



**SANYO Semiconductors**  
**DATA SHEET**

**LA4224** — **Monolithic Linear IC**  
**Audio Output for TV application**  
**1W Monaural Power Amplifier**

**Overview**

LA4224 is a 1W monaural power amplifier intended for television audio output. This IC requires only two external components (capacitors) to construct amplifiers and is ideal for realizing substantial cost reduction of electronic devices.

**Functions**

- 1W monaural power amplifier ( $V_{CC} = 9V, R_L = 8\Omega$ ).
- Built-in Mute transistor.

**Maximum Ratings** at  $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC\ max}$	No signal	15	V
Collector-to-emitter voltage	$V_{CEO}$	Voltage between @pin-@pin of mute transistor	15	V
Emitter-to-collector voltage	$V_{ECO}$	Voltage between @pin-@pin of mute transistor	2	V
Operating temperature	$T_{opr}$		-25 to +75	$^\circ C$
Storage temperature	$T_{stg}$		-40 to +150	$^\circ C$

**Operating Conditions** at  $T_a=25^\circ C$

Parameter	Symbol	Conditions	Ratings	unit
Recommended supply voltage	$V_{CC}$		9	V
Recommended load resistance	$R_L$		8	$\Omega$
Allowable operating voltage range	$V_{CC\ op}$	Not exceeding the package $P_d$ .	5 to 15	V

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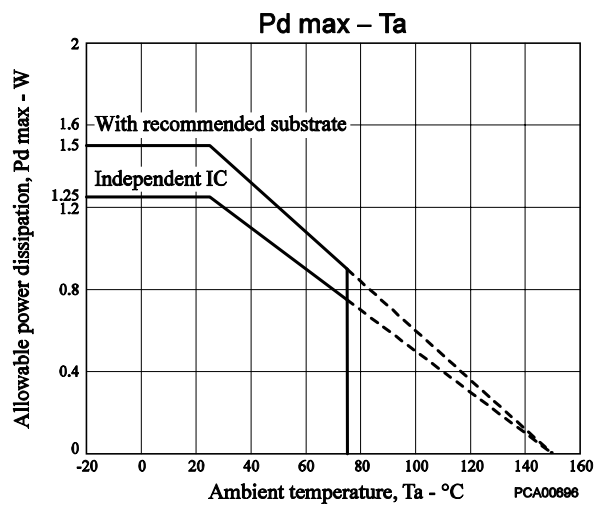
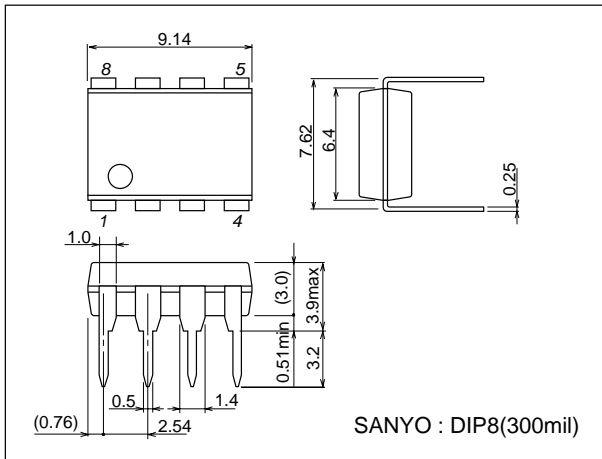
**Electrical Characteristics** at  $T_a = 25^\circ\text{C}$ ,  $V_{CC} = 9\text{V}$ ,  $R_L = 8\Omega$ ,  $f = 1\text{kHz}$ ,  $R_g = 600\Omega$ , Designated substrate and circuit

