



# 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 ( $V_{CC} = 14.4V$ ,  $4\Omega$ , 1kHz, average measurement)
- 43W×4 ( $V_{CC} = 14.4V$ ,  $4\Omega$ , 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	$V_{CC\ max1}$	When signal is ON	18	V
	$V_{CC\ max2}$	When signal is OFF	26	V
Maximum output current	$I_O\ peak$		4.5/ch	A
Allowable power dissipation	$P_d\ max$	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	$\theta_{j-c}$		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	$\Omega$
Operating supply voltage range	$V_{CC\ op}$		9 to 18	V

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# LA47503

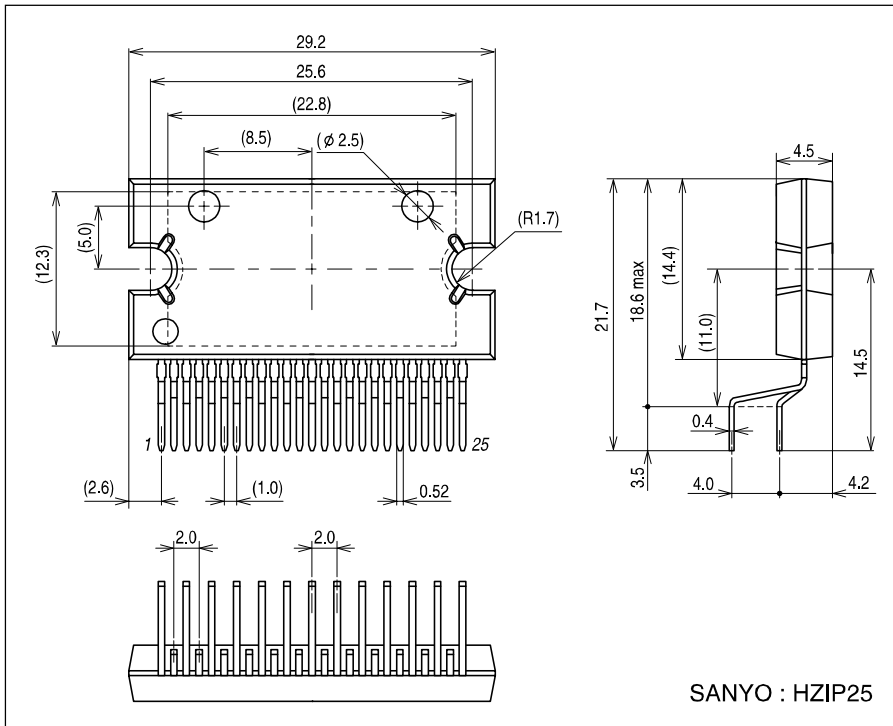
**Electrical Characteristics** at  $T_a = 25^\circ\text{C}$ ,  $V_{CC} = 14.4\text{V}$ ,  $f = 1\text{kHz}$ ,  $R_L = 4\Omega$ ,  $R_g = 600\Omega$

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	$\mu\text{A}$
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	$\Delta\text{VG}$		-1		+1	dB
Output electric power	$P_{O1}$	THD = 10%	24	29		W
	$P_{O\ max1}$	$V_{CC} = 13.7\text{V}, V_{IN} = 5\text{Vrms}$		43		W
	$P_{O\ max2}$	$V_{IN} = 2.5\text{Vrms}$		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	$V_{no}$	$R_g = 0\ \text{B.P.F.} = 20\text{Hz to } 20\text{kHz}$		80	200	$\mu\text{Vrms}$
Mute attenuation	Ma	$V_O = 20\text{dBm}$	70	90		dB

## Package Dimensions

unit : mm

3236A



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