



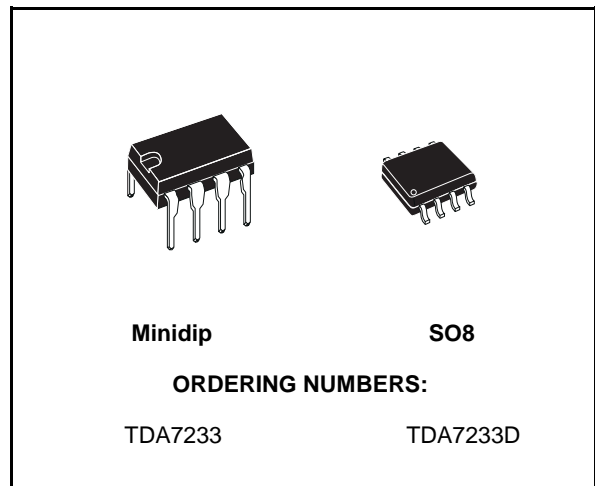
# TDA7233 TDA7233D

## 1W AUDIO AMPLIFIER WITH MUTE

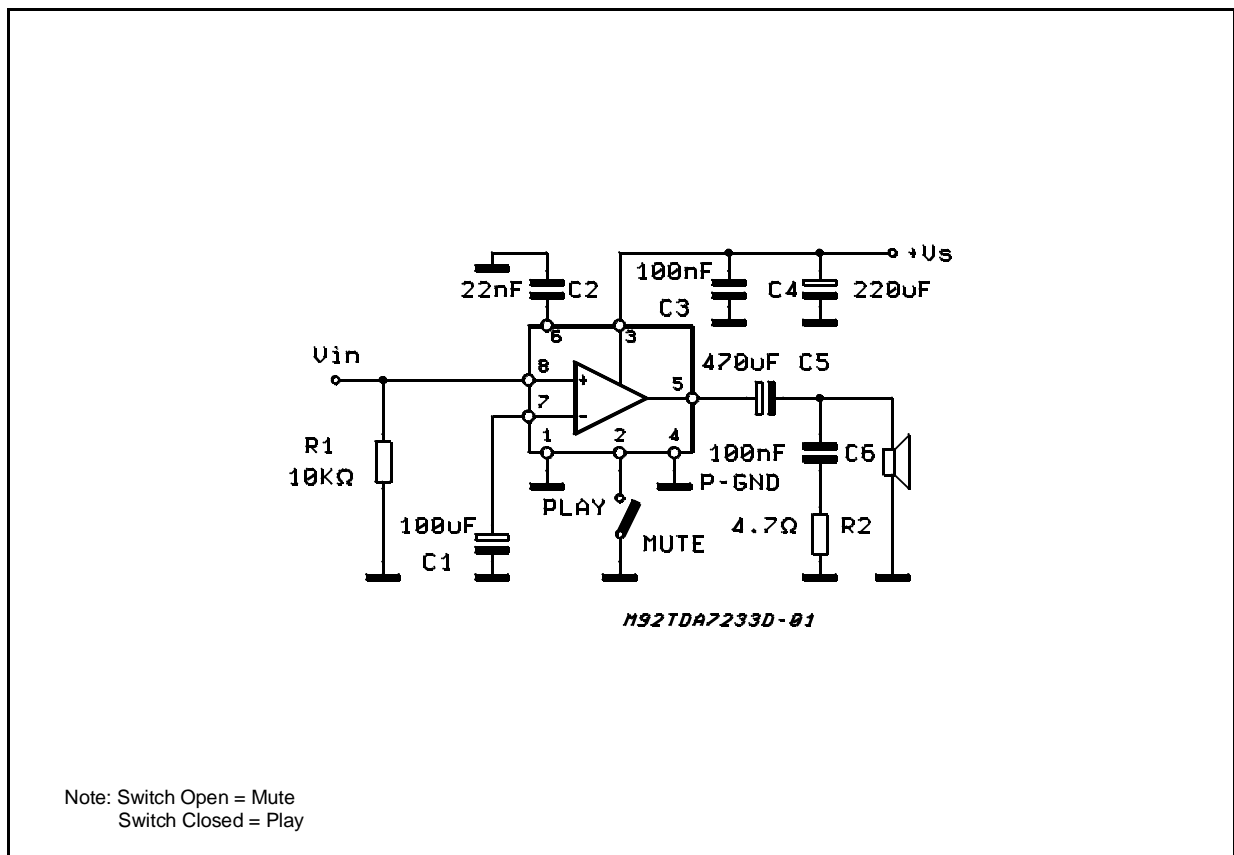
- OPERATING VOLTAGE 1.8 TO 15V
- EXTERNAL MUTE OR POWER DOWN FUNCTION
- IMPROVED SUPPLY VOLTAGE REJECTION
- LOW QUIESCENT CURRENT
- HIGH POWER CAPABILITY
- LOW CROSSOVER DISTORTION

