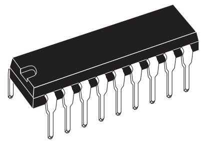
TDA7245A

6W AUDIO AMPLIFIER WITH STAND-BY

- STAND-BY FUNCTION
- SUPPLY VOLTAGE RANGE UP TO 30V
- MUSIC POWER = 16W (R_L = 4Ω, d = 10%)
- THERMAL PROTECTION



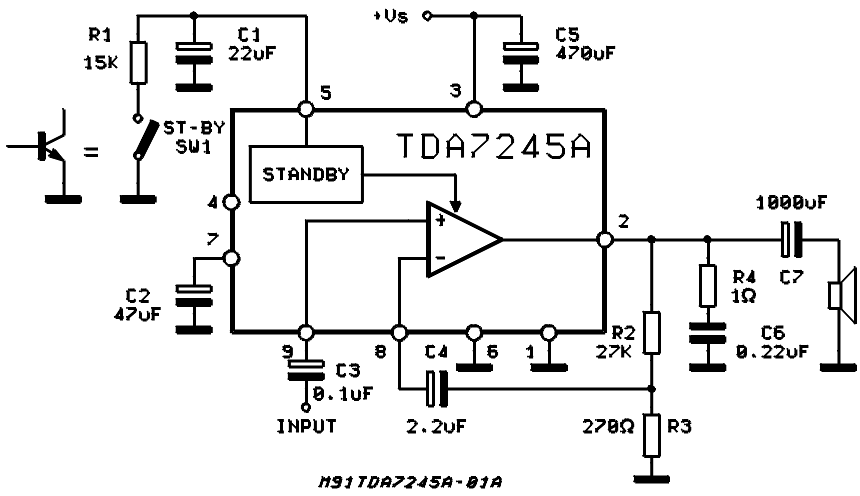
Powerdip 9+9

ORDERING NUMBER: TDA7245A

DESCRIPTION

The TDA7245A is a monolithic integrated circuit in 9+9 POWERDIP package, intended for use as low frequency power amplifier in a wide range of applications in radio and TV sets.

Figure 1: Test and Application Circuit



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_S	Supply Voltage	30	V
I_O	Output Peak Current (non repetitive t = 100µs)	3	A
I_O	Output Peak Current (repetitive, f > 20Hz)	2.5	A
P_{tot}	Power Dissipation at T_{amb} = 80°C at T_{case} = 70°C	1 6	W W
T_{stg}, T_j	Storage and junction Temperature	-40 to 150	°C

PIN CONNECTION (Top view)

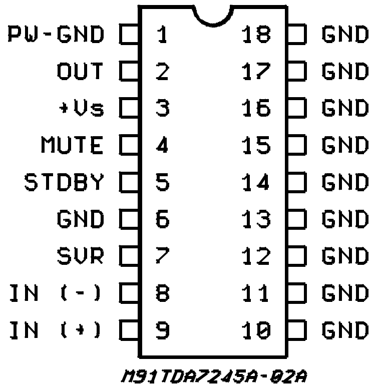
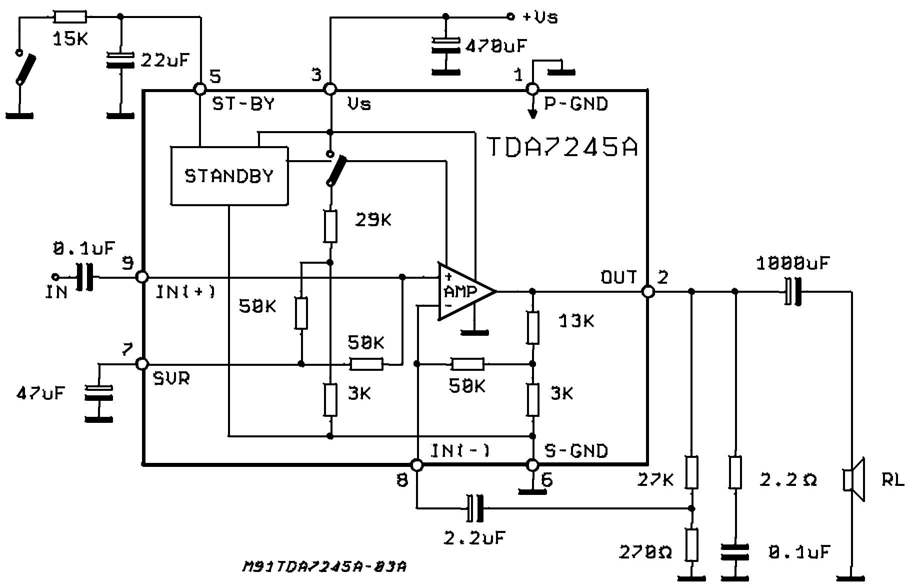


Figure 2: Schematic Diagram



THERMAL DATA

Symbol	Description		Value	Unit
$R_{th\ j\text{-}case}$ $R_{th\ j\text{-}amb}$	Thermal Resistance junction-case Thermal Resistance junction-ambient	Max Max	15 70	°C/W °C/W

ELECTRICAL CHARACTERISTICS (Refer to the test circuit, T_{amb} = 25°C, V_S = 16.5V, R_L = 4Ω, f = 1kHz; unless otherwise specified).

