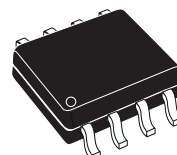


DUAL LOW-VOLTAGE POWER AMPLIFIER

- 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



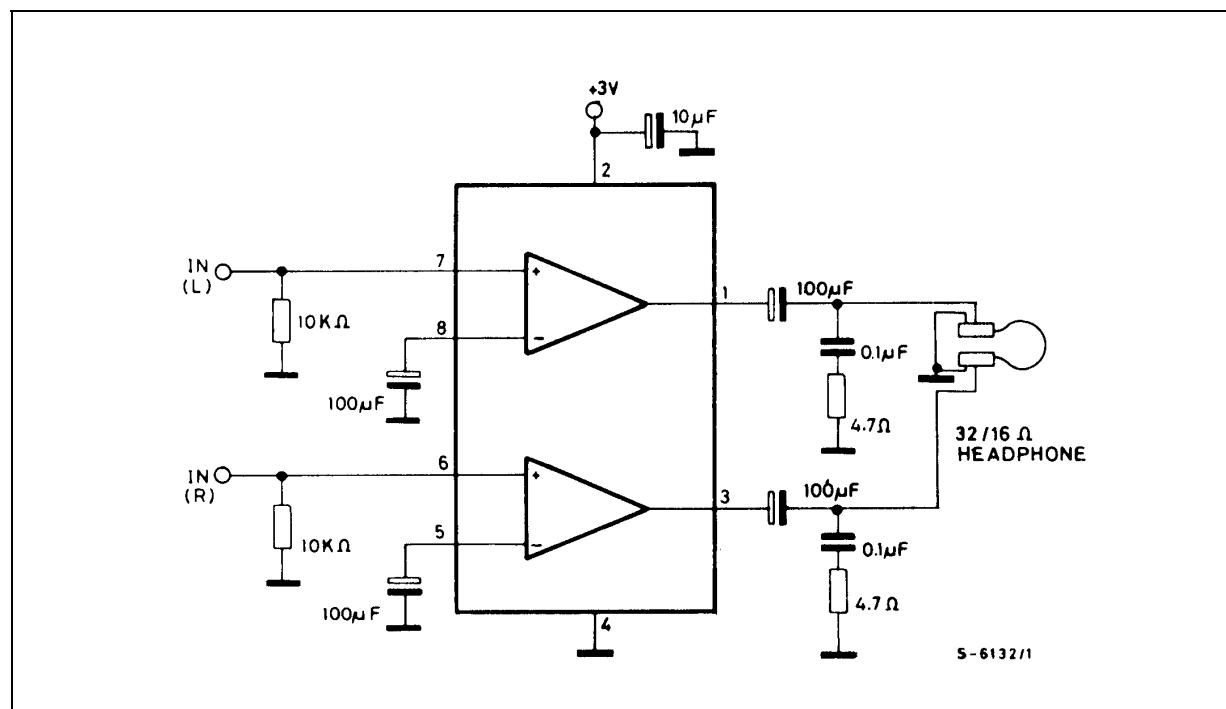
SO8

ORDERING NUMBER: TDA2822D

ABSOLUTE MAXIMUM RATINGS

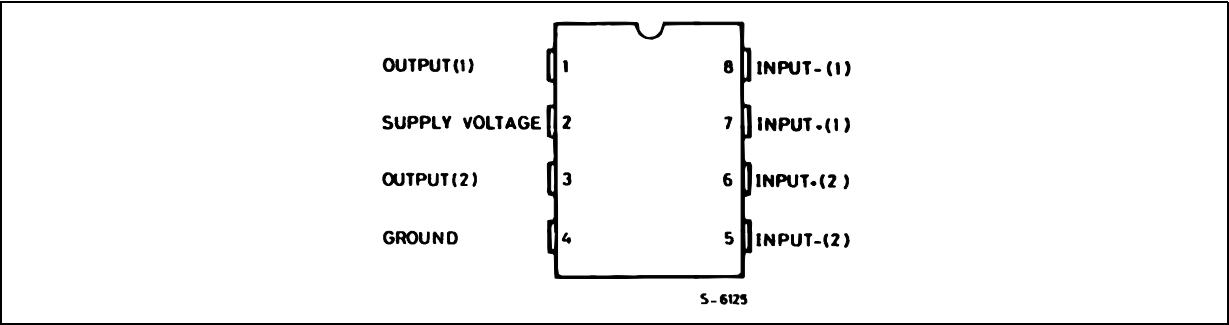
Symbol	Parameter	Value	Unit
V_S	Supply Voltage	15	V
I_O	Peak Output	1	A
P_{tot}	Total Power Dissipation $T_{amb} = 50^\circ\text{C}$	0.5	W
T_{stg}, T_j	Storage and Junction Temperature	-40 to 150	$^\circ\text{C}$

