

**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 ( $THD = 0.2\% \text{ typ}$ ,  $P_o = 1\text{mW}$ )
- . Low output noise voltage of power amp ( $V_{NO} = 16\mu\text{V} \text{ typ}$ ,  $R_V = 0$ , DIN Audio)
- . The output coupling capacitor of the preamp may be removed.

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

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

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

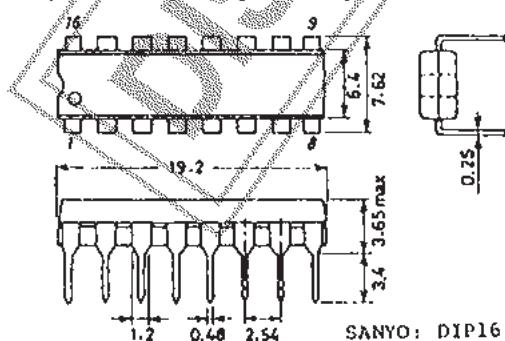
		unit
Recommended Supply Voltage	$V_{CC}$	3 V
Operating Voltage Range	$V_{CC op}$	1.8 to 5.4 V
Load Resistance	$R_L$	16 to 32 Ω

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

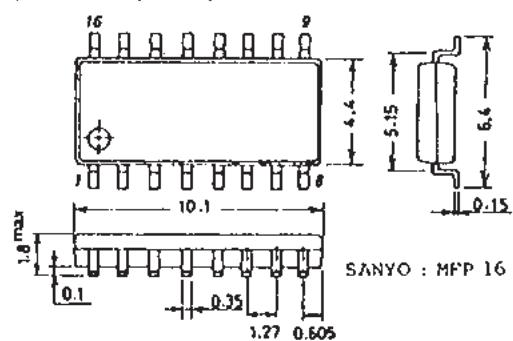
[Pre + Power Amp]		min	typ	max	unit
Quiescent Current	$I_{cco}$	R <sub>g</sub> = 2.2kΩ (preamp), R <sub>V</sub> = 0 (power amp)	6	9	18 mA
Crosstalk between Channels	CTI	R <sub>g</sub> = 2.2kΩ (preamp), R <sub>V</sub> = 0 (power amp)	29	35	dB
[Preamp]					
Voltage Gain (Open Loop)	V <sub>GO</sub>	75	85	dB	
Voltage Gain (Closed Loop)	V <sub>GL</sub>	36.5	38	39.5	dB
Maximum Output Voltage	V <sub>o</sub> max	T <sub>HD</sub> = 1%	0.1	0.2	V
Total Harmonic Distortion	THD1	V <sub>o</sub> = 0.15V	0.04	0.3	%

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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.

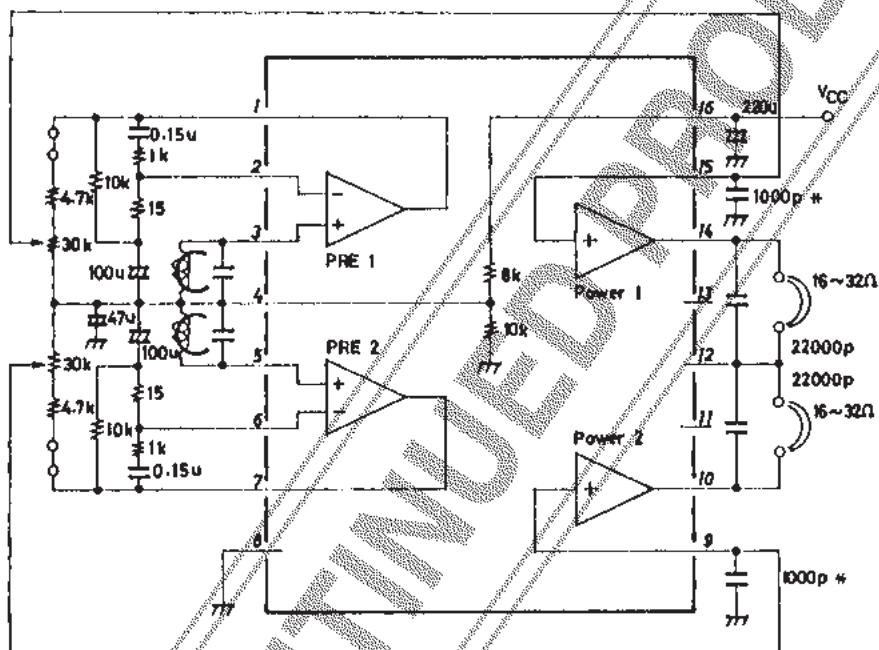
**SANYO Electric Co.,Ltd. Semiconductor Overseas Marketing Div.**  
15-13, 6 chome, Sotokanda, Chiyoda-ku, TOKYO 101 JAPAN