### 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

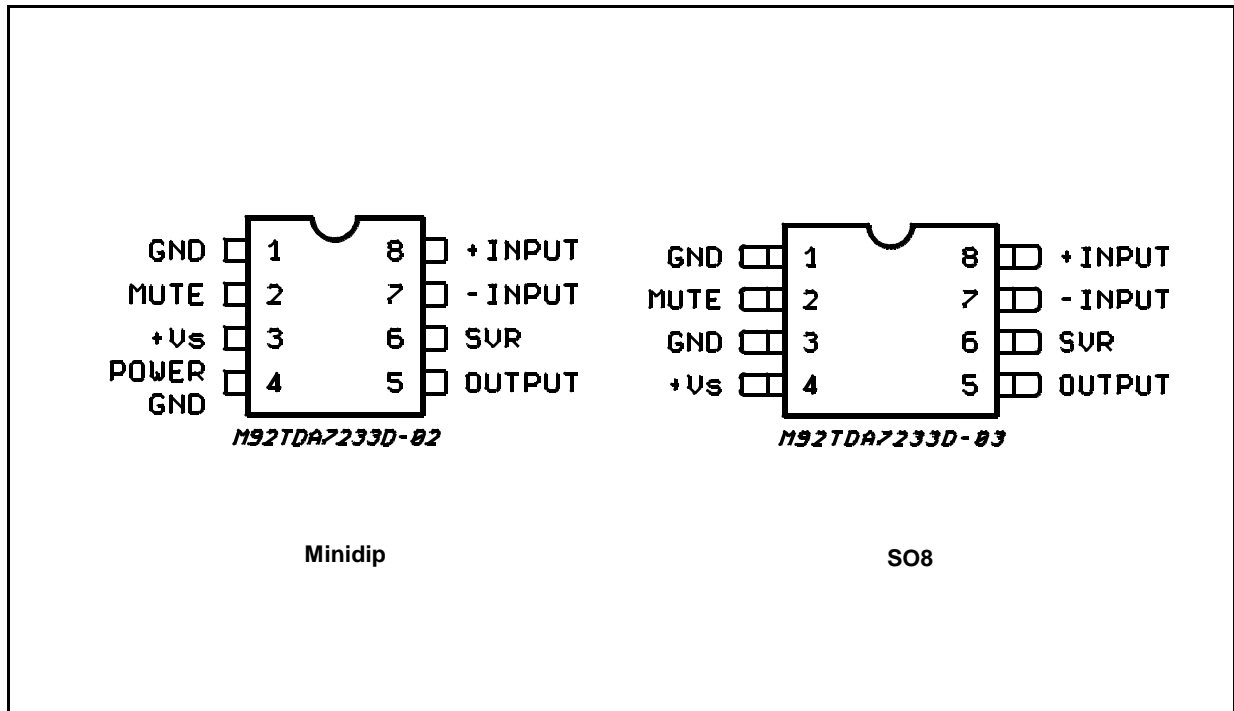


## TDA7233 - TDA7233D

### 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 $T_{amb} = 50^\circ\text{C}$	1	W
$T_{stg}, T_j$	Storage and Junction Temperature	-40 to 150	$^\circ\text{C}$

