



TDA7231A

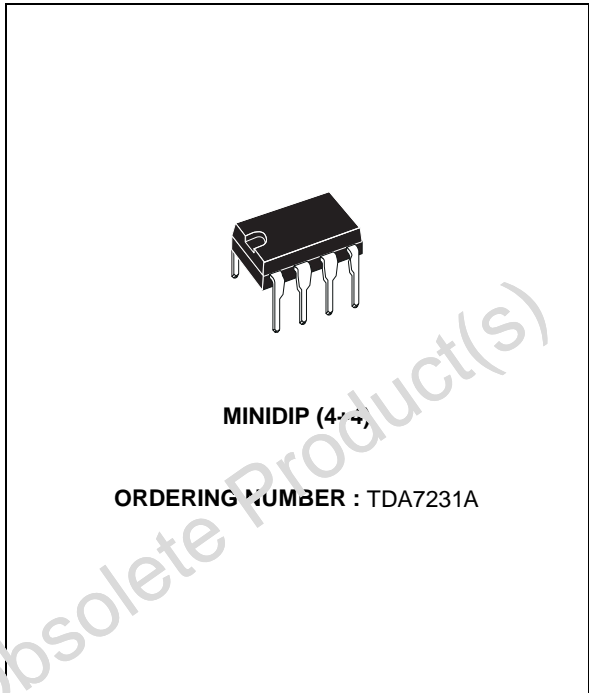
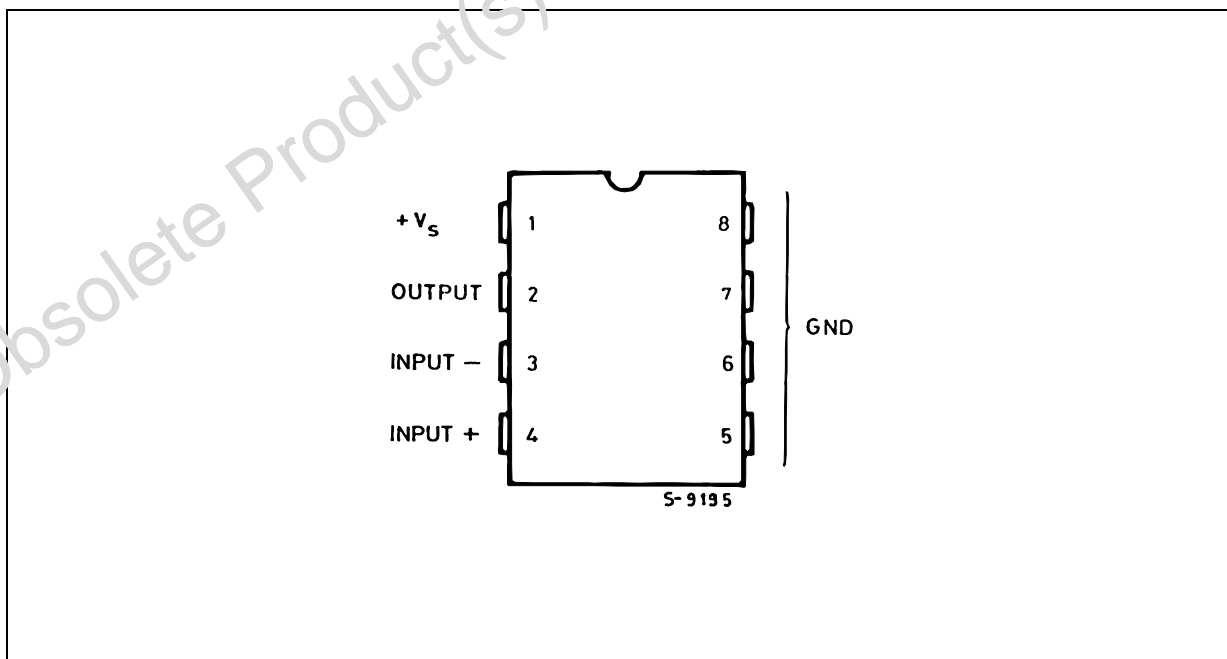
1.6W AUDIO AMPLIFIER

