

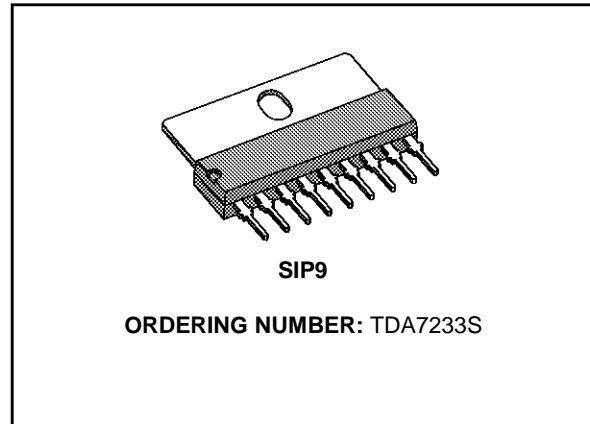
1W AUDIO AMPLIFIER WITH MUTE

ADVANCE DATA

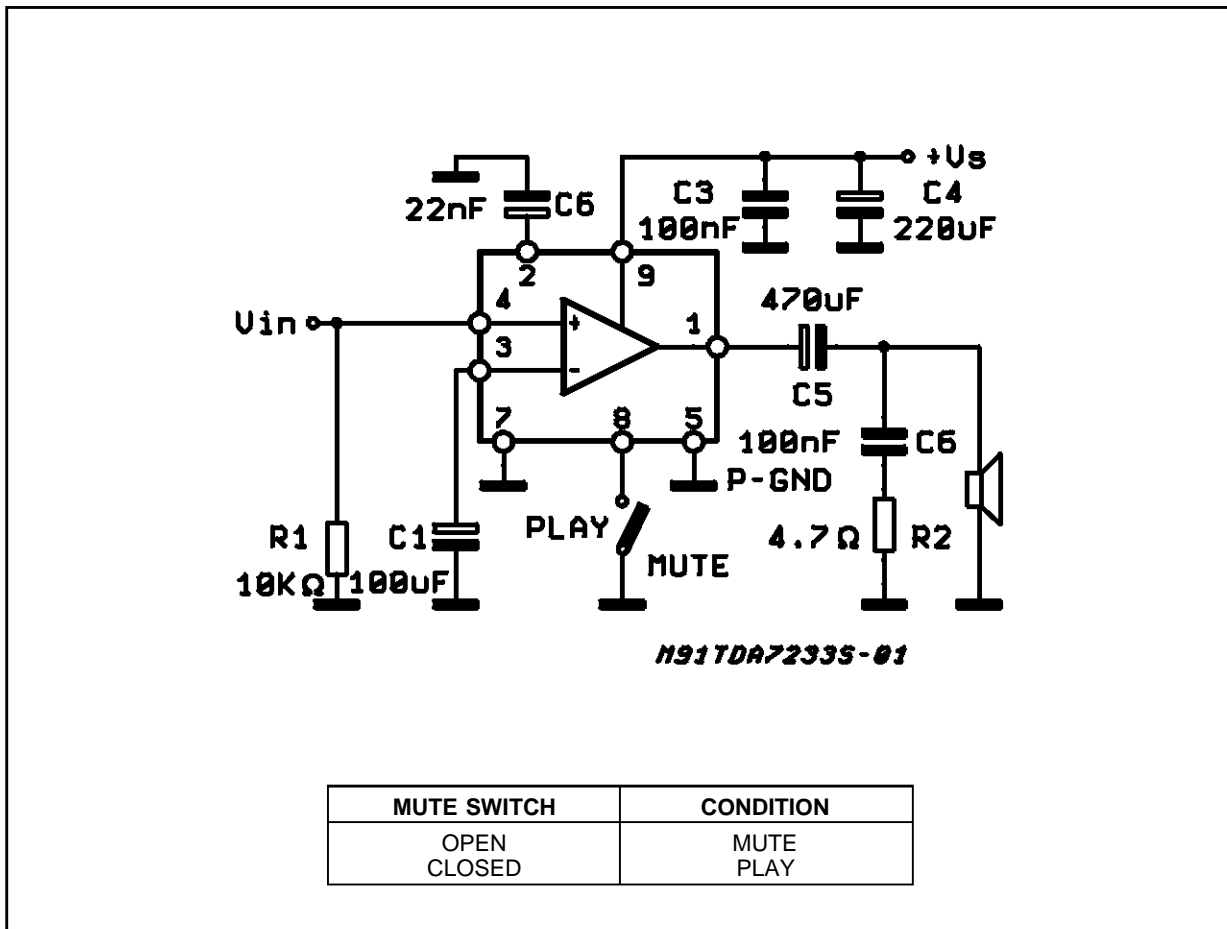
- OPERATING VOLTAGE 1.8 TO 15V
- EXTERNAL MUTE OR POWER DOWN FUNCTION
- IMPROVED SUPPLY VOLTAGE REJECTION
- LOW QUIESCENT CURRENT
- HIGH POWER CAPABILITY
- LOW CROSSOVER DISTORTION

DESCRIPTION

The TDA7233S is a monolithic integrated circuit in SIP 9, intended for use as class AB power amplifier with a wide range of supply voltage from 1.8V to 15V in portable radios, cassette recorders and players.