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Quiescent current	$I_{CCO}$	$R_g = 0$		10	20	mA
Voltage gain	VG	$V_O = 0\text{dBm}$	32	34	36	dB
Output power	$P_O$	THD = 10%	0.7	1.0		W
Total harmonic distortion	THD	$P_O = 0.1\text{W}$		0.1	0.5	%
Output noise voltage	$V_{NO}$	$R_g = 0$ , DIN AUDIO		0.06	0.3	mV
Ripple rejection	SVRR	$R_g = 0$ , $f_R = 100\text{Hz}$ , $V_{CCR} = 0\text{dBm}$ , DIN AUDIO	35	43		dB
Input resistance	$R_i$		24	30	36	$k\Omega$
Mute transistor emitter-to-collector saturation voltage	$V_{CE}(\text{sat})$	$I_C = 1\text{mA}$ , $I_B = 100\mu\text{A}$ , $h_{fe} = 10$		0.01	0.04	V

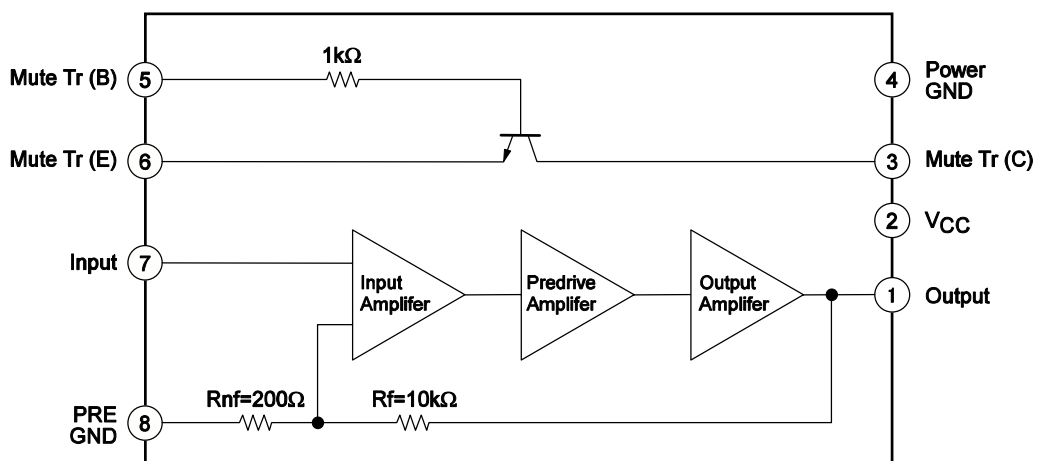
**Package Dimensions**

unit : mm

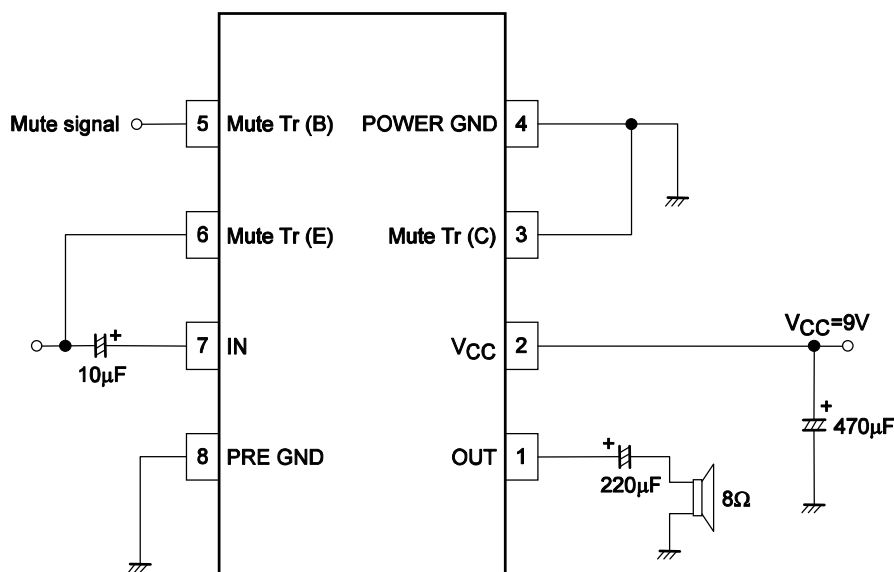
3001C



**Block Diagram**



## Application Circuit Example



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