



# THE DATASHEET OF TDA2822D





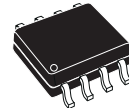
# TDA2822D

## DUAL LOW-VOLTAGE POWER AMPLIFIER

- SUPPLY VOLTAGE DOWN TO 1.8V
- LOWCROSSOVER DISTORTION
- LOW QUIESCENT CURRENT
- BRIDGE OR STEREO CONFIGURATION

### DESCRIPTION

The TDA2822D is a monolithic integrated circuit in 8 lead (SO-8) package. It is intended for use as dual audio power amplifier in portable cassette players, radios and CD players



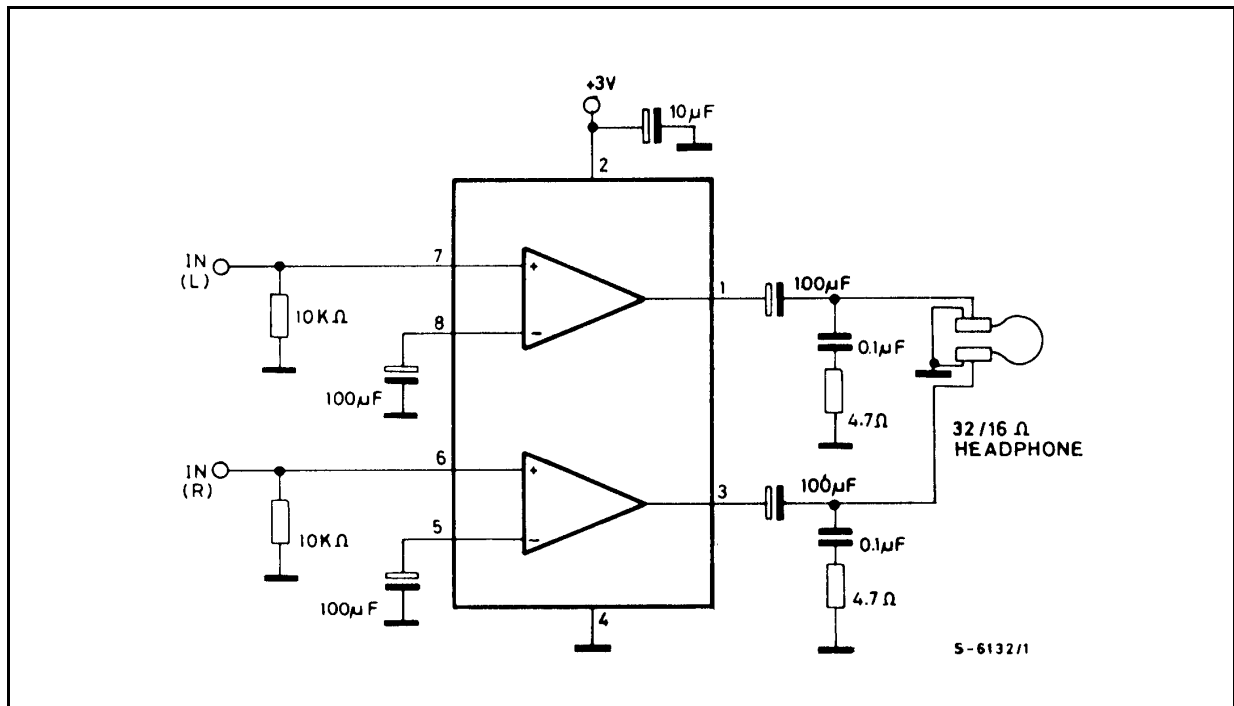
SO8

ORDERING NUMBER: TDA2822D

### ABSOLUTE MAXIMUM RATINGS

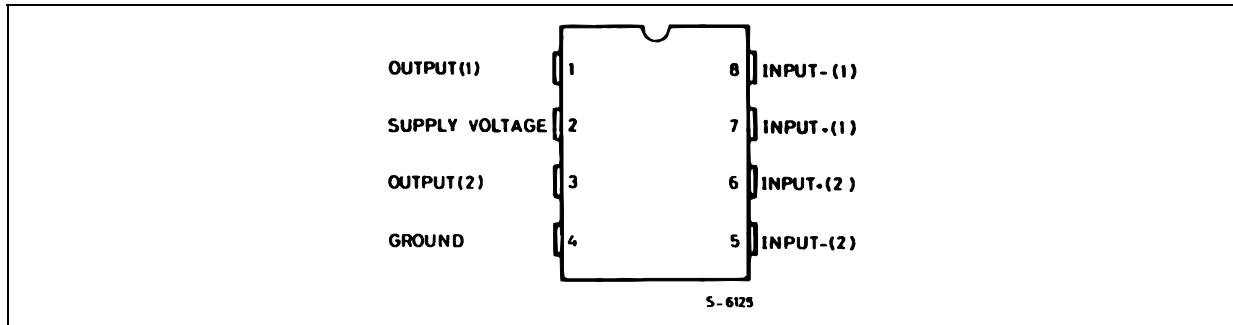