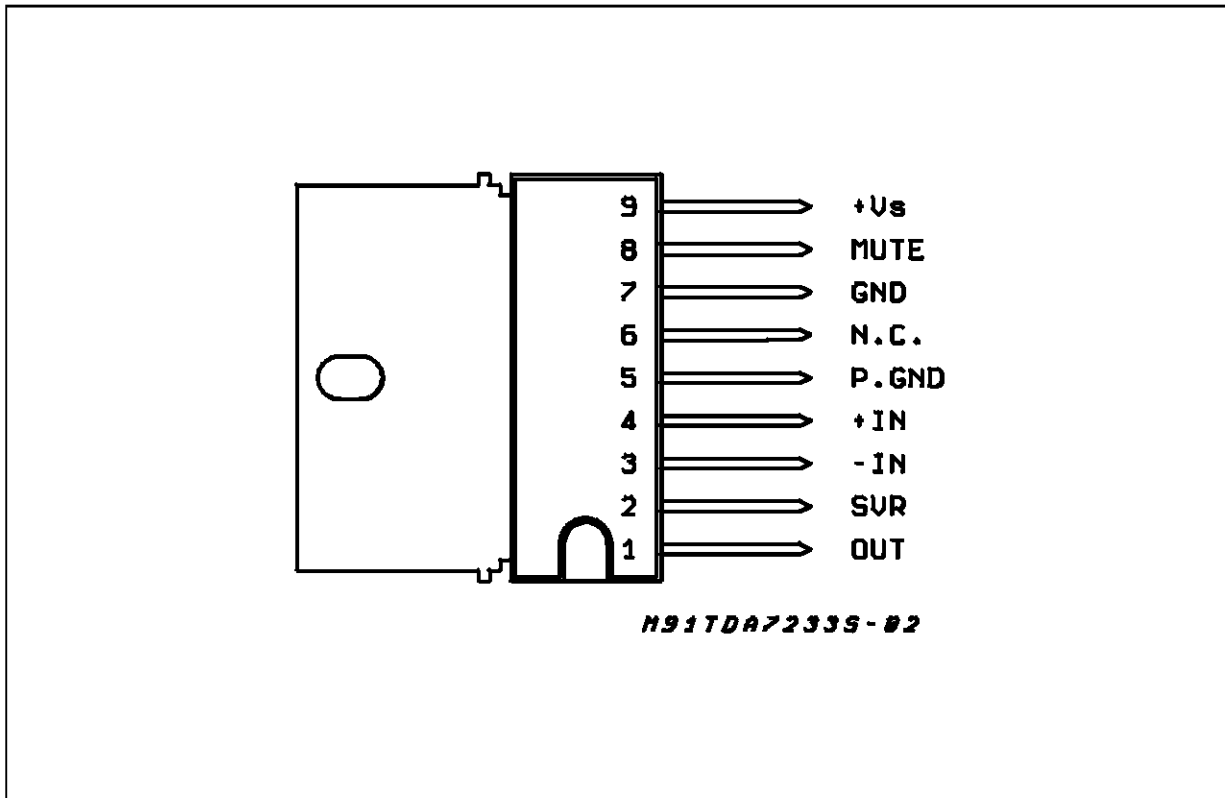


TEST AND APPLICATION CIRCUIT



TDA7233S

PIN CONNECTION (Top view)



ABSOLUTE MAXIMUM RATINGS

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

THERMAL DATA

| Symbol | Description | | Value | Unit |
|------------------|-------------------------------------|-----|-------|--------------------|
| $R_{th\ j-amb}$ | Thermal Resistance Junction-ambient | Max | 70 | $^\circ\text{C/W}$ |
| $R_{th\ j-case}$ | Thermal Resistance Junction-pins | Max | 10 | $^\circ\text{C/W}$ |

