

SANYO

No.2664

LA4575, 4575M

Monolithic Linear IC

2-Channel Pre + Power 3V Headphone Amp

The LA4575, 4575M are single-chip pre+power amp ICs designed for playback-only use in 3V headphone stereo applications.

Features

- 2-channel IC containing preamplifiers and power amplifiers in a single chip
- Power amp load : $R_L = 16\Omega \times 2$, $R_L = 32\Omega \times 2$
- Power amp output requires no coupling capacitor.
- Low distortion of power amp (THD = 0.2% typ, $P_o = 1\text{mW}$)
- Low output noise voltage of power amp ($V_{NO} = 16\mu\text{V}$ typ, $R_V = 0$, DIN Audio)
- The output coupling capacitor of the preamp may be removed.

Maximum Ratings at $T_a = 25^\circ\text{C}$

Maximum Supply Voltage	V_{CC} max	6.0	V
Allowable Power Dissipation	P_d max	500	mW
Operating Temperature	T_{opg}	-20 to +75	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 to +125	$^\circ\text{C}$

Operating Conditions at $T_a = 25^\circ\text{C}$

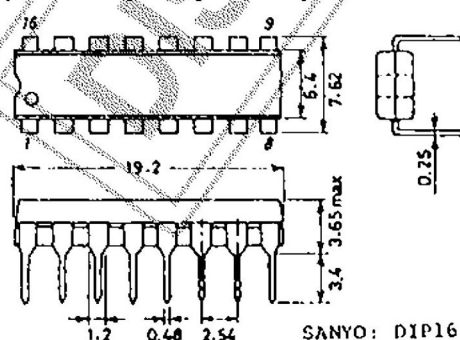
Recommended Supply Voltage	V_{CC}	3	V
Operating Voltage Range	V_{CCop}	1.8 to 5.4	V
Load Resistance	R_L	16 to 32	Ω

Operating Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC} = 3.0\text{V}$, $f = 1\text{kHz}$, $R_V = 30\text{k}\Omega$, $R_L = 32\Omega$

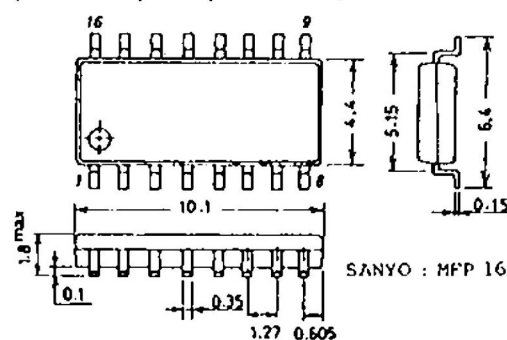
[Pre + Power Amp]		min	typ	max	unit
Quiescent Current	I_{CCO}	6	9	18	mA
		$R_g = 2.2\text{k}\Omega$ (preamp), $R_V = 0$ (power amp)			
Crosstalk between Channels [Preamp]	CT1	29	35		dB
		$R_g = 2.2\text{k}\Omega$ (preamp), $R_V = 0$ (power amp)			
Voltage Gain (Open Loop)	V_{Go}	75	85		dB
Voltage Gain (Closed Loop)	V_{G1}	36.5	38	39.5	dB
		$V_o = -20\text{dBm}$, $R_L = 30\text{k}\Omega$			
Maximum Output Voltage	V_o max	0.1	0.2		V
Total Harmonic Distortion	THD1		0.04	0.3	%
		$V_o = 0.15\text{V}$			

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Case Outline 3006B - D16IC
(unit: mm) [LA4575]



Case Outline 3035A - M16IC
(unit: mm) [LA4575M]



Specifications and information herein are subject to change without notice.