Symbol	Parameter	Value	Unit
$V_S$	Supply Voltage	15	V
$I_O$	Peak Output	1	A
$P_{tot}$	Total Power Dissipation $T_{amb} = 50^\circ\text{C}$	0.5	W
$T_{stg}, T_j$	Storage and Junction Temperature	-40 to 150	$^\circ\text{C}$

### APPLICATION CIRCUIT



# TDA2822D

## PIN CONNECTION (Top view)



## THERMAL DATA

Symbol	Description	Value	Unit
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	200 °C/W

Figure 1: Stereo Application and Test Circuit

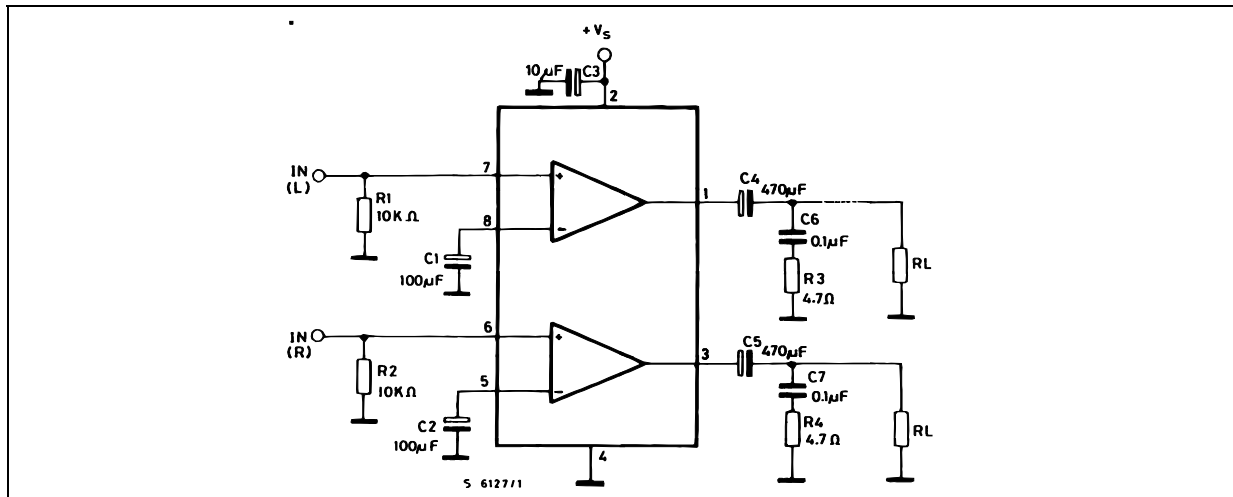
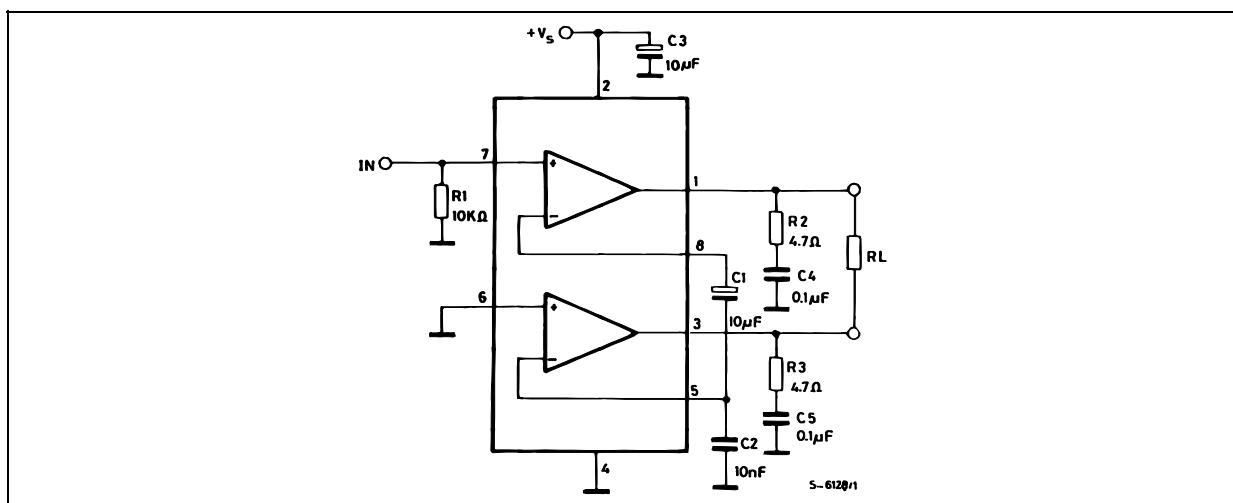


