



SANYO Semiconductors

DATA SHEET

LA47503

Monolithic Linear IC
For Car Audio
BTL 4ch (50W×4) Power IC

Overview

The LA47503 is a BTL 4ch (50W×4) power IC for car audio.

Functions

- Maximum output display 48W×4 ($V_{CC} = 14.4V$, 4Ω , 1kHz, average measurement)
- 43W×4 ($V_{CC} = 14.4V$, 4Ω , 1kHz)
- Equipped an electric mirror noise control pin.
- Built-in mute function.
- Built-in stand-by SW.
- Various types of built-in protection circuits (Air fault, ground fault, load short, over voltage and heat protections)
- GND open ground fault resistance amount 16V.

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum power supply voltage	$V_{CC} \text{ max1}$	When signal is ON	18	V
	$V_{CC} \text{ max2}$	When signal is OFF	26	V
Maximum output current	$I_O \text{ peak}$		4.5/ch	A
Allowable power dissipation	$P_d \text{ max}$	Infinite heatsink	50	W
Operating ambient temperature	T_{opr}		-40 to +85	$^\circ C$
Storage ambient temperature	T_{stg}		-40 to +150	$^\circ C$
Heat resistance between junction part and case	θ_{j-c}		1	$^\circ C/W$

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

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		14.4	V
Recommended load resistance	R_L		4	Ω
Operating supply voltage range	$V_{CC} \text{ op}$		9 to 18	V

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LA47503

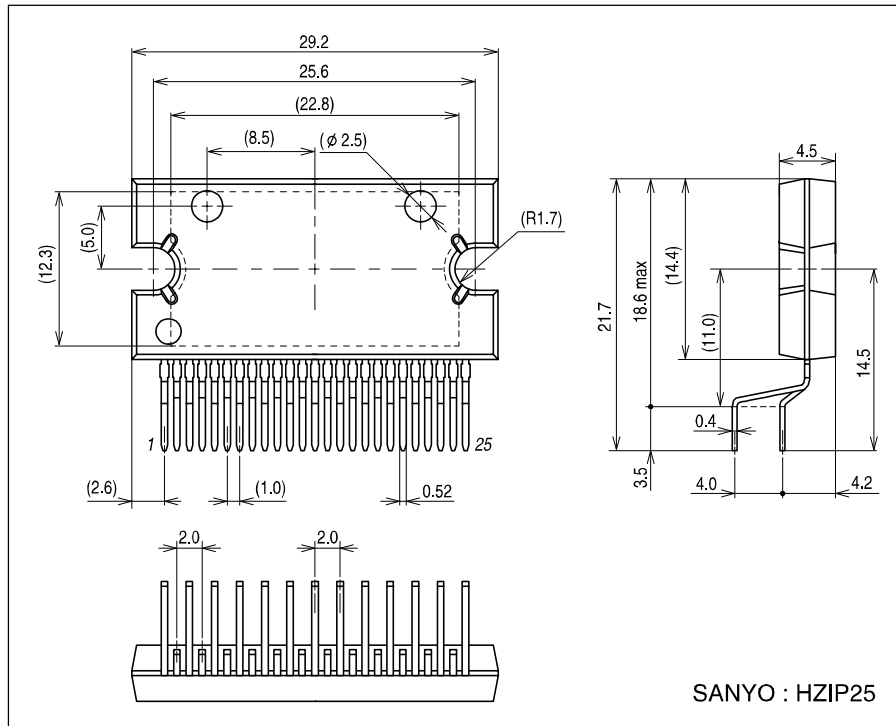
Electrical Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC} = 14.4\text{V}$, $f = 1\text{kHz}$, $R_L = 4\Omega$, $R_g = 600\Omega$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Current when signal is OFF	I_{CCO}	$R_L = \infty$, $R_g = 0$		200	350	mA
Stand-by current	I_{st}	$V_{st} = 0\text{V}$			10	μA
Output offset voltage	$V_{noffset}$	$R_g = 0$	-150		+150	mV
Voltage gain	VG	$V_O = 0\text{dBm}$	31	32	33	dB
Voltage gain difference	ΔVG		-1		+1	dB
Output electric power	P_{O1}	THD = 10%	24	29		W
	$P_{O \text{ max1}}$	$V_{CC} = 13.7\text{V}$, $V_{IN} = 5\text{Vrms}$		43		W
	$P_{O \text{ max2}}$	$V_{IN} = 2.5\text{Vrms}$		48		W
All higher harmonics distortion factor	THD	$P_O = 4\text{W}$		0.1	0.4	%
Channel separation	Chsep	$V_O = 0\text{dBm}$, $R_g = 10\text{k}\Omega$	55	70		dB
Ripple rejection ratio	SVRR	$f_r = 100\text{Hz}$, $V_r = 0\text{dBm}$, $R_g = 0$	50	70		dB
Output noise voltage	V_{no}	$R_g = 0$ B.P.F. = 20Hz to 20kHz		80	200	μVrms
Mute attenuation	Ma	$V_O = 20\text{dBm}$	70	90		dB

Package Dimensions

unit : mm

3236A



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