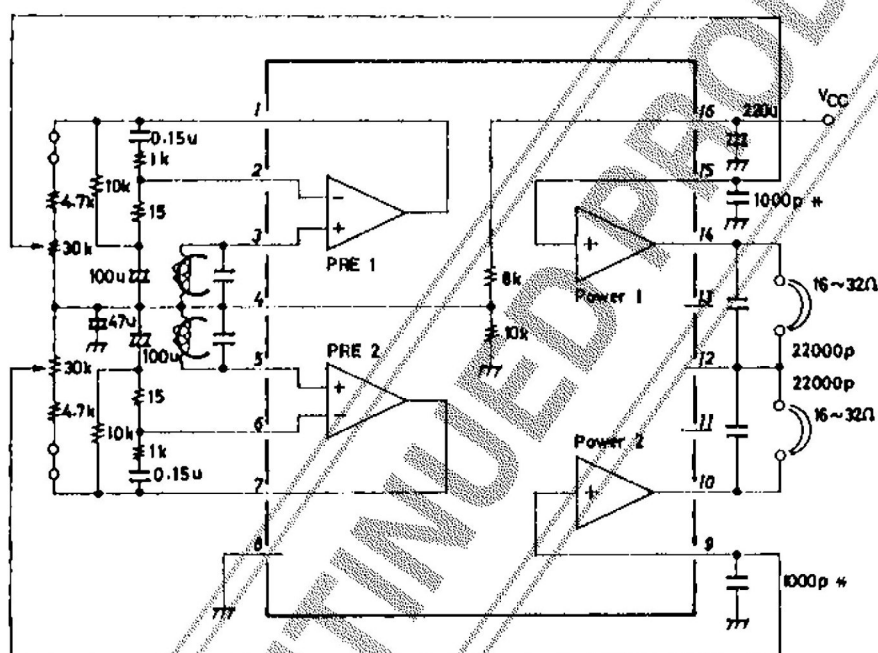
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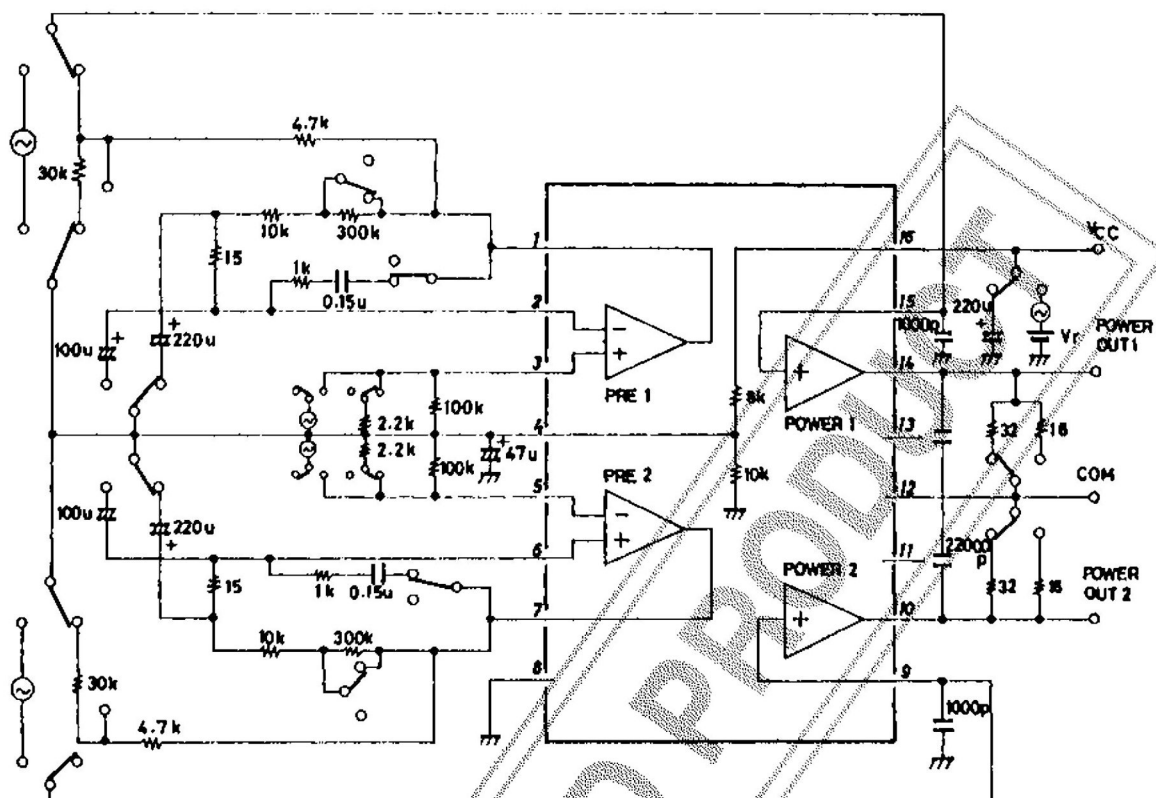
			min	typ	max	unit
Equivalent Input Noise Voltage	V_{NI}	$R_g = 2.2k\Omega$, B.P.F. 20Hz to 20kHz		0.9	2.0	μV
Crosstalk between Channels [Power Amp]	CT2	$V_o = -20dBm$	45	60		dB
Voltage Gain (Closed Loop)	VG2	$V_o = -12.5dBm$	27	30	33	dB
Output Power	P_o	THD=10%, $R_L = 16\Omega$	22	38		mW
		THD=10%, $R_L = 32\Omega$	14	20		mW
Total Harmonic Distortion	THD2	$P_o = 1mW$		0.2	1.0	%
Input Resistance	R_i		20	30	45	k Ω
Output Noise Voltage	V_{NO}	$R_V = 0$ (power amp), B.P.F. 20Hz to 20kHz		20	40	μV
Ripple Rejection	R_r	$V_{Cr} = -20dBm$, $f = 100Hz$, $R_V = 0$	40	60		dB

Equivalent Circuit Block Diagram and Sample Application Circuit



- Note) 1. A capacitor (1000pF) connected across pin 9 and GND and across pin 15 and GND is effective against radiation.
2. $C = 47\mu\text{F}$ may be changed to $100\mu\text{F}$ so that the low-frequency characteristics of the preamplifier are exhibited satisfactorily.
3. Pins 11 and 12, to which a voltage is applied, must not be connected to other lines.
- * May be connected for prevention against radiation (depending on the conditions under which the set is used).

Test Circuit



The application circuit diagrams and circuit constants herein are included as an example and provide no guarantee for designing equipment to be mass-produced.
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