### PIN CONNECTIONS (Top views)



### THERMAL DATA

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

**ELECTRICAL CHARACTERISTICS** ( $V_s = 6\text{ V}$ ,  $T_{\text{amb}} = 25\text{ °C}$ , 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
		$V_s = 3\text{ V}$		1.2		V
		$V_s = 9\text{ V}$		4.2		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	$d = 10\%$ $f = 1\text{ KHz}$ $V_s = 12\text{ V}$ $R_L = 8\ \Omega$ $V_s = 9\text{ V}$ $R_L = 4\ \Omega$ $V_s = 9\text{ V}$ $R_L = 8\ \Omega$ $V_s = 6\text{ V}$ $R_L = 8\ \Omega$ $V_s = 6\text{ V}$ $R_L = 4\ \Omega$ $V_s = 3\text{ V}$ $R_L = 4\ \Omega$ $V_s = 3\text{ V}$ $R_L = 8\ \Omega$		1.9 1.6 1 0.4 0.7 110 70		W W W W W mW mW
$d$	Distortion	$P_o = 0.5\text{ W}$ $f = 1\text{ kHz}$ $R_L = 8\ \Omega$ $V_s = 9\text{ V}$		0.3		%
$G_v$	Closed Loop Voltage Gain	$f = 1\text{ kHz}$		39		dB
$R_{IN}$	Input Resistance	$f = 1\text{ kHz}$	100			$\text{K}\Omega$
$e_N$	Total Input Noise ( $R_s = 10\text{ k}\Omega$ )	B = Curve A		2		$\mu\text{V}$
		B = 22 Hz to 22 kHz		3		
SVR	Supply Voltage Rejection	$f = 100\text{ Hz}$ , $R_g = 10\text{ K}\Omega$		45		dB
	MUTE Attenuation	$V_o = 1\text{ V}$ $f = 100\text{ Hz to }10\text{ kHz}$		70		dB
	MUTE Threshold			0.6		V
$I_M$	MUTE Current	$V_s = 15\text{ V}$		0.4		mA

