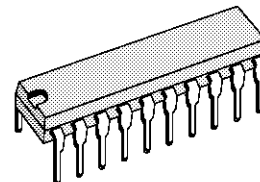


**TV SOUND CHANNEL**

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



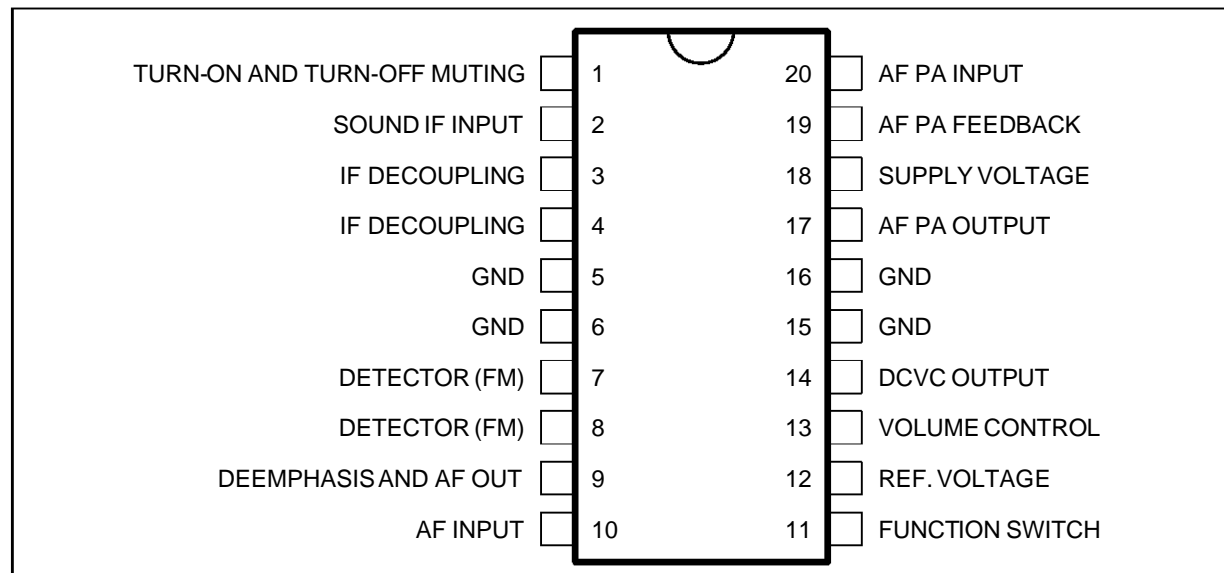
**DIP20**  
(Plastic Package)