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

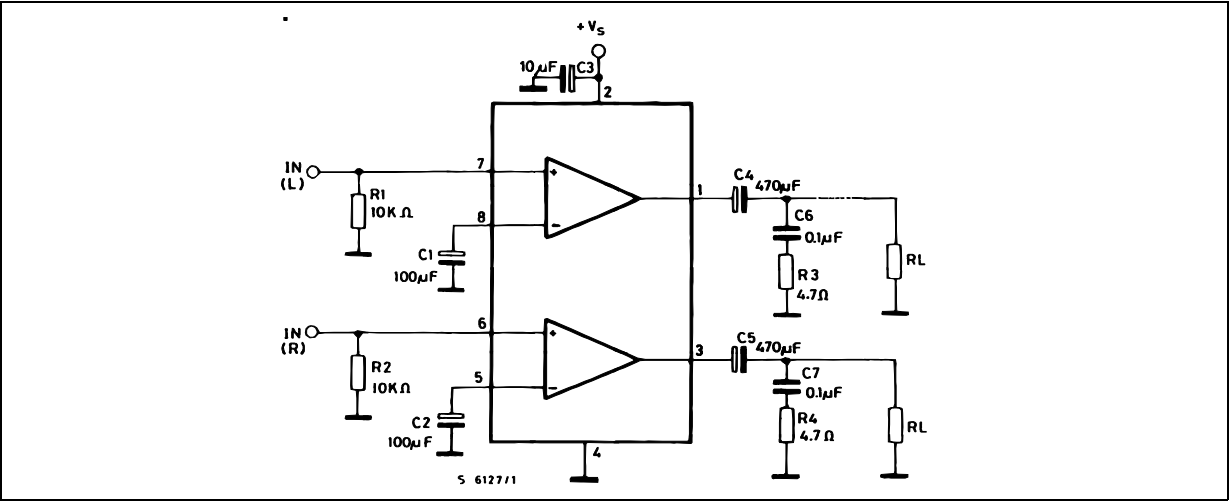
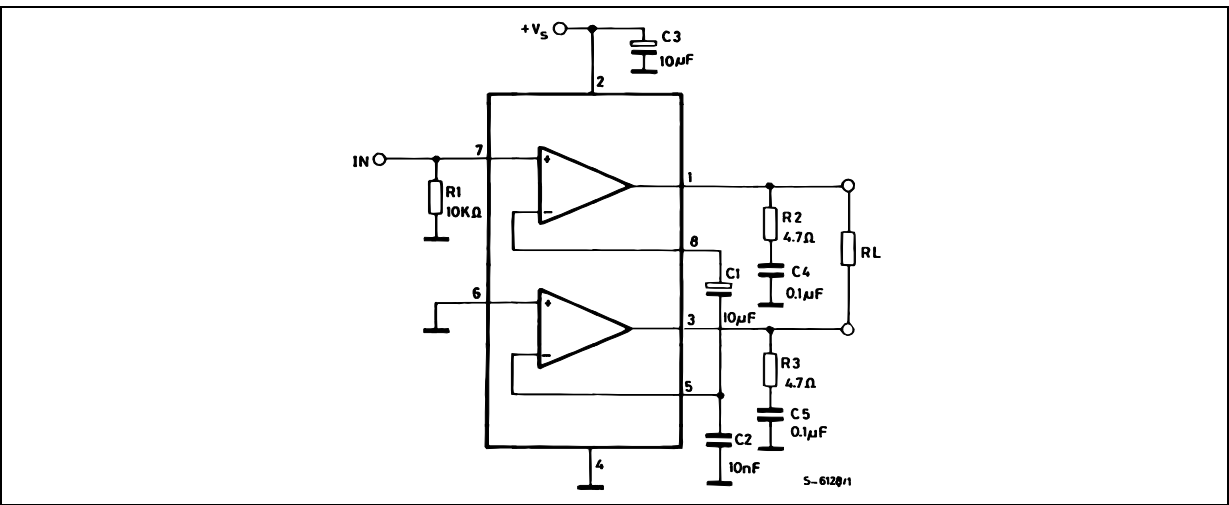