Figure 1: Output Power vs. Supply Voltage

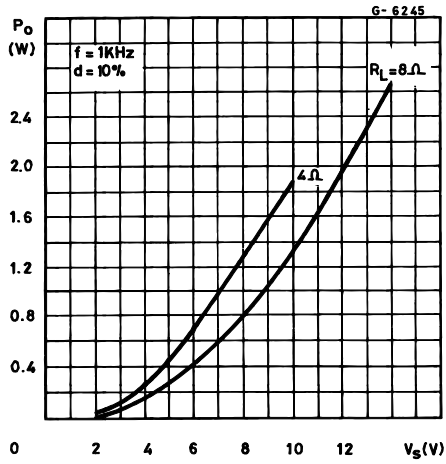


Figure 3: DC Output Voltage vs. Supply Voltage

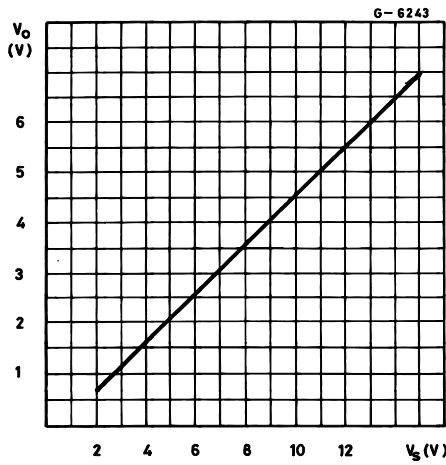


Figure 5: Total Dissipated Power vs. Supply Voltage

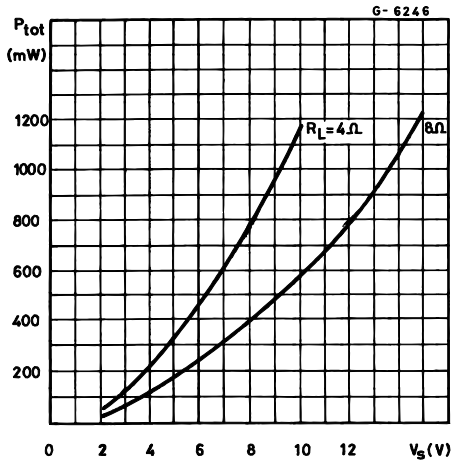


Figure 2: Supply Voltage Rejection vs. Frequency

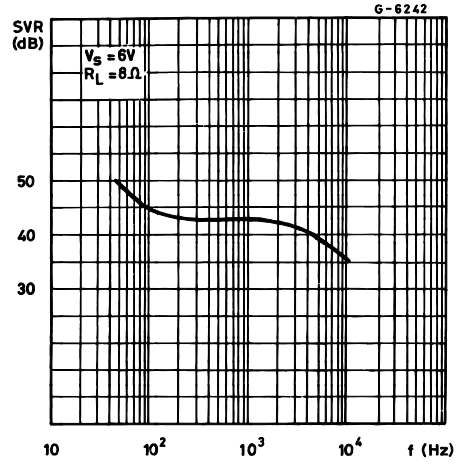
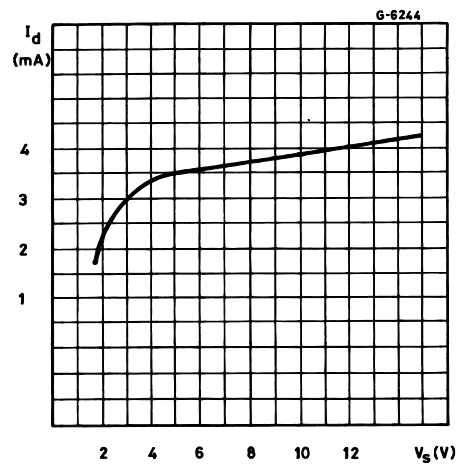
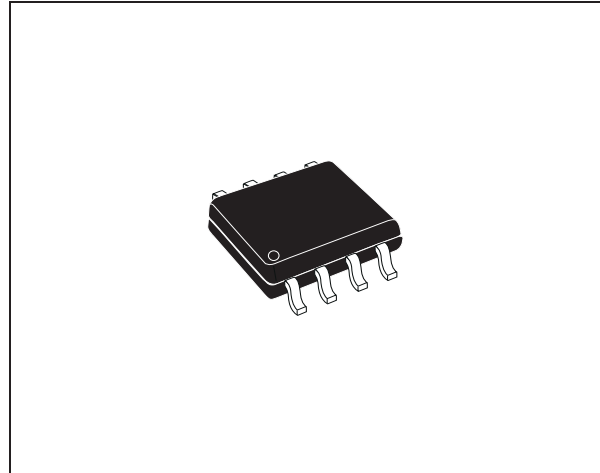