**ORDER CODE : TDA8191**

**DESCRIPTION**

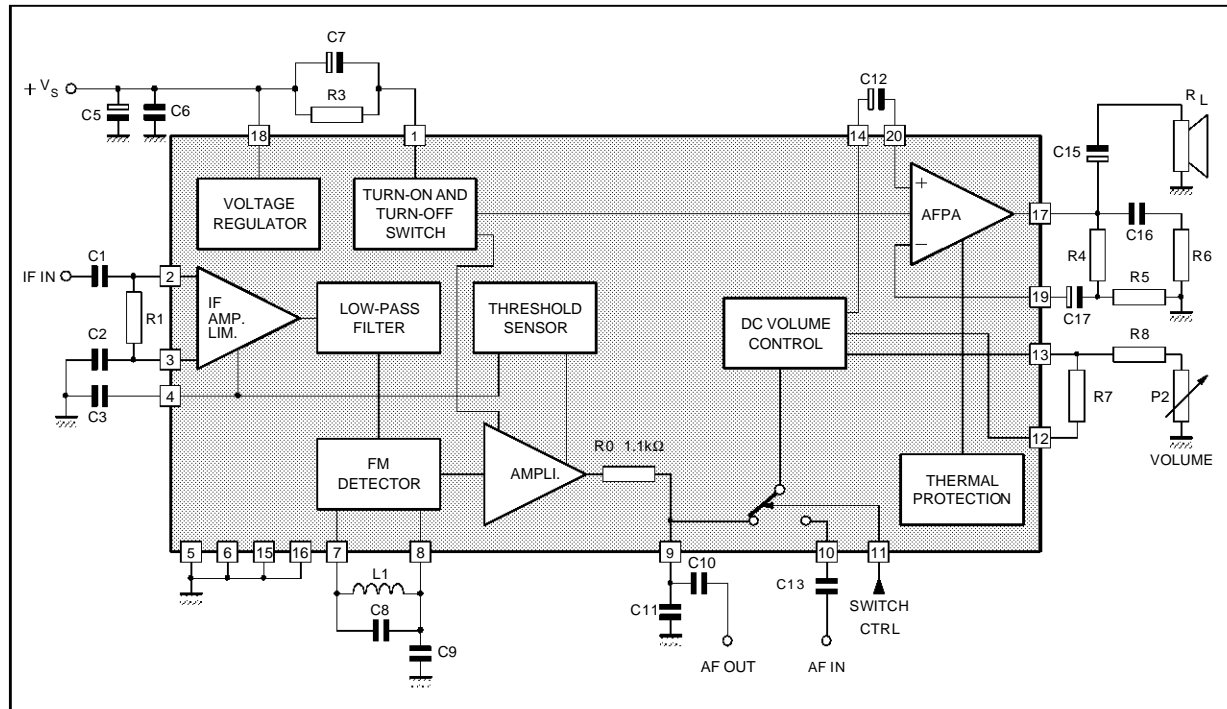
The TDA8191 is a monolithic integrated circuit that includes all the functions needed for a complete TV sound channel. The TDA8191 is assembled in a 20 pin dual in line power package.

**PIN CONNECTION**



8191-01.EPS

BLOCK DIAGRAM



8191-02.EPS

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_S$	Supply Voltage (pin 18)	28	V
$V_I$	Voltage at Pin 1	$\pm V_S$	
$V_I$	Input Voltage (pin 2)	1	V <sub>PP</sub>
$I_o$	Output Peak Current (repetitive)	1.5	A
$I_o$	Output Peak Current (non repetitive)	2	A
$P_{tot}$	Total Power Dissipation : at $T_{pins} = 90^\circ\text{C}$ at $T_{amb} = 70^\circ\text{C}$	4.3 1	W W
$T_{stg}, T_j$	Storage and Junction Temperature	- 40 to 150	$^\circ\text{C}$

8191-01.TBL

THERMAL DATA

Symbol	Parameter	Value	Unit
$R_{th(j-pins)}$	Junction-pins Thermal Resistance	Max 14	$^\circ\text{C/W}$
$R_{th(j-a)}$	Junction-ambient Thermal Resistance	Max 80	$^\circ\text{C/W}$

8191-02.TBL

ELECTRICAL CHARACTERISTICS

(Refer to fig. 1 ;  $V_S = 24\text{V}$ ,  $R_L = 16\Omega$ , Pin 11 floating,  $\Delta f = \pm 50\text{kHz}$ ,  $V_i = 1\text{mV}$ ,  $f_o = 5.5\text{MHz}$ ,  $f_m = 1\text{kHz}$ ,  $T_{amb} = 25^\circ\text{C}$  unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_S$	Supply Voltage (Pin 18)	$V_C = 4.5\text{V}$	10.8	24	27	V
$V_O$	Quiescent Output Voltage (Pin 17)	$V_C = 4.5\text{V}$	11	12	13	V
$V_I$	Pin 1 DC Voltage	$V_C = 4.5\text{V}$		5.3		V
$I_D$	Quiescent Drain Current	$V_C = 4.5\text{V}$		35		mA
$V_I$	Input Limiting Voltage at Pin 2 (- 3dB)	$V_O = 4V_{RMS}$		50	100	$\mu\text{V}$

