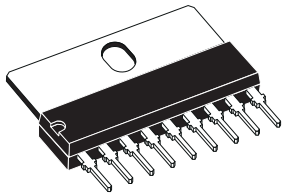
SGS-THOMSON MICROELECTRONICS

TDA7233S

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



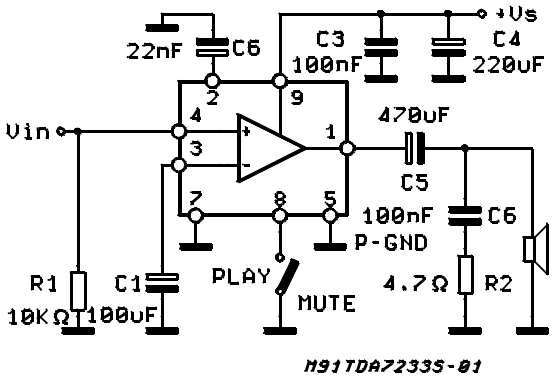
SIP9

ORDERING NUMBER: TDA7233S

DESCRIPTION

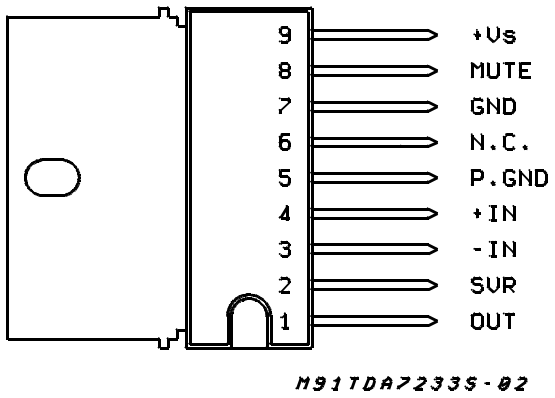
The TDA7233S is a monolithic integrated circuit in SIP 9, intended for use as class AB power amplifier with a wide range of supply voltage from 1.8V to 15V in portable radios, cassette recorders and players.

TEST AND APPLICATION CIRCUIT



MUTE SWITCH	CONDITION
OPEN	MUTE
CLOSED	PLAY

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°C	1	W
T_{stg}, T_j	Storage and Junction Temperature	-40 to 150	°C

THERMAL DATA

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

ELECTRICAL CHARACTERISTICS (V_S = 6V, 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 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 = 8Ω V_S = 9V R_L = 4Ω V_S = 9V R_L = 8Ω V_S = 6V R_L = 8Ω V_S = 6V R_L = 4Ω V_S = 3V R_L = 4Ω V_S = 3V R_L = 8Ω	 0.8 0.45 	 1.9 1.6 1 0.4 0.7 110 70	 	 W W W W W mW mW
d	Distortion	P_O = 0.5W R_L = 8Ω f = 1KHz V_S = 9V		0.3		%
G_V	Closed Loop Voltage Gain	f = 1KHz		39		dB
R_{IN}	Input Resistance	f = 1KHz	100			KΩ
e_N	Total Input Noise (R_S = 10KΩ)	B = Curve A		2		μV
		B = 22Hz to 22KHz		3		μV
SVR	Supply Voltage Rejection	R_g = 10KΩ 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