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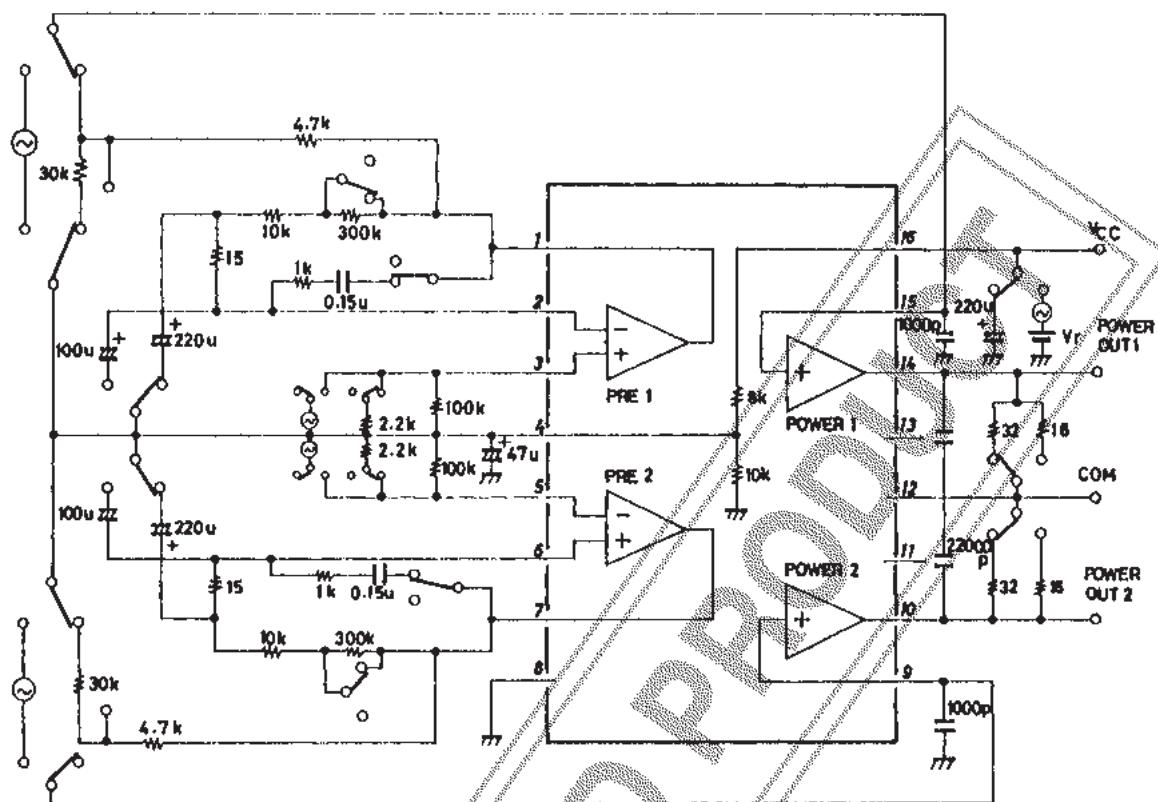
			min	typ	max	unit
Equivalent Input Noise Voltage	V <sub>NI</sub>	R <sub>g</sub> = 2.2kΩ, B.P.F. 20Hz to 20kHz		0.9	2.0	μV
Crosstalk between Channels [Power Amp]	CT2	V <sub>o</sub> = -20dBm	45	60		dB
Voltage Gain (Closed Loop)	VG2	V <sub>o</sub> = -12.5dBm	27	30	33	dB
Output Power	P <sub>o</sub>	THD = 10%, R <sub>L</sub> = 16Ω	22	38		mW
		THD = 10%, R <sub>L</sub> = 32Ω	14	20		mW
Total Harmonic Distortion	THD2	P <sub>o</sub> = 1mW		0.2	1.0	%
Input Resistance	R <sub>i</sub>		20	30	45	kΩ
Output Noise Voltage	V <sub>NO</sub>	R <sub>V</sub> = 0 (power amp), B.P.F. 20Hz to 20kHz		20	40	μV
Ripple Rejection	R <sub>r</sub>	V <sub>Cr</sub> = -20dBm, f = 100Hz, R <sub>V</sub> = 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 $\mu$ F may be changed to 100 $\mu$ 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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