Figure 2: Bridge Application and Test Circuit



**ELECTRICAL CHARACTERISTICS** ( $V_S = 6V$ ;  $T_{amb} = 25^\circ C$ , unless otherwise specified).

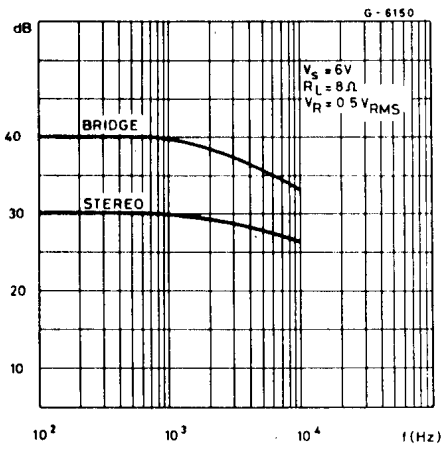
STEREO (Test circuit of fig. 1).

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
$V_S$	Supply Voltage		1.8		15	V
$I_d$	Total Quiescent Drain Current				15	mA
$V_O$	Quiescent Output Voltage			2.7		V
		$V_S = 3V$		1.2		V
$I_b$	Input Bias Current			100		nA
$P_O$	Output Power (each channel) ( $f = 1KHz$ , $d = 10\%$ )	$R_L = 32\Omega$ $V_S = 9V$ $V_S = 6V$ $V_S = 4.5V$ $V_S = 3V$ $V_S = 2V$		300 120 60 20 5		mW
		$R_L = 16\Omega$ $V_S = 6V$	170	220		mW
		$R_L = 8\Omega$ $V_S = 6V$	300	380		mW
		$R_L = 4\Omega$ $V_S = 4.5V$ $V_S = 3V$		320 110		mW mW
$d$	Distortion	$R_L = 32\Omega$ $P_O = 40mW$		0.2		%
		$R_L = 16\Omega$ $P_O = 75mW$		0.2		%
		$R_L = 8\Omega$ $P_O = 150mW$		0.2		%
$G_V$	Closed Loop Voltage Gain	$f = 1KHz$	36	39	41	dB
$\Delta G_V$	Channel Balance				$\pm 1$	dB
$R_i$	Input Resistance	$f = 1KHz$	100			K $\Omega$
$e_N$	Total Input Noise	$R_s = 10k\Omega$ $B = \text{Curve A}$		2		$\mu V$
		$R_s = 10k\Omega$ $B = 22Hz \text{ to } 22KHz$		2.5		$\mu V$
SVR	Supply Voltage Rejection	$f = 100Hz$ $C1 = C2 = 100\mu F$	24	30		dB
$C_s$	Channel Separation	$f = 1KHz$		50		dB

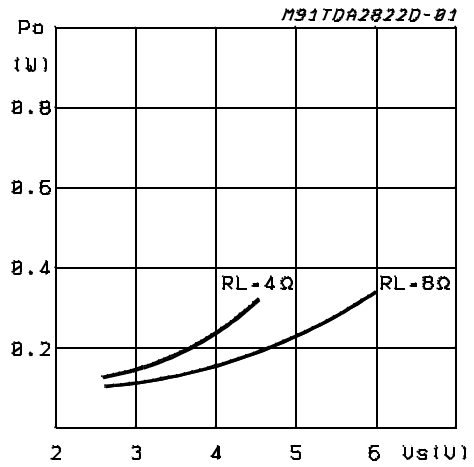
BRIDGE (Test circuit of fig.2)

