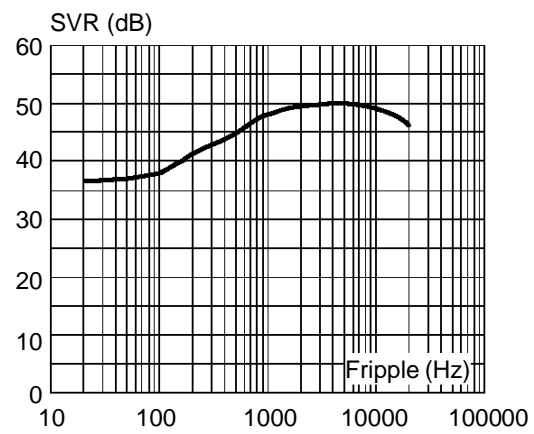
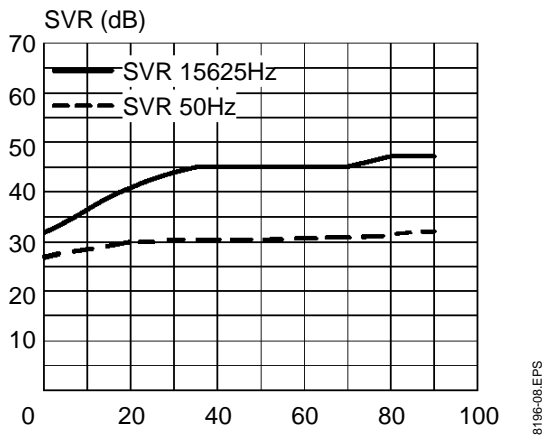
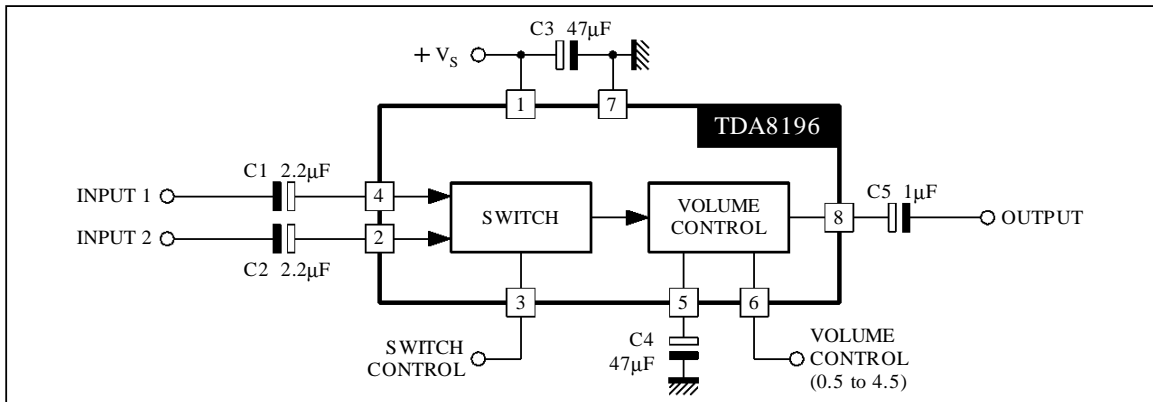


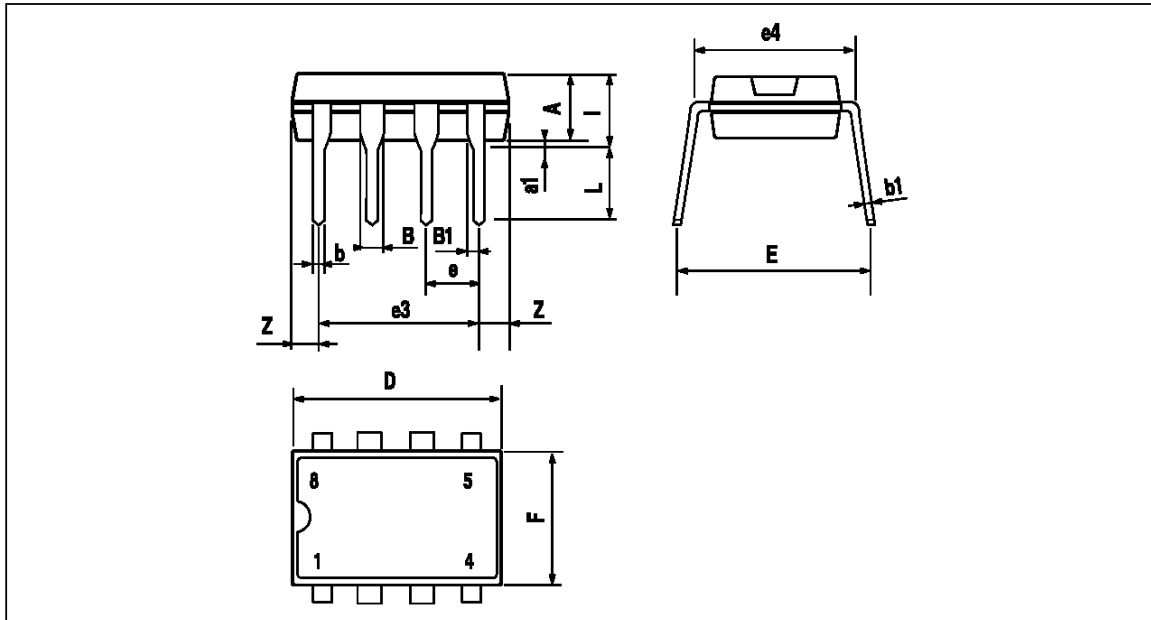
Figure 5 : SVR vs. Volume Attenuation



APPLICATION CIRCUIT



**PACKAGE MECHANICAL DATA**  
8 PINS - PLASTIC DIP



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

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