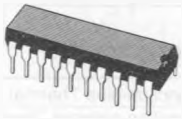
SGS-THOMSON MICROELECTRONICS

TDA8191

TV SOUND CHANNEL

- HIGH SENSITIVITY
- EXCELLENT AM REJECTION
- DC VOLUME CONTROL
- PERITELEVISION FACILITY
- 4W OUTPUT POWER
- LOW DISTORTION
- THERMAL PROTECTION
- TURN-ON AND TURN-OFF MUTING



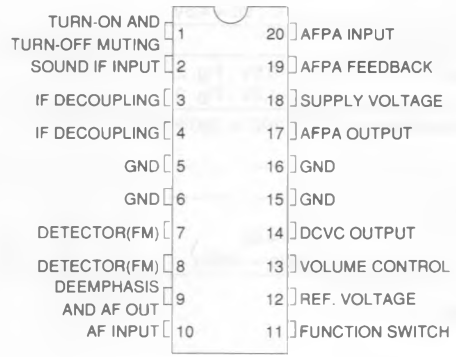
DIP20
(Plastic Package)

ORDER CODE : TDA8191

DESCRIPTION

The TDA8191 is a monolithic integrated circuit that includes all the functions needed for a complete TV sound channel. The TDA8191 is assembled in a 20 pin dual in line power package.

PIN CONNECTION



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
Vs	Supply Voltage (pin 18)	28	V
Vl	Voltage at Pin 1	± Vs	
Vi	Input Voltage (pin 2)	1	V_{PP}
Io	Output Peak Current (repetitive)	1.5	A
Io	Output Peak Current (non repetitive)	2	A
Ptot	Total Power Dissipation at Tpins = 90°C at Tamb = 70°C	4.3 1	W W
Tstg, Tj	Storage and Junction Temperature	– 40 to 150	°C

THERMAL DATA

$R_{th\ (j\text{-}pins)}$	Junction-pins Thermal Resistance	Max	14	°C/W
$R_{th\ (j\text{-}amb)}$	Junction-ambient Thermal Resistance	Max	80	°C/W

ELECTRICAL CHARACTERISTICS

(Refer to fig. 1 ; Vs = 24V ; RL = 16Ω ; pin 11 floating ; Δf = ± 50KHz ; Vi = 1mV ; fo = 5.5MHz ; fm = 1KHz ; Tamb = 25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Vs	Supply Voltage (pin 18)	Vc = 4.5V	10.8	24	27	V
Vo	Quiescent Output Voltage (pin 17)	Vc = 4.5V	11	12	13	V
V1	Pin 1 DC Voltage	Vc = 4.5V		5.3		V
Id	Quiescent Drain Current	Vc = 4.5V		35		mA
Vi	Input Limiting Voltage at Pin 2 (– 3dB)	Vo = 4VRMS		50	100	μV
V9	Recovered Audio Voltage (pin 9)	Vc = 4.5V Δf = ± 15KHz	200		400	mVRMS
R9	Deemphasis Res.	f = 20Hz to 20KHz	500	700	1000	Ω
AMR	Amplitude Modul. Rejection	m = 0.3 ; Vo = 4VRMS	45	60		dB
Ri	Input Res. (pin 2)	Δf = 0		30		KΩ
Ci	Input Capacitance (pin 2)	Δf = 0 ; Vc = 4.5V		6		pF
V12	DCVC Reference Voltage		5.6		6.2	V
Kv	Volume Attenuation	Vc = 0.5V ; Fig. 2 Vc = 4.5V ; Fig. 2	 80		1.0	dB dB
$\frac{\Delta Kv}{\Delta Tj}$	Volume Attenuation Thermal Drift	Tj = 300 to 380°K Fig. 3		– 0.05	– 0.1	dB/°C
Po	Output Power (d = 10%)		3.5	4		W
SVR	Supply Voltage Rej. (pin 17) (pin 9)	 Vc = 4.5V fripple = 100Hz	 20 50	 26 60		 dB dB
V11	Function Switch. - Television Broadc. Reproduction - Peritelevision Reproduction		 0 or Pin 11 Floating 8		 2 12	 V V

ELECTRICAL CHARACTERISTICS (continued)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
R11	Input Resistance		10			KΩ
V10	Input Voltage (d ≤ 2%)	Vo = 4VRMS ; V11 = 12V		0.5	2.0	VRMS
R10	Input Resistance	f = 20Hz to 20KHz	10			KΩ
CT	Crosstalk between Pins 9, 10		60			dB
$\frac{S+N}{N}$	Signal to Noise Ratio	Δf = 0 ; Vo = 4VRMS	60	70		dB
d	Distortion (Po = 250mV)				2	%
Δf	Deviation Sens.	Vc = 0.5V ; Vo = 4VRMS ;		± 4	± 10	KHz

Figure 1 : Test Circuit.