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V_S	Supply Voltage		12		30	V
V_O	Quiescent Output Voltage	V_S = 24V		11.6		V
I_d	Quiescent Drain Current	V_S = 28V		24	35	mA
P_O	Output Power	d = 1% V_S = 16.5V, R_L = 4Ω V_S = 20V, R_L = 8Ω d = 10% V_S = 16.5V, R_L = 4Ω V_S = 20V, R_L = 8Ω Music Power (*) V_S = 24V, d = 10%, R_L = 4Ω	 6.5	 6 5 7.5 6.5 16		 W W W W W
d	Harmonic Distortion	P_O = 50mW to 4W f = 1KHz f = 10KHz V_S = 20V, R_L = 8Ω, P_O = 50mW to 3.5W f = 1KHz f = 10KHz		 0.15 0.8 0.12 0.5	 0.5	 % % % %
R_I	Input Impedance	f = 1kHz	30			KΩ
BW	Small signal bandwidth (-3dB)	P_O = 1W	20 to 40,000			Hz
G_V	Voltage Gain (open loop)	f = 1KHz		75		dB
G_V	Voltage Gain (closed loop)	f = 1KHz	39	40	41	dB
e_N	Total Input Noise	B = 22 - 22,000Hz R_s = 50Ω R_s = 1kΩ R_s = 10kΩ		 1.7 2 3	 6	 mV µV µV
S/N	Signal to Noise Ratio	P_O = 5W; R_S = 10KΩ		86		dB
SVR	Supply Voltage Rejection	V_S = 16.5V; R_L = 8Ω; f = 100Hz R_s = 10kΩ; V_r = 0.5Vrms	38	45		dB
T_{sd}	Thermal shut-down Junction Temperature			150		°C

STAND-BY FUNCTION

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V_{st-by}	Pin 5 DC Voltage	SW1 Open (play)		6.4		V
I_{st-by}	Pin 5 Current	SW1 Closed (st-by)		160	280	µA
ATT_{st-by}	Stand-by Attenuation	f = 1kHz	70	90		dB
V_t	Stand-by Threshold (pin 5)			3.8		V
$I_{d\ st-by}$	Quiescent Current @ Stand-by			2	4	mA

Note (*):

MUSIC POWER CONCEPT

MUSIC POWER is (according to the IEC clauses n.268-3 of Jan 83) the maximal power which the amplifier is capable of producing across the rated load resistance (regardless of non linearity) 1 sec after the application of a sinusoidal input signal of frequency 1KHz.

According to this definition our method of measurement comprises the following steps:
1) Set the voltage supply at the maximum operating value -20%
2) Apply a input signal in the form of a 1KHz tone burst of 1 sec duration; the repetition period of the signal pulses is > 60 sec
3) The output voltage is measured 1 sec from the start of the pulse
4) Increase the input voltage until the output signal show a THD = 10%
5) The music power is then V^2_{out}/R1, where V_{out} is the output voltage measured in the condition of point 4) and R1 is the rated load impedance

The target of this method is to avoid excessive dissipation in the amplifier.

Figure 3: Output Power vs. Supply Voltage

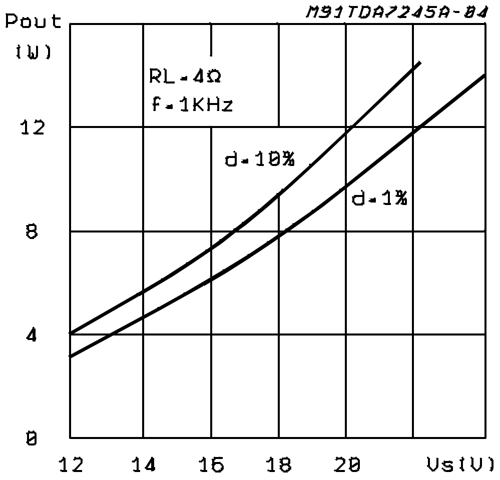
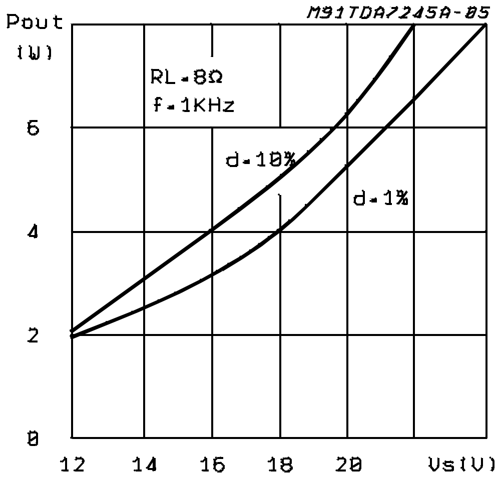
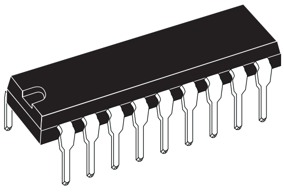


Figure 4: Output Power vs. Supply Voltage



DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
a1	0.51			0.020		
B	0.85		1.40	0.033		0.055
b		0.50			0.020	
b1	0.38		0.50	0.015		0.020
D			24.80			0.976
E		8.80			0.346	
e		2.54			0.100	
e3		20.32			0.800	
F			7.10			0.280
I			5.10			0.201
L		3.30			0.130	
Z			2.54			0.100

OUTLINE AND MECHANICAL DATA



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