8191-03.TBL

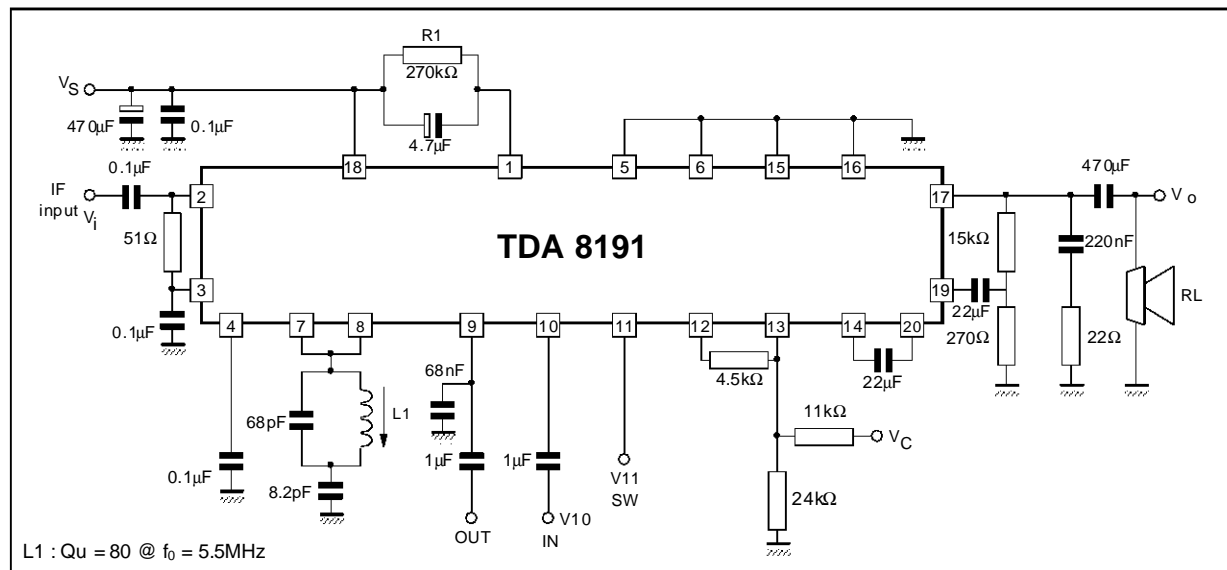
**ELECTRICAL CHARACTERISTICS** (continued)

(Refer to fig. 1 ;  $V_S = 24V$ ,  $R_L = 16\Omega$ , Pin 11 floating,  $\Delta f = \pm 50kHz$ ,  $V_i = 1mV$ ,  $f_o = 5.5MHz$ ,  $f_m = 1kHz$ ,  $T_{amb} = 25^\circ C$  unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_9$	Recovered Audio Voltage (pin 9)	$V_C = 4.5V$ , $\Delta f = \pm 15kHz$	200		400	mV <sub>RMS</sub>
$R_9$	Deemphasis Resistance	$f = 20Hz$ to $20kHz$	500	700	1000	$\Omega$
AMR	Amplitude Modul. Rejection	$m = 0.3$ , $V_O = 4V_{RMS}$	45	60		dB
$R_I$	Input Resistance (pin 2)	$\Delta f = 0$		30		k $\Omega$
$C_I$	Input Capacitance (pin 2)	$\Delta f = 0$ , $V_C = 4.5V$		6		pF
$V_{12}$	DCVC Reference Voltage		5.6		6.2	V
$K_v$	Volume Attenuation	$V_C = 0.5V$ ; Fig. 2 $V_C = 4.5V$ ; Fig. 2	80		1.0	dB dB
$\frac{\Delta K_v}{\Delta T_j}$	Volume Attenuation Thermal Drift	$T_j = 300$ to $380^\circ K$ Fig. 3		- 0.05	-0.1	dB/ $^\circ C$
$P_O$	Output Power (d = 10%)		3.5	4		W
SVR	Supply Voltage Rej. (Pin 17) (Pin 9)	$V_C = 4.5V$ $f_{ripple} = 100Hz$	20 50	26 60		dB dB
$V_{11}$	Function Switch. - Television Broadc. Reproduction  - Peritelevision Reproduction		0 8		2 12	V V
$R_{11}$	Input Resistance		10			k $\Omega$
$V_{10}$	Input Voltage (d $\leq$ 2%)	$V_O = 4V_{RMS}$ ; $V_{11} = 12V$		0.5	2.0	V <sub>RMS</sub>
$R_{10}$	Input Resistance	$f = 20Hz$ to $20kHz$	10			k $\Omega$
CT	Crosstalk between Pins 9, 10		60			dB
$\frac{S+N}{N}$	Signal to Noise Ratio	$\Delta f = 0$ ; $V_O = 4V_{RMS}$	60	70		dB
d	Distortion ( $P_O = 250mV$ )				2	%
$\Delta f$	Deviation Sens.	$V_C = 0.5V$ ; $V_O = 4V_{RMS}$		$\pm 4$	$\pm 10$	kHz