$V_S$	Supply Voltage		1.8		15	V
$I_d$	Total Quiescent Drain Current	$R_L = \infty$			15	mA
$V_{os}$	Output Offset Voltage (between the outputs)	$R_L = 8\Omega$			$\pm 80$	mV
$I_b$	Input Bias Current			100		nA
$P_O$	Output Power ( $f = 1KHz$ , $d = 10\%$ )	$R_L = 32\Omega$ $V_S = 9V$ $V_S = 6V$ $V_S = 4.5V$ $V_S = 3V$ $V_S = 2V$	320 50	1000 400 200 65 8		mW
		$R_L = 16\Omega$ $V_S = 6V$ $V_S = 3V$		800 120		mW mW
		$R_L = 8\Omega$ $V_S = 4.5V$ $V_S = 3V$		700 220		mW mW
		$R_L = 4\Omega$ $V_S = 3V$ $V_S = 2V$		350 80		mW mW
$d$	Distortion	$R_L = 8\Omega$ $P_O = 0.5W$ $f = 1KHz$		0.2		%
$G_V$	Closed Loop Voltage Gain	$f = 1KHz$		39		dB
$R_i$	Input Resistance	$f = 1KHz$	100			K $\Omega$
$e_N$	Total Input Noise	$R_s = 10k\Omega$ $B = \text{Curve A}$		2.5		$\mu V$
		$R_s = 10k\Omega$ $B = 22Hz \text{ to } 22KHz$		3		$\mu V$
SVR	Supply Voltage Rejection	$f = 100Hz$		40		dB
B	Power Bandwidth (-3dB)	$R_L = 8\Omega$ $P_O = 1W$		120		KHz

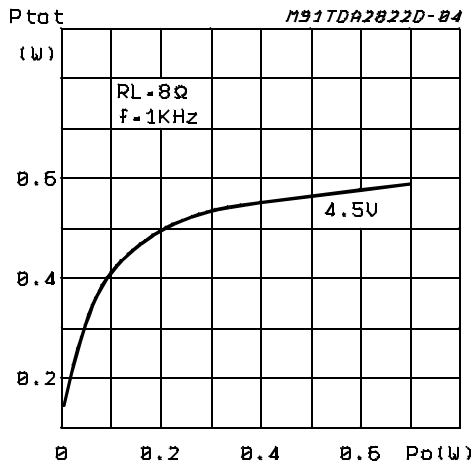
**Figure 3:** Supply Voltage Rejection vs. Frequency



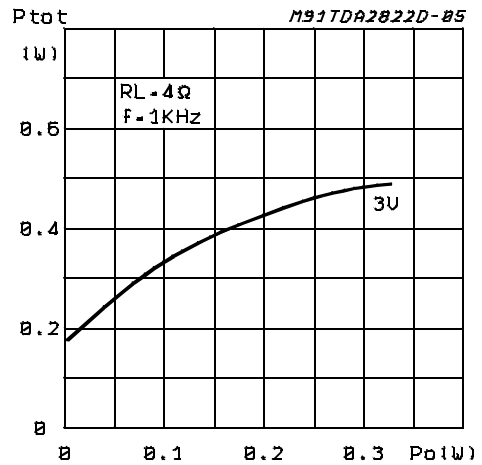
**Figure 4:** Output Power vs. Supply Voltage (THD = 10%, f = 1KHz Stereo)



