

SANYO**LA4741****42W 4-Channel BTL Power Amplifier for Car Stereos****Preliminary****Overview**

The LA4741 is a 42W 4-channel BTL power amplifier for use in car stereo systems and requires only a minimum of external parts.

Features

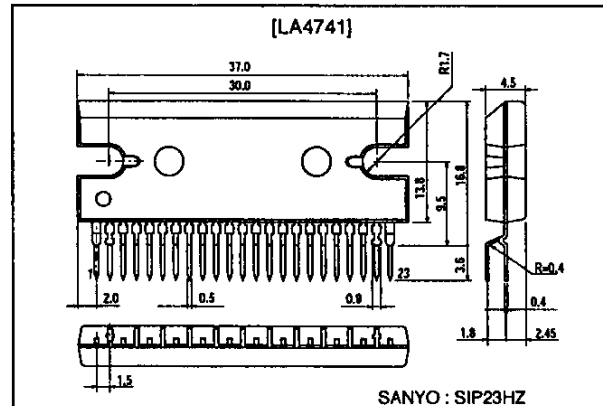
- Maximum output power rating
42W x 4 channels ($V_{cc} = 14.4V, 4\Omega, 1\text{ kHz}$)
- 38W x 4 channels ($V_{cc} = 13.7V, 4\Omega, 1\text{ kHz}$)
- Minimum number of external parts
(oscillation-blocking CR, NF and BS capacitor not required)

Functions

- Built-in standby switching
- Built-in protection circuitry (supply fault, ground fault, load short-circuit, overvoltage, thermal protection)
- 16V GND opened ground short withstand voltage (target)

Package Dimensions

unit:mm

3160-SIP23HZ**Specifications****Maximum Ratings at $T_a = 25^\circ\text{C}$**

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{cc\text{ max1}}$	With signal	18	V
	$V_{cc\text{ max2}}$	No signal	26	V
Maximum output current	$I_{o\text{ peak}}$		4.5/ch	A
Allowable power dissipation	$P_d\text{ max}$	With an arbitrary large	50	W
Operating temperature	T_{op}		- 40 to +85	$^\circ\text{C}$
Storage temperature	T_{stg}		- 40 to 150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{cc}		14.4	V
Recommended load impedance	R_L		4	Ω
Operating supply voltage range	V_{ccop}		9 to 18	V

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LA4741

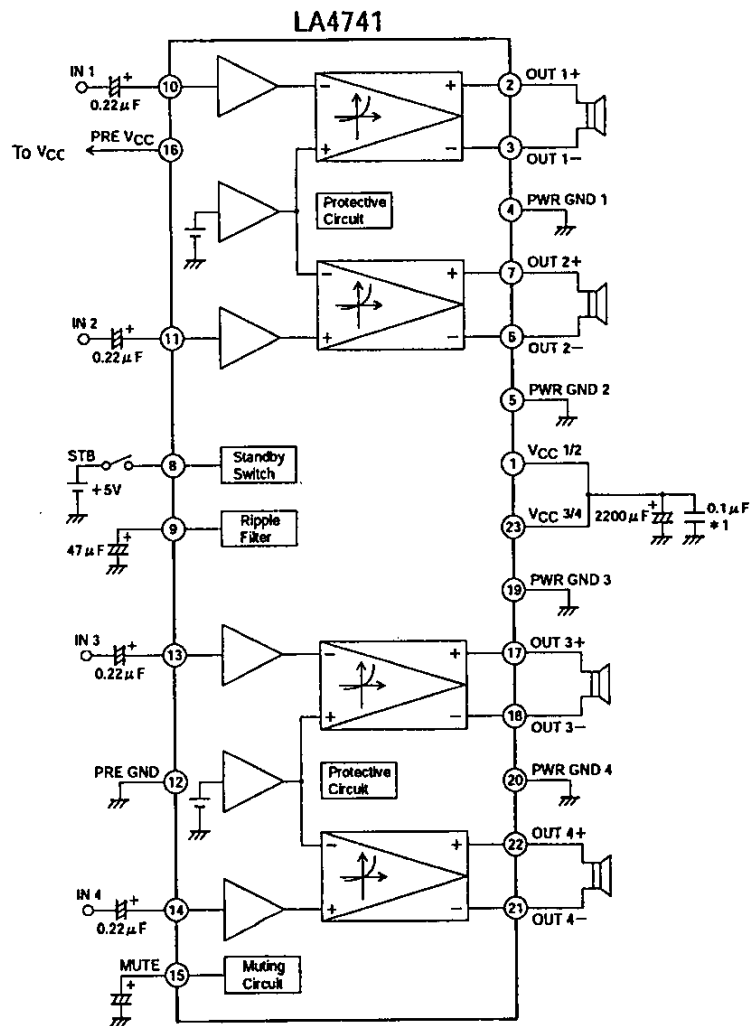
Operating Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC}=14.4\text{V}$, $f=1\text{ kHz}$, $R_L=4\ \Omega$, $R_g=600\ \Omega$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Quiescent current	I_{CCO}	$R_L=\infty, R_g=0$		200		mA
Standby current	I_{st}	$V_{st}=0\text{V}$			100	μA
Output offset voltage	$V_{N\text{offset}}$	$R_g=0$	-150		+150	mV
Voltage gain	VG	$V_o=0\text{ dBm}$		26		dB
Voltage gain differential	ΔVG		-1		+1	dB
Output power	P_{O1}	THD=10%		28		W
	$P_{O\text{max}1}$	$V_{CC}=13.7\text{V}, V_m=5\text{ Vrms}$		38		W
	$P_{O\text{max}2}$	$V_{CC}=14.4\text{V}, V_m=5\text{ Vrms}$		42		W
Total harmonic distortion	THD	$P_o=4\text{W}$		0.05		%
Channel separation	CHsep	$V_o=0\text{ dBm}, R_g=10\text{ k}\Omega$		65		dB
Ripple rejection	SVRR	$f_r=100\text{ Hz}, V_r=0\text{ dBm}, R_g=0$		60		dB
		B.P.F.=20 Hz to 20 kHz				
Output noise voltage	V_{No}	$R_g=0, \text{B.P.F.}=20\text{ Hz to }20\text{ kHz}$		100		μVrms

Sample Application Circuit and Block Diagram

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Depending on power supply wiring layout and other factors, oscillation may occur. In such a case, insert $0.1\ \mu\text{F}$ capacitors between each Vcc line and power ground.



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