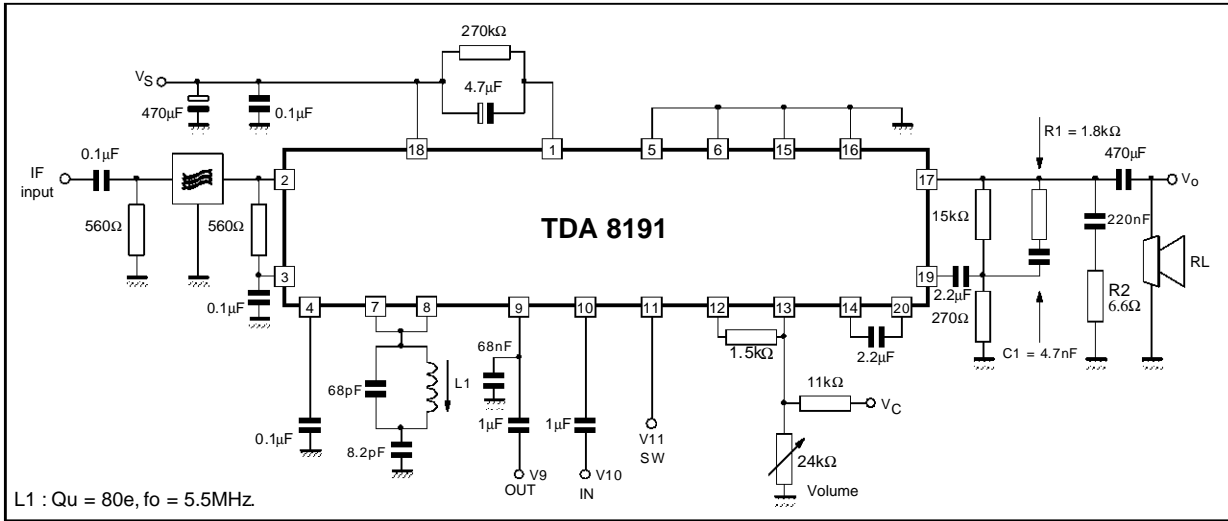
8191-04.TBL

**Figure 1 : Test Circuit**

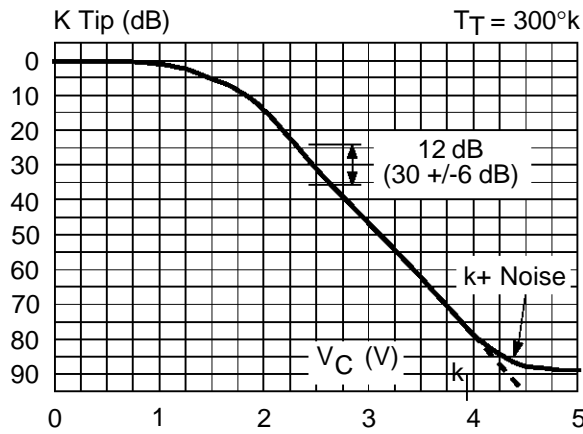


8191-03.EPS

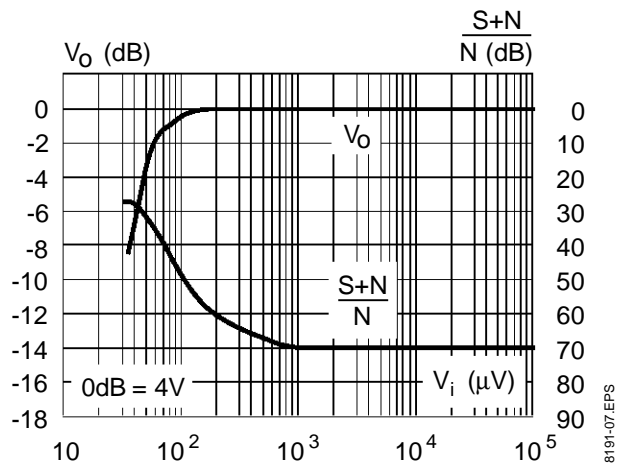
TYPICAL APPLICATION



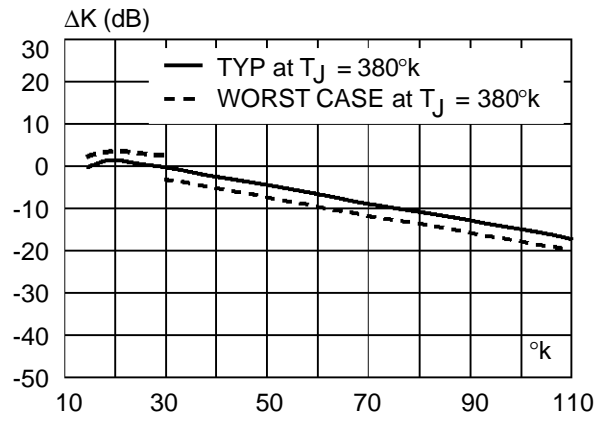