**Figure 5:** Total Power Dissipation vs. Output Power (Bridge)

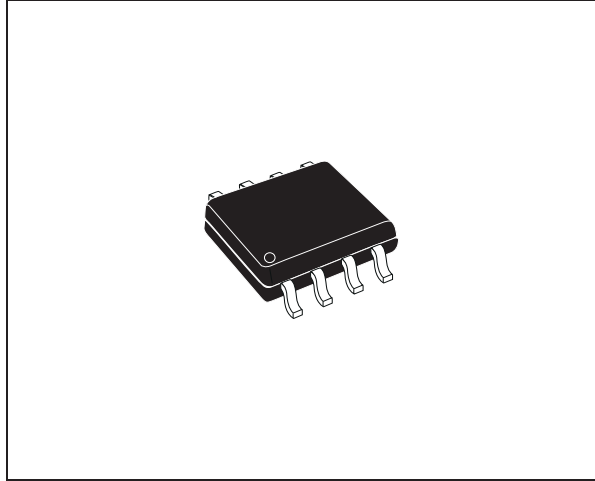


**Figure 6:** Total Power Dissipation vs. Output Power (Bridge)



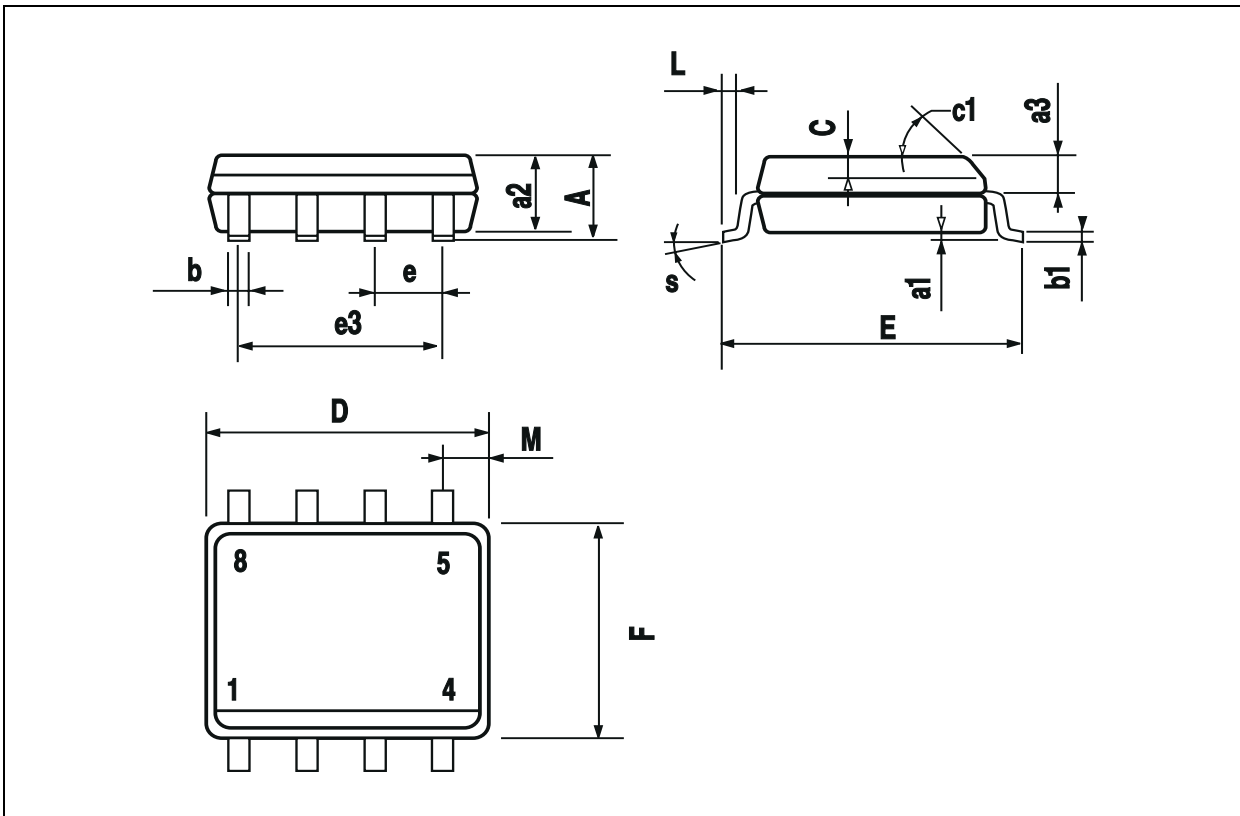
DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			1.75			0.069
a1	0.1		0.25	0.004		0.010
a2			1.65			0.065
a3	0.65		0.85	0.026		0.033
b	0.35		0.48	0.014		0.019
b1	0.19		0.25	0.007		0.010
C	0.25		0.5	0.010		0.020
c1	45° (typ.)					
D (1)	4.8		5.0	0.189		0.197
E	5.8		6.2	0.228		0.244
e		1.27			0.050	
e3		3.81			0.150	
F (1)	3.8		4.0	0.15		0.157
L	0.4		1.27	0.016		0.050
M			0.6			0.024
S	8° (max.)					

**OUTLINE AND MECHANICAL DATA**



**SO8**

(1) D and F do not include mold flash or protrusions. Mold flash or protrusions shall not exceed 0.15mm (.006inch).



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