- OPERATING VOLTAGE 1.8 TO 15 V
- LOW QUIESCENT CURRENT
- HIGH POWER CAPABILITY
- LOW CROSSOVER DISTORTION
- SOFT CLIPPING

DESCRIPTION

The TDA7231A is a monolithic integrated circuit in 4 + 4 lead minidip package. It is intended for use as class AB power amplifier with wide range of supply voltage in portable radios, cassette recorders and players, etc.

PIN CONNECTION



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|----------------|---|-------------|------------------|
| V_s | Supply Voltage | 16 | V |
| P_{tot} | Total Power Dissipation at $T_{amb} = 50\text{ }^\circ\text{C}$ at $T_{case} = 70\text{ }^\circ\text{C}$ | 1.25 4 | W W |
| I_o | Output Peak Current | 1 | A |
| T_{stg}, T_j | Storage and Junction Temperature | - 40 to 150 | $^\circ\text{C}$ |

THERMAL DATA

| Symbol | Parameter | Value | Unit |
|------------------|-------------------------------------|---------|--------------------|
| $R_{th\ j-amb}$ | Thermal Resistance Junction-ambient | Max. 80 | $^\circ\text{C/W}$ |
| $R_{th\ j-pins}$ | Thermal Resistance Junction-pins | Max. 15 | $^\circ\text{C/W}$ |

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

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|----------|--------------------------|--|------|---------------------------------------|------|--------------------------------|
| V_s | Supply Voltage | | 1.8 | | 15 | V |
| V_o | Quiescent Out Voltage | $V_s = 6\text{ V}$ $V_s = 3\text{ V}$ | | 2.7 1.2 | | V V |
| I_d | Quiescent Drain Current | | | 3.6 | 9 | mA |
| I_b | Input Bias Current | | | 100 | | nA |
| P_o | Output Power | $d = 10\%$ $f = 1\text{ kHz}$ $V_s = 12\text{ V}$ $R_L = 8\Omega$ $V_s = 9\text{ V}$ $R_L = 4\Omega$ $V_s = 6\text{ V}$ $R_L = 8\Omega$ $V_s = 6\text{ V}$ $R_L = 4\Omega$ $V_s = 3\text{ V}$ $R_L = 4\Omega$ $V_s = 3\text{ V}$ $R_L = 8\Omega$ | | 1.8 1.6 0.4 0.7 110 70 | | W W W W mW mW |
| d | Distortion | $P_o = 0.2\text{ W}$ $f = 1\text{ kHz}$ $R_L = 8\Omega$ | | 0.3 | | % |
| G_v | Closed Loop Voltage Gain | | | 38 | | dB |
| R_{in} | Input Resistance | $f = 1\text{ kHz}$ | 100 | | | k Ω |
| e_N | Total Input Noise | $R_s = 10\text{ k}\Omega$ B = Curve A B = 22Hz to 22kHz | | 2 3 | | μV μV |