**Figure 2 :** Volume Attenuation versus DC Volume Control Voltage



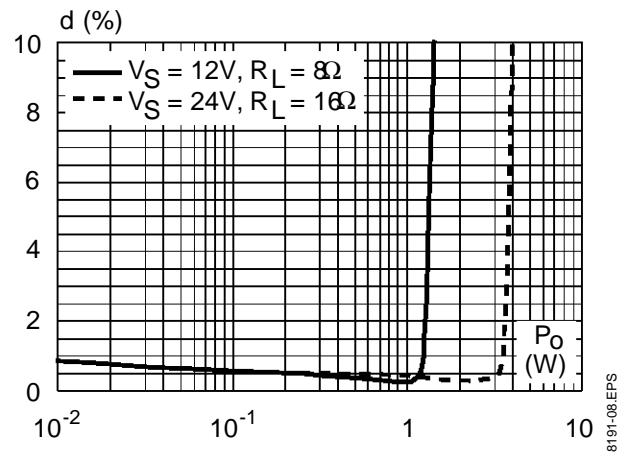
**Figure 4 :** Relative Audio Output Voltage and Output Noise versus Input Signal



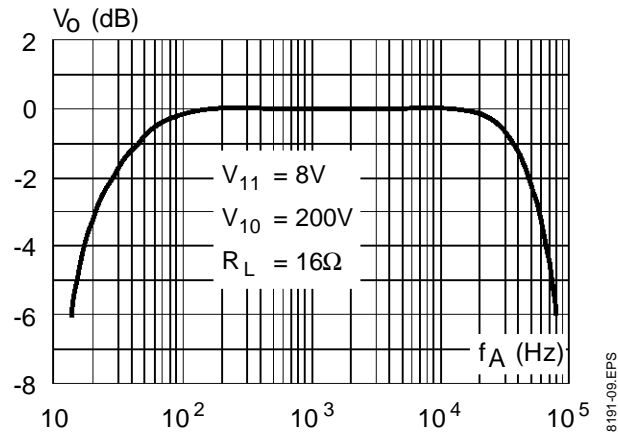
**Figure 3 :** Volume Attenuation Thermal Drift