Figure 4: Quiescent Current vs. Supply Voltage



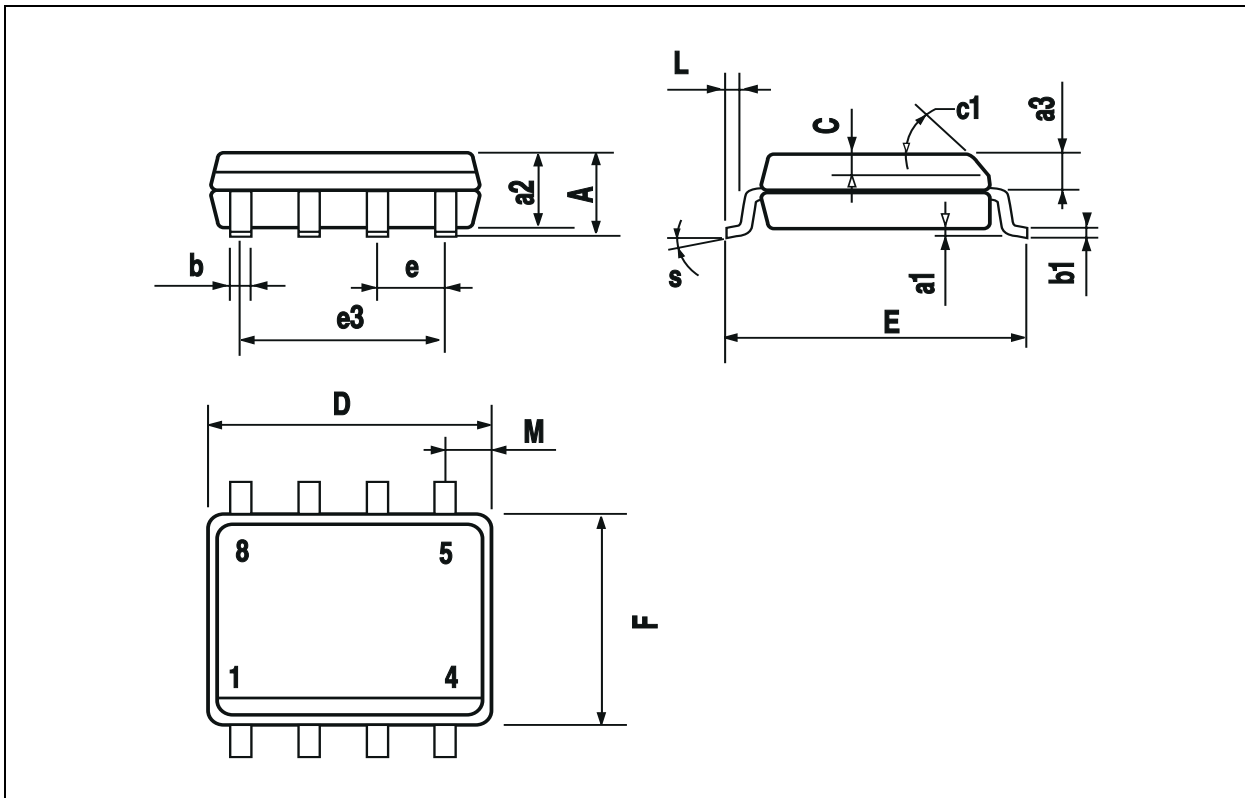
DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			1.75			0.069
a1	0.1		0.25	0.004		0.010
a2			1.65			0.065
a3	0.65		0.85	0.026		0.033
b	0.35		0.48	0.014		0.019
b1	0.19		0.25	0.007		0.010
C	0.25		0.5	0.010		0.020
c1	45° (typ.)					
D (1)	4.8		5.0	0.189		0.197
E	5.8		6.2	0.228		0.244
e		1.27			0.050	
e3		3.81			0.150	
F (1)	3.8		4.0	0.15		0.157
L	0.4		1.27	0.016		0.050
M			0.6			0.024
S	8° (max.)					

**OUTLINE AND MECHANICAL DATA**



**SO8**

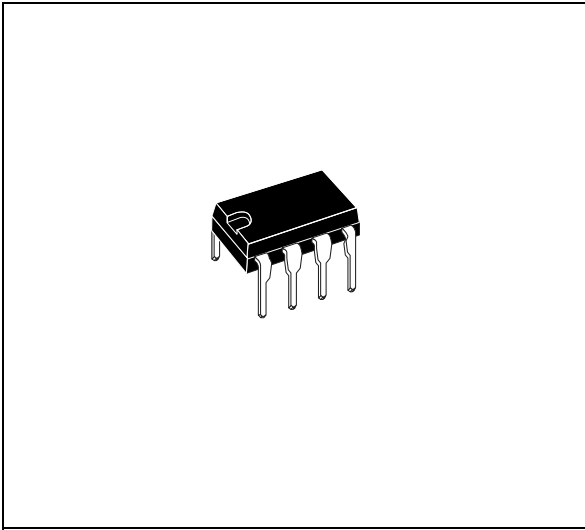
(1) D and F do not include mold flash or protrusions. Mold flash or protrusions shall not exceed 0.15mm (.006inch).