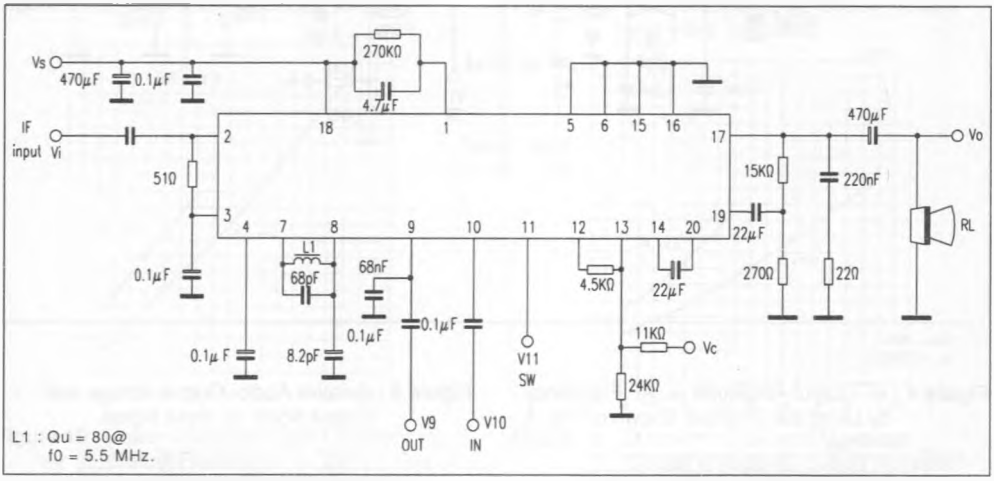


Figure 2 : Volume Attenuation vs. DC Volume Control Voltage.

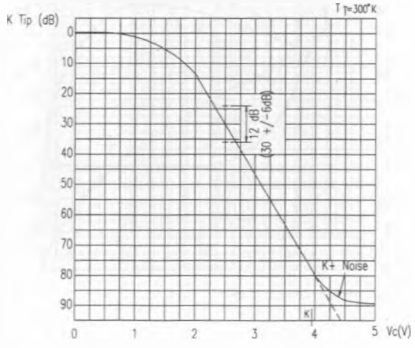
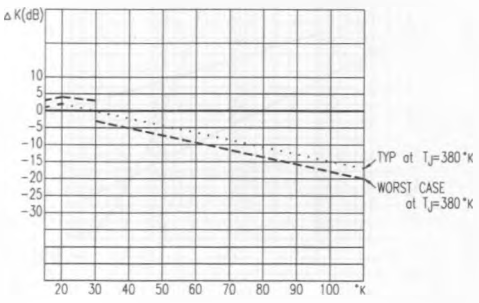
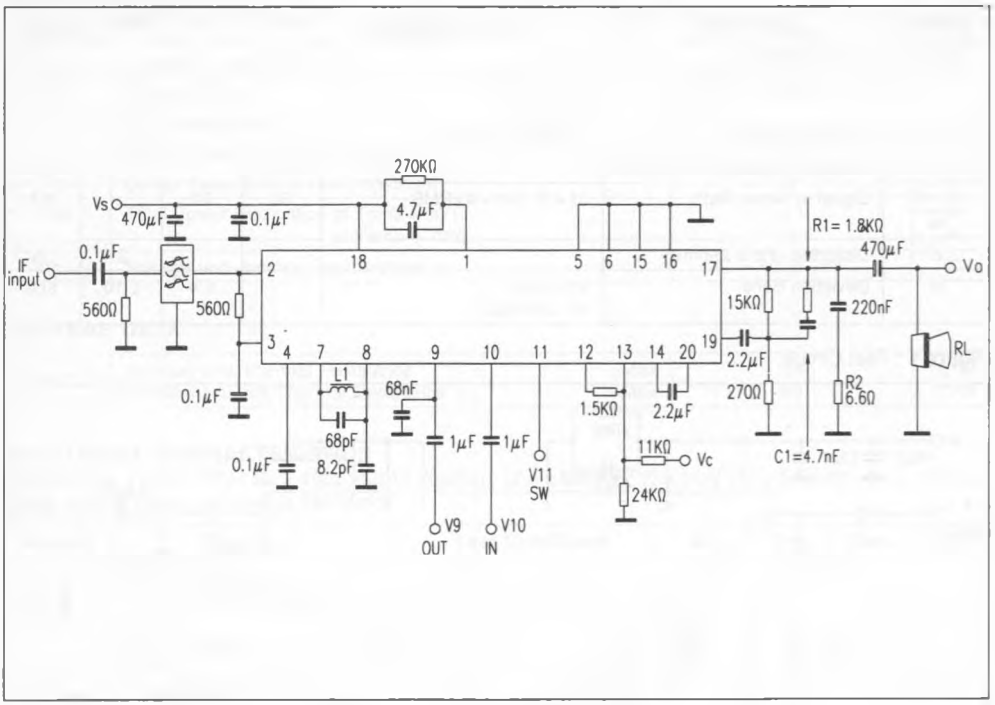


Figure 3 : Volume Attenuation Thermal Drift.