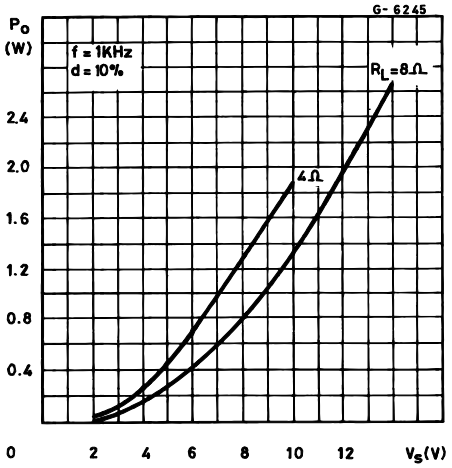


Figure 2: Supply Voltage Rejection vs. Frequency

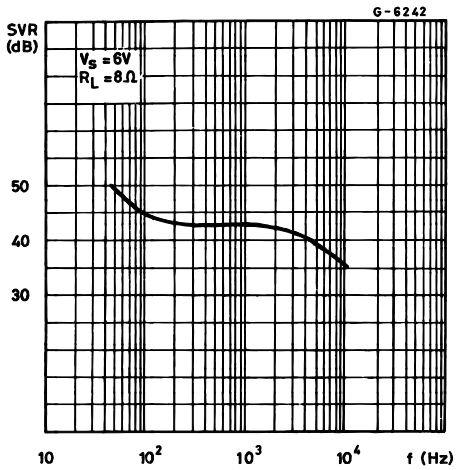


Figure 3: DC Output Voltage vs. Supply Voltage

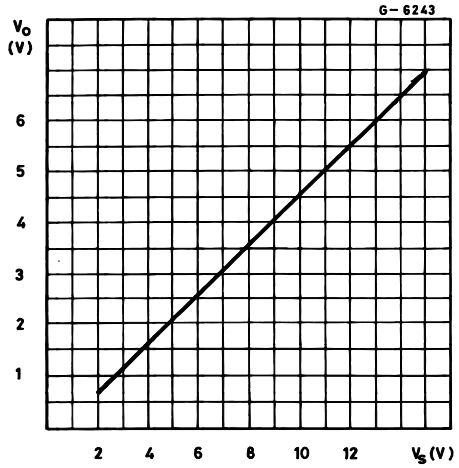


Figure 4: Quiescent Current vs. Supply Voltage

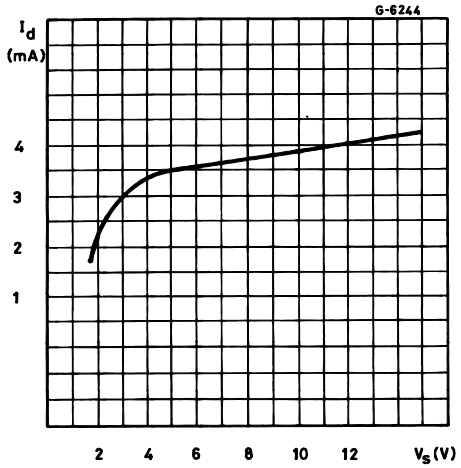
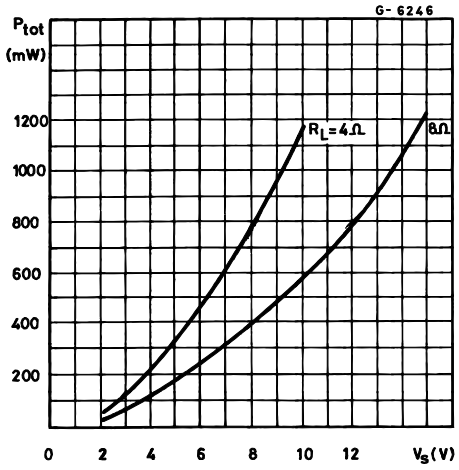


Figure 5: Total Dissipated Power vs. Supply Voltage



SIP9 PACKAGE MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			7.1			0.280
a1	2.7		3	0.106		0.118
B			23			0.90
B3			24.8			0.976
b1		0.5			0.020	
b3	0.85		1.6	0.033		0.063
C		3.3			0.130	
c1		0.43			0.017	
c2		1.32			0.052	
D			21.2			0.835
d1		14.5			0.571	
e		2.54			0.100	
e3		20.32			0.800	
L	3.1			0.122		
L1		3			0.118	
L2		17.6			0.693	
L3			0.25			0.010
L4	17.4		17.85	0.685		0,702
M		3.2			0.126	
N		1			0.039	
P			0.15			0.006