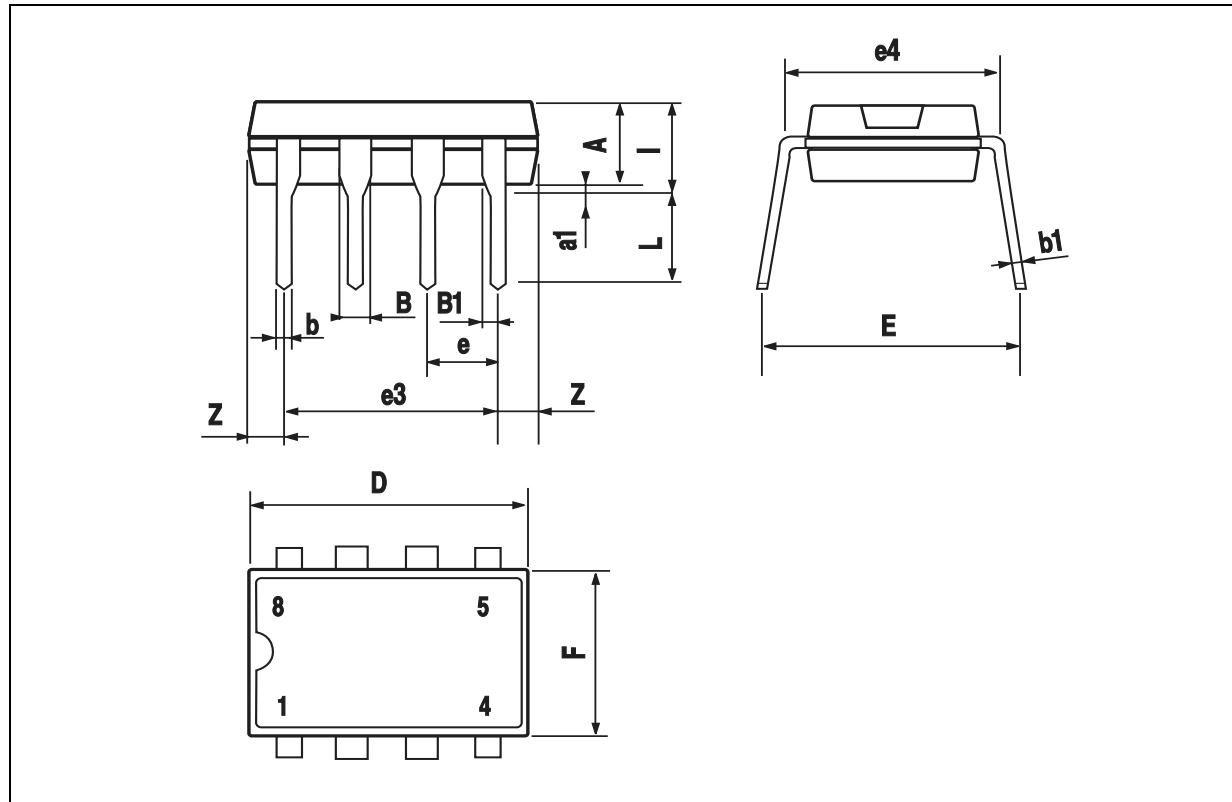
# TDA7233 - TDA7233D

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A		3.32			0.131	
a1	0.51			0.020		
B	1.15		1.65	0.045		0.065
b	0.356		0.55	0.014		0.022
b1	0.204		0.304	0.008		0.012
D			10.92			0.430
E	7.95		9.75	0.313		0.384
e		2.54			0.100	
e3		7.62			0.300	
e4		7.62			0.300	
F			6.6			0.260
I			5.08			0.200
L	3.18		3.81	0.125		0.150
Z			1.52			0.060

## OUTLINE AND MECHANICAL DATA



## Minidip



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