Figure 2: Bridge Application and Test Circuit



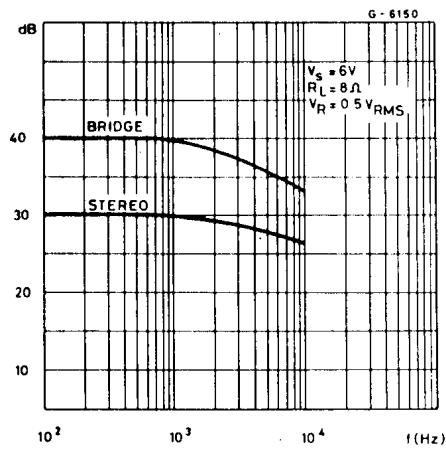
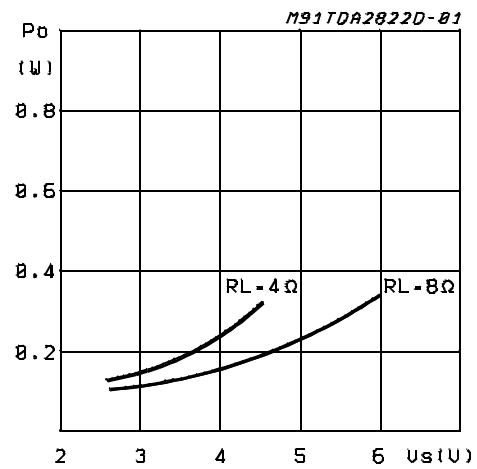
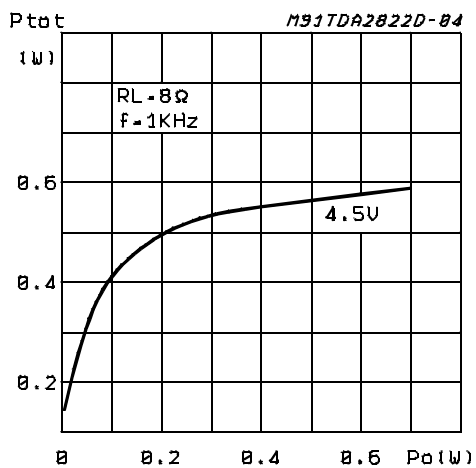
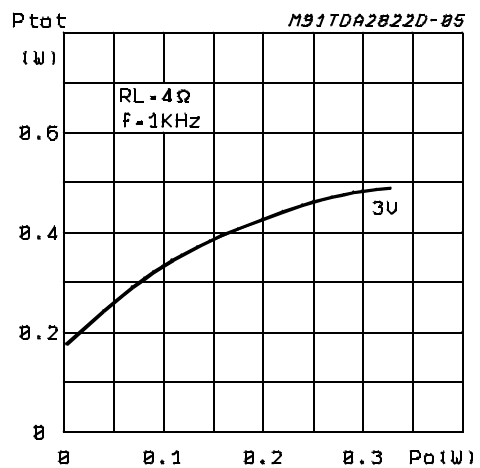
ELECTRICAL CHARACTERISTICS ($V_S = 6V$; $T_{amb} = 25^\circ C$, unless otherwise specified).