Figure 1 : Test and Application Circuit

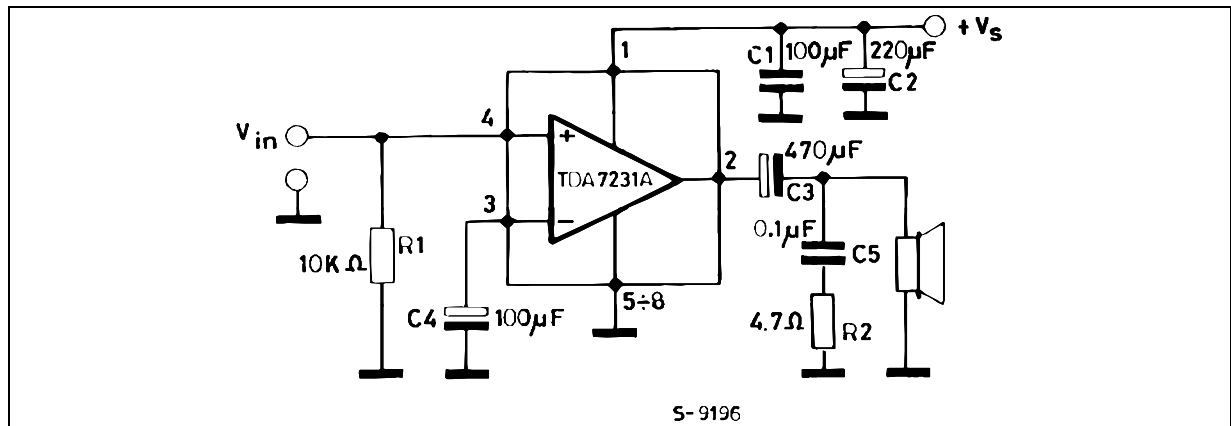


Figure 2 : P.C. Board and Components Layout of the figure 1 (1:1 scale)