TYPICAL APPLICATION



L1 : Qu = 80e.
fo = 5.5MHz.

Figure 4 : AF Output Amplitude vs. AF Frequency by Using the Changes Shown on Fig. 4.

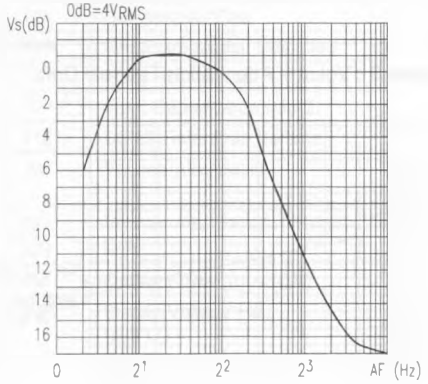


Figure 5 : Relative Audio Output Voltage and Output Noise vs. Input Signal.

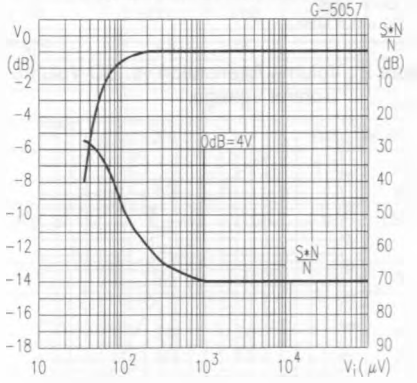


Figure 6 : Distortion vs. Output Power.

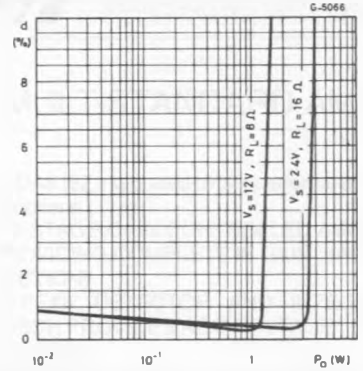


Figure 7 : Audio Amplifier Frequency Response.

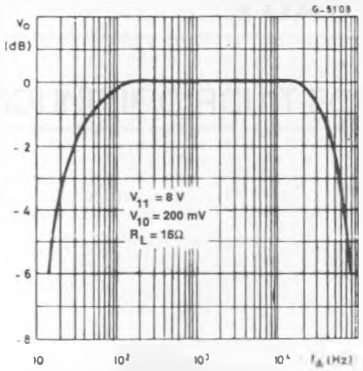


Figure 8 : Output Power vs. Supply Voltage.

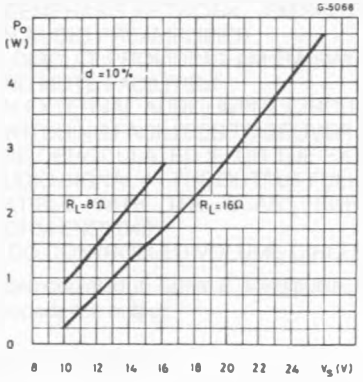


Figure 9 : Power Dissipation vs. Supply Voltage (sine wave operation).

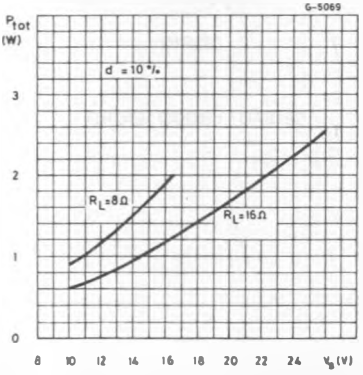


Figure 10 : Power Dissipation and Efficiency vs. Output Power.

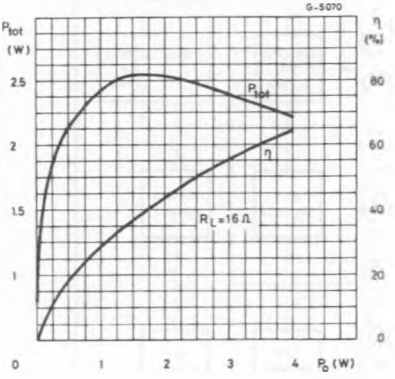


Figure 11 : Quiescent Drain and Quiescent Output Voltage vs. Supply Voltage.