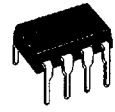
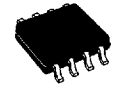
SGS-THOMSON MICROELECTRONICS

TDA7233
TDA7233D

1W AUDIO AMPLIFIER WITH MUTE

- 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





Minidip **SO8**

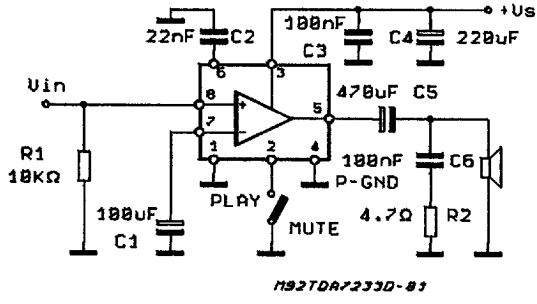
ORDERING NUMBERS:

- TDA7233 TDA7233D

DESCRIPTION

The TDA7233/D is a monolithic integrated circuit in 8 pin Minidip or SO8 package, intended for use as class AB power amplifier with a wide range of supply voltage from 1.8V to 15V in portable players, cordless telephones and Cellular Radios.

TEST AND APPLICATION CIRCUIT



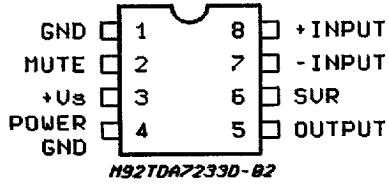
M92TDA7233D-01

Note: Switch Open = Mute
Switch Closed = Play

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 at T_{amb} = 50°C	1	W
T_{stg}, T_j	Storage and Junction Temperature	–40 to 150	°C

PIN CONNECTIONS (Top views)



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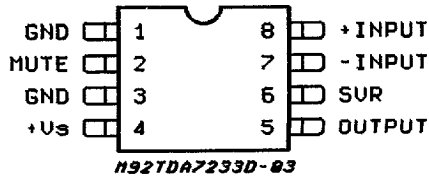
Minidip



M92TDA7233D-03

SO8

THERMAL DATA

Symbol	Parameter		SO8	Minidip	Unit
$R_{th\ j\text{-}amb}$	Thermal Resistance Junction-ambient	Max.	200	100	°C/W

ELECTRICAL CHARACTERISTICS (V_S = 6 V, T_{amb} = 25 °C, unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V_s	Supply Voltage		1.8		15	V
V_o	Quiescent Out Voltage			2.7		V
		V_s = 3 V V_s = 9 V		1.2 4.2		V V
I_d	Quiescent Drain Current	MUTE HIGH		3.6	9	mA
		MUTE LOW		0.4		
I_b	Input Bias Current			100		nA
P_o	Output Power	d = 10 % f = 1 KHz V_s = 12 V R_L = 8 Ω V_s = 9 V R_L = 4 Ω V_s = 9 V R_L = 8 Ω V_s = 6 V R_L = 8 Ω V_s = 6 V R_L = 4 Ω V_s = 3 V R_L = 4 Ω V_s = 3 V R_L = 8 Ω		 1.9 1.6 1 0.4 0.7 110 70		 W W W W W mW mW
d	Distortion	P_o = 0.5 W f = 1 kHz R_L = 8 Ω V_s = 9 V		0.3		%
G_v	Closed Loop Voltage Gain	f = 1 kHz		39		dB
R_{IN}	Input Resistance	f = 1 kHz	100			KΩ
e_N	Total Input Noise (R_s = 10 kΩ)	B = Curve A		2		μV
		B = 22 Hz to 22 kHz		3		
SVR	Supply Voltage Rejection	f = 100 Hz, R_g = 10 KΩ		45		dB
	MUTE Attenuation	V_o = 1 V f = 100 Hz to 10 kHz		70		dB
	MUTE Threshold			0.6		V
I_M	MUTE Current	V_S = 15V		0.4		mA

Figure 1: Output Power vs. Supply Voltage

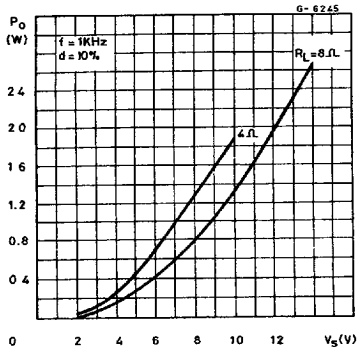


Figure 2: Supply Voltage Rejection vs. Frequency

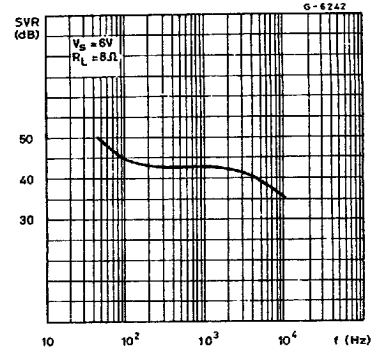


Figure 3: DC Output Voltage vs. Supply Voltage

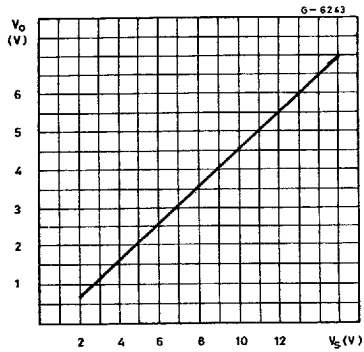


Figure 4: Quiescent Current vs. Supply Voltage

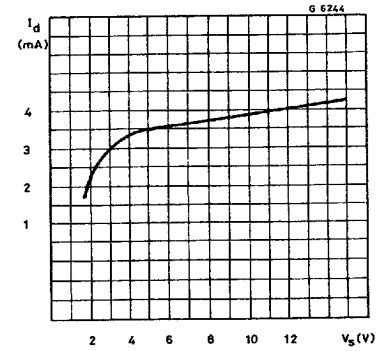


Figure 5: Total Dissipated Power vs. Supply Voltage