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
ΔG_V	Channel Balance				± 1	dB
R_i	Input Resistance	$f = 1KHz$	100			$K\Omega$
e_N	Total Input Noise	$R_S = 10k\Omega$ B = Curve A		2		μV
		$R_S = 10k\Omega$ B = 22Hz to 22KHz		2.5		μV
SVR	Supply Voltage Rejection	$f = 100Hz$ $C_1 = C_2 = 100\mu F$	24	30		dB
C_s	Channel Separation	$f = 1KHz$		50		dB

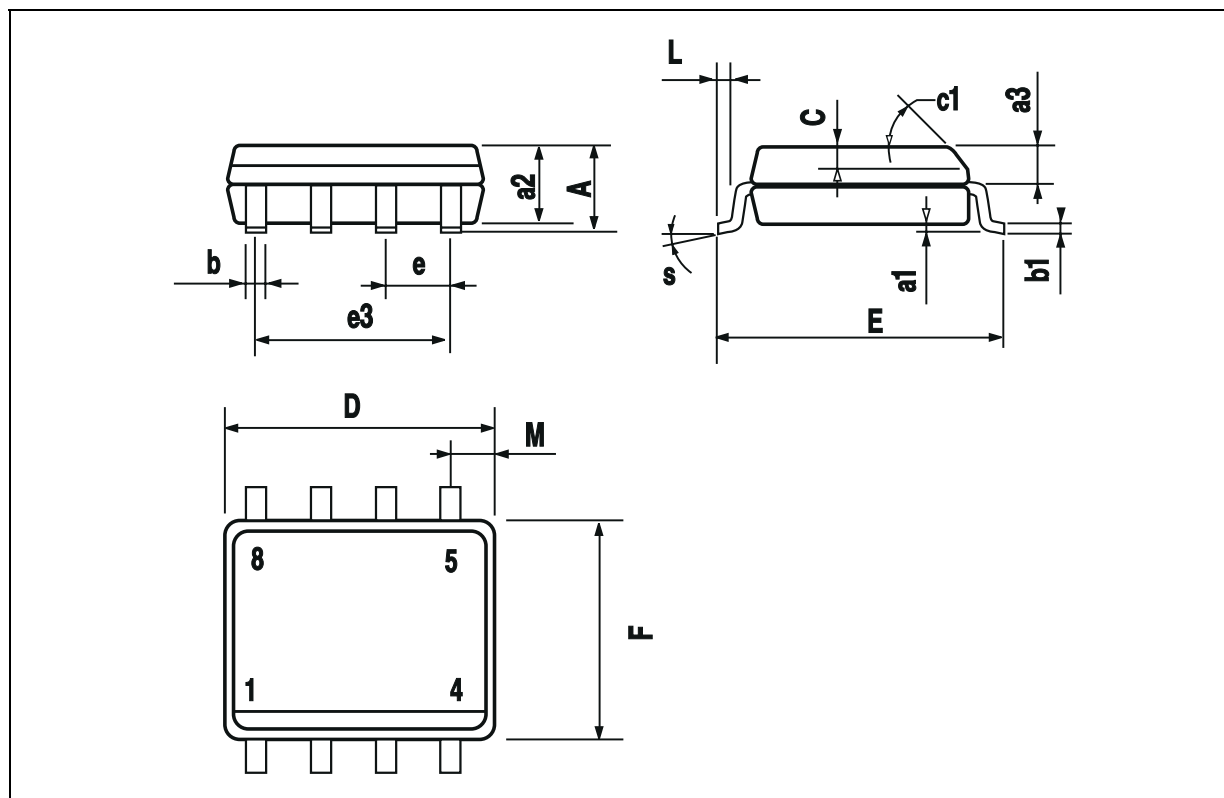
BRIDGE (Test circuit of fig.2)

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)	$R_L = 8\Omega$			± 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 = Curve A		2.5		μV
		$R_S = 10k\Omega$ B = 22Hz to 22KHz		3		μV
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)

SO8 PACKAGE MECHANICAL DATA

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	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	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.)					



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