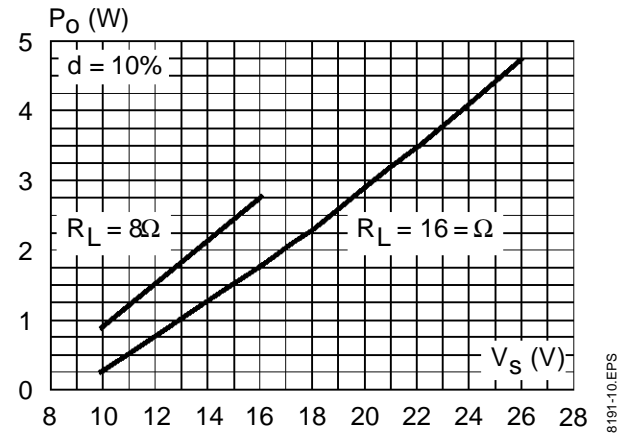
**Figure 5 :** Distortion versus Output Power



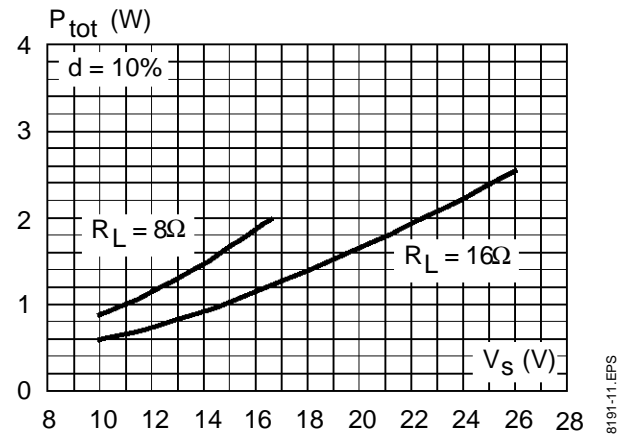
**Figure 6 :** Audio Amplifier Frequency Response



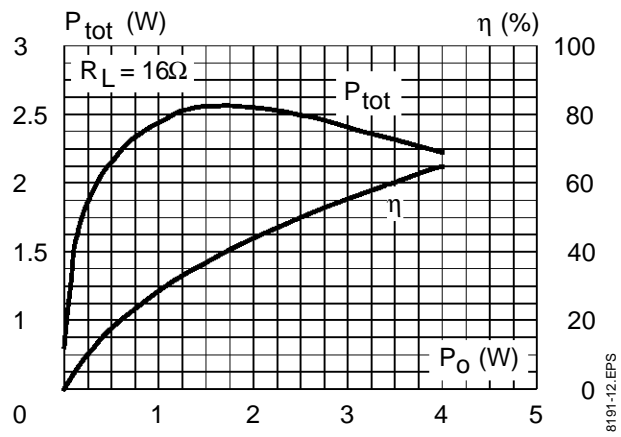
**Figure 7 :** Output Power versus Supply Voltage