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

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Unit |
|----------|---|---|------|------------|------|-----------|
| V_S | Supply Voltage | | 1.8 | | 15 | V |
| V_O | Quiescent Output Voltage | | | 27 | | V |
| | | $V_S = 3V$ $V_S = 9V$ | | 1.2 4.2 | | V V |
| I_d | Quiescent Drain Current | PLAY | | 3.6 | 9 | mA |
| | | MUTE | | 0.4 | | mA |
| I_b | Input Bias Current | | | 100 | | nA |
| P_O | Output Power | $d = 10\%$ $f = 1kHz$ $V_S = 12V$ $R_L = 8\Omega$ | 0.8 | 1.9 | | W |
| | | $V_S = 9V$ $R_L = 4\Omega$ | | 1.6 | | W |
| | | $V_S = 9V$ $R_L = 8\Omega$ | | 1 | | W |
| | | $V_S = 6V$ $R_L = 8\Omega$ | | 0.4 | | W |
| | | $V_S = 6V$ $R_L = 4\Omega$ | | 0.7 | | W |
| | | $V_S = 3V$ $R_L = 4\Omega$ | | 110 | | mW |
| | | $V_S = 3V$ $R_L = 8\Omega$ | | 70 | | mW |
| d | Distortion | $P_O = 0.5W$ $R_L = 8\Omega$ $f = 1KHz$ $V_S = 9V$ | | 0.3 | | % |
| G_V | Closed Loop Voltage Gain | $f = 1KHz$ | | 39 | | dB |
| R_{IN} | Input Resistance | $f = 1KHz$ | 100 | | | $K\Omega$ |
| e_N | Total Input Noise ($R_S = 10K\Omega$) | B = Curve A | | 2 | | μV |
| | | B = 22Hz to 22KHz | | 3 | | μV |
| SVR | Supply Voltage Rejection | $R_g = 10K\Omega$ $f = 100Hz$ | 40 | 45 | | dB |
| | MUTE Attenuation | $V_O = 1V$, $f = 100Hz$ to $10KHz$ | | 70 | | dB |
| | MUTE Threshold | | | 0.6 | | V |
| I_M | MUTE Current | $V_S = 15V$ | | 0.4 | 2 | mA |

Figure 1: Output Power vs. Supply Voltage

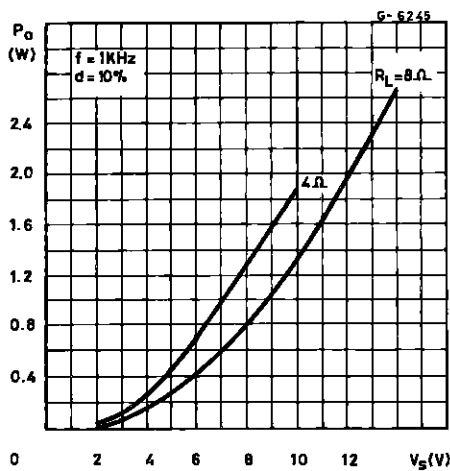


Figure 2: Supply Voltage Rejection vs. Frequency

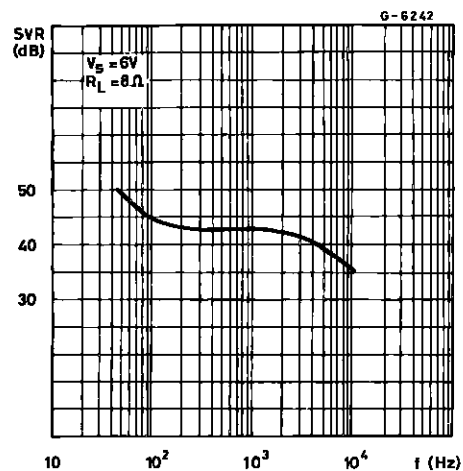


Figure 3: DC Output Voltage vs. Supply Voltage

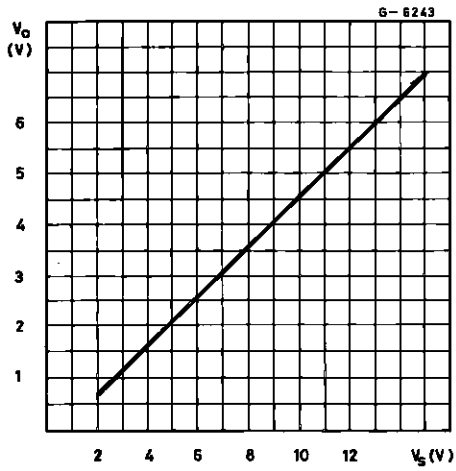


Figure 4: Quiescent Current vs. Supply Voltage

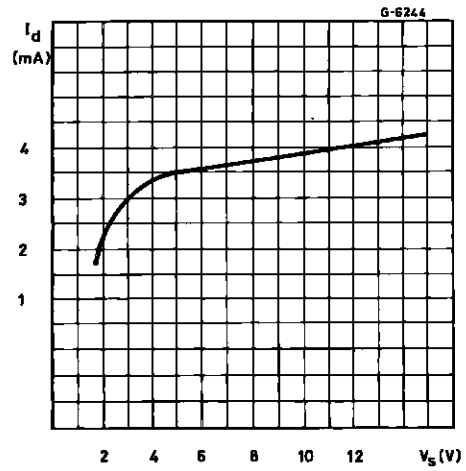
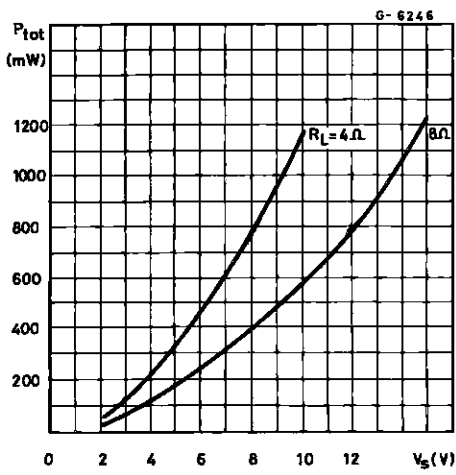


Figure 5: Total Dissipated Power vs. Supply Voltage



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