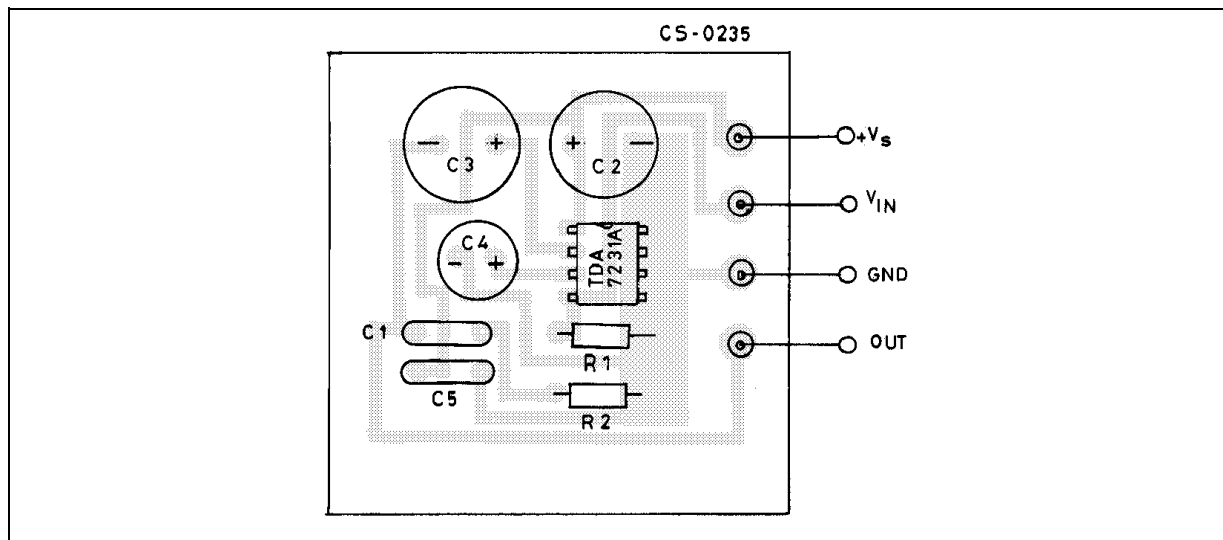


Figure 3 : Output Power versus Supply Voltage

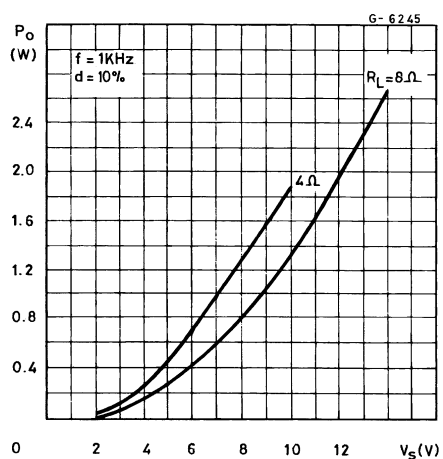


Figure 5 : Quiescent Output Voltage versus Supply Voltage

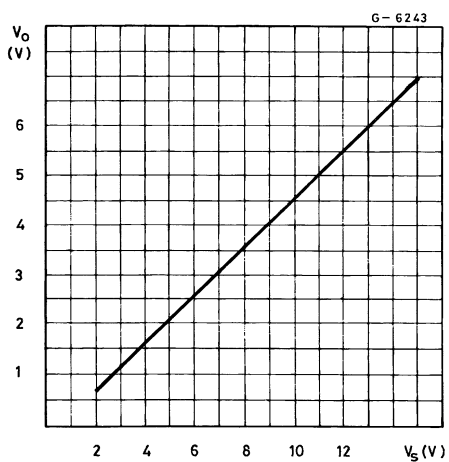


Figure 4 : Quiescent Current versus Supply Voltage

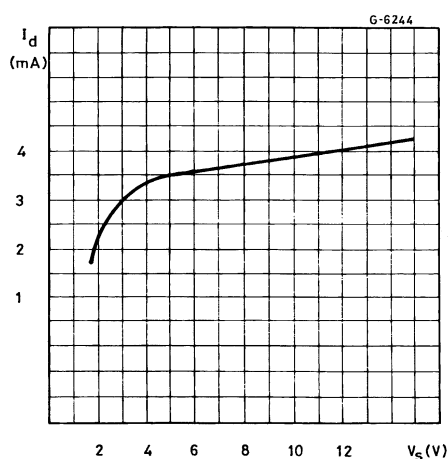
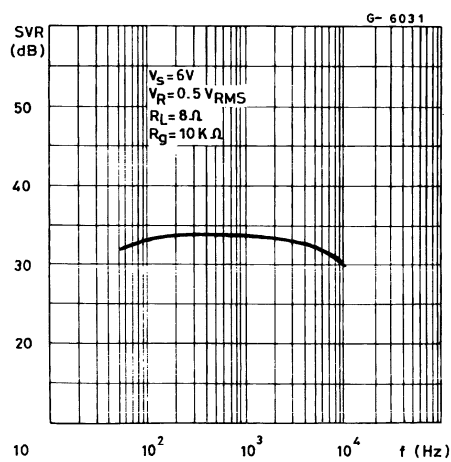
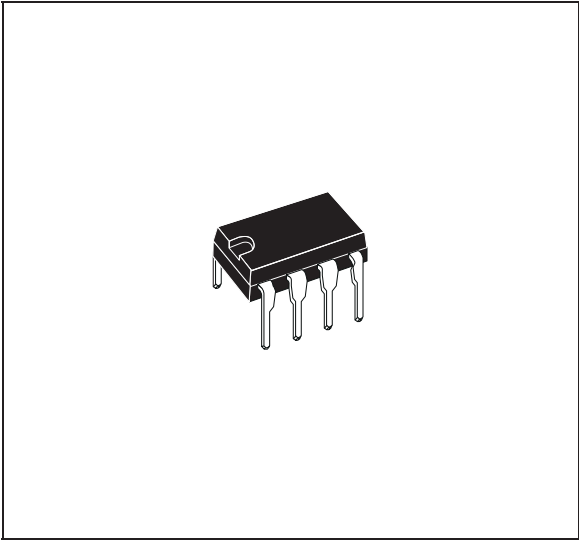