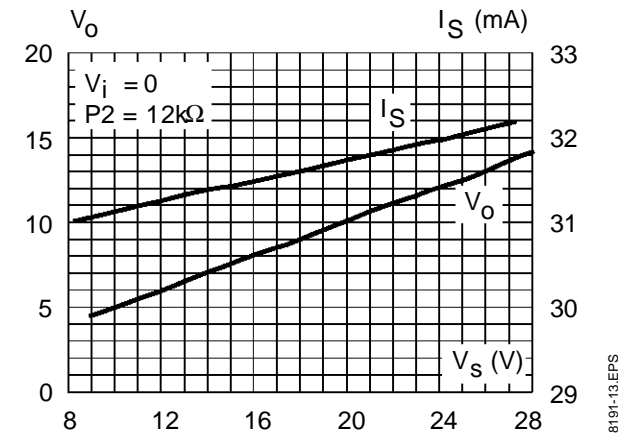
**Figure 8 :** Power Dissipation versus Supply Voltage (sine wave operation)



**Figure 9 :** Power Dissipation and Efficiency versus Output Power



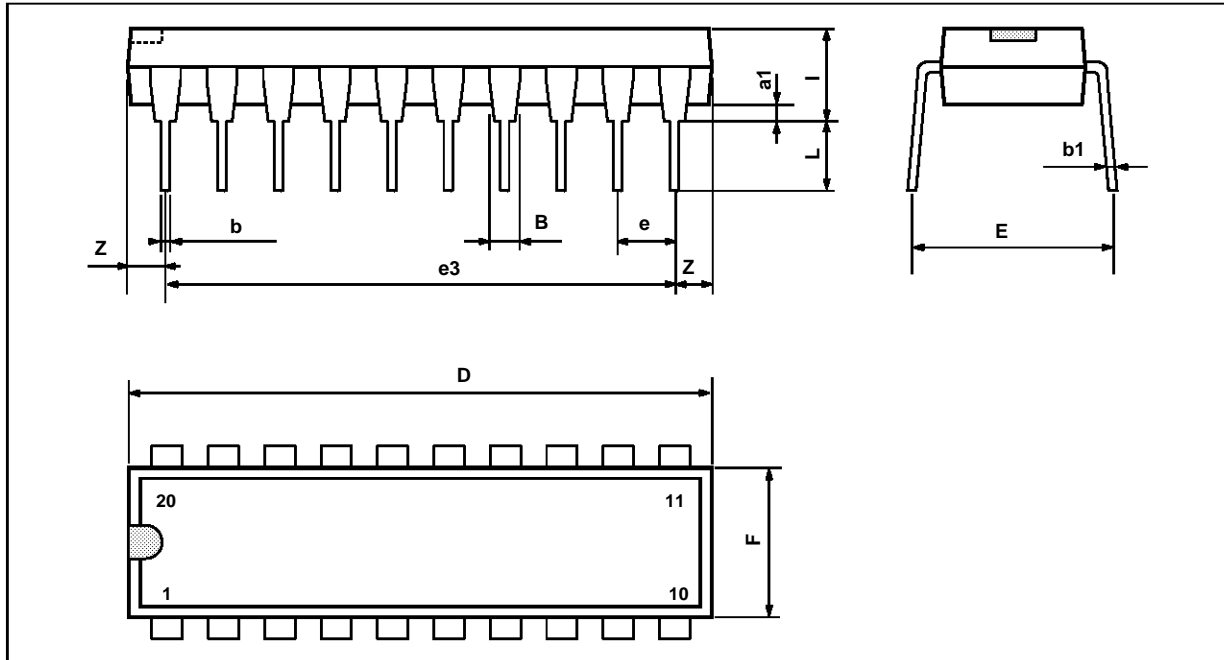
**Figure 10 :** Quiescent Drain and Quiescent Output Voltage versus Supply Voltage



# TDA8191

## PACKAGE MECHANICAL DATA

20 PINS - PLASTIC DIP



PM-DIP20.EPS

Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
a1	0.254			0.010		
B	1.39		1.65	0.055		0.065
b		0.45			0.018	
b1		0.25			0.010	
D			25.4			1.000
E		8.5			0.335	
e		2.54			0.100	
e3		22.86			0.900	
F			7.1			0.280
i			3.93			0.155
L		3.3			0.130	
Z			1.34			0.053

DIP20.TBL

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