Figure 6 : Supply Voltage Rejection versus Frequency

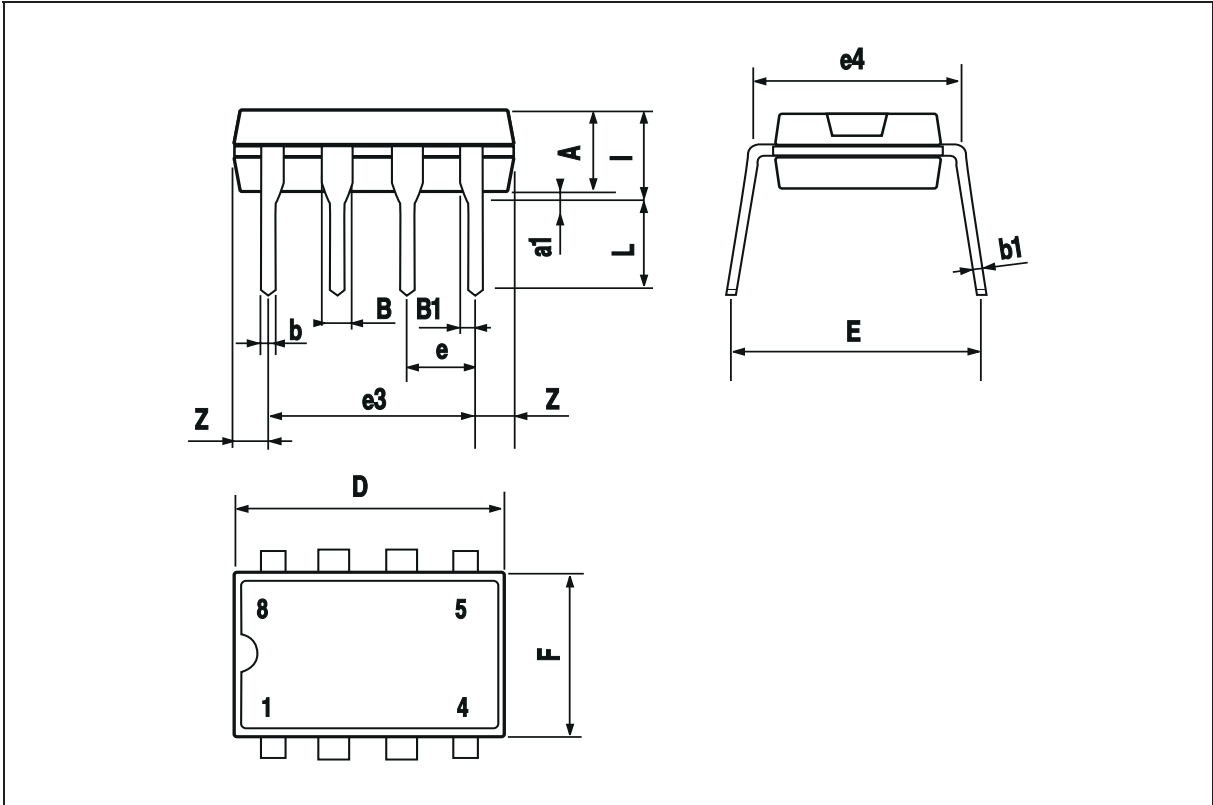


| DIM. | mm | | | inch | | |
|------|------|------|------|-------|-------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | | 3.3 | | | 0.130 | |
| a1 | 0.7 | | | 0.028 | | |
| B | 1.39 | | 1.65 | 0.055 | | 0.065 |
| B1 | 0.91 | | 1.04 | 0.036 | | 0.041 |
| b | | 0.5 | | | 0.020 | |
| b1 | 0.38 | | 0.5 | 0.015 | | 0.020 |
| D | | | 9.8 | | | 0.386 |
| E | | 8.8 | | | 0.346 | |
| e | | 2.54 | | | 0.100 | |
| e3 | | 7.62 | | | 0.300 | |
| e4 | | 7.62 | | | 0.300 | |
| F | | | 7.1 | | | 0.280 |
| I | | | 4.8 | | | 0.189 |
| L | | 3.3 | | | 0.130 | |
| Z | 0.44 | | 1.6 | 0.017 | | 0.063 |

OUTLINE AND MECHANICAL DATA



PowerMinidip



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