

ILA1519B

2 x 6 WATT STEREO CAR RADIO POWER AMPLIFIER

GENERAL DESCRIPTION

The ILA1519B is an integrated class-B dual output amplifier in a 9-lead single in-line (SIL) plastic medium power package. The device is primarily developed for car radio applications.

Features

Requires very few external components

High output power

Fixed gain

Good ripple rejection

Mute/stand-by switch

Load dump protection

Capability to handle high energy on outputs ($V_p = 0\text{ V}$)

Thermally protected

Reverse polarity safe

Compatible with TDA1517 (except gain)

No switch-on/switch-off plop

Protected against electrostatic discharge

AC and DC short-circuit-safe to ground and V_p

QUICK REFERENCE DATA

parameter	conditions	symbol	min.	typ.	max.	unit
Supply voltage range						
operating		V_p	6,0	14,4	18,0	V
non-operating		V_p	-	-	30	V
load dump protected		V_p	-	-	45	V
Repetitive peak output current		I_{ORM}	-	-	2,5	A
Total quiescent current		I_{tot}		40	80	mA
Stand-by current		I_{sb}		0,1	100	mA
Switch-on current		I_{sw}			40	mA
Input impedance		$ Z_i $	50			k Ω
Output power	THD= 0,5%;4 Ω			5		W
	THD=10%;4 Ω			6		W
Channel separation		α	40			dB
Noise output voltage		$V_{no(rms)}$			150	μV
Supply voltage ripple rejection	f=100Hz	SVRR	40			dB
	f=1kHz to 10 kHz	SVRR	48			dB
Crystal temperature		T_c			150	$^{\circ}\text{C}$

PACKAGE OUTLINE: 9-lead SIL-bent-to-DIL; plastic (SOT110B).

PINNING

1	NV1	non-inverting input 1
2	GND1	ground (signal)
3	SVRR	supply voltage ripple rejection
4	OUT1	output 1
5	GND2	ground (substrate)
6	OUT2	output 2
7	V_p	supply voltage
8	M/SS	mute/stand-by switch
9	INV2	non-inverting input 2



ILA1519B

DC CHARACTERISTICS (note 1) $V_p = 14,4 \text{ V}$; $T_{amb} = 25 \text{ }^{\circ}\text{C}$; unless otherwise specified

parameter	conditions	symbol	min.	Typ.	max.	unit
Supply						
Supply voltage range	note 2	V_p	6,0	14,4	18,0	V
Quiescent current		I_P	-	40	80	mA
DC output voltage	note 3	V_O	-	6,95	-	V
Mute/stand-by switch						
Switch-on voltage level	see Fig.3	V_{ON}	8,5	-	-	V
Mute condition						
Output signal in mute position	$V_I = 1 \text{ V (max.)}$; $f = 20 \text{ Hz to } 15 \text{ kHz}$	V_{mute}	3,3	-	6,4	V
		V_O	-	-	20	mV
Stand-by condition						
DC current in stand-by condition		V_{sb}	0	-	2	V
Switch-on current		I_{sb}	-	-	100	μA
		I_{sw}	-	12	40	μA

AC CHARACTERISTICS (note 1)

$V_p=14,4\text{V}$; $R_L=4\Omega$; $f=1\text{kHz}$; $T_{amb}=25^{\circ}\text{C}$ unless otherwise specified

parameter	conditions	symbol	min.	typ.	max.	unit
Output power	note 4; THD = 0,5%	P_O	4	5	-	W
	THD = 10%	P_O	5,5	6,0	-	W
Total harmonic distortion	$P_O=1\text{W}$	THD	-	0,1	-	%
Low frequency roll-off	note 5; -3 dB	f_L	-	45	-	Hz
High frequency roll-off	-1 dB	f_H	20	-	-	kHz
Closed loop voltage gain		G_V	39	40	41	dB
Supply voltage ripple rejection						
ON	note 6					
ON	$f= 100 \text{ Hz}$	SVRR	40	-	-	dB
	$f= 10 \text{ Hz to } 10 \text{ kHz}$	SVRR	48	-	-	dB
mute		SVRR	48	-	-	dB
stand-by		SVRR	80	-	-	dB
Input impedance		I_{Zil}	50	60	75	$k\Omega$
Noise output voltage	note 7;					
ON	$R_S=0\Omega$	$V_{no(rms)}$	-	150	-	mV
ON	$R_S= 10 \text{ k}\Omega$	$V_{no(rms)}$	-	250	500	mV
mute	note 8	$V_{no(rms)}$	-	120	-	mV
Channel separation	$R_S= 10 \text{ k}\Omega$	a	40	-	-	dB
Channel balance		$IDGvl$	-	0,1	1	dB



Notes to the characteristics

1. All characteristics are measured using the circuit shown in Fig. 4.
2. The circuit is DC adjusted at $V_p = 6V$ to $18V$ and AC operating at $V_p = 8,5V$ to $18V$.
3. At $18V < V_p < 30V$ the DC output voltage $< V_p/2$.
4. Output power is measured directly at the output pins of the IC.
5. Frequency response externally fixed.
6. Ripple rejection measured at the output with a source impedance of 0Ω (maximum ripple amplitude of $2V$) and a frequency between $100Hz$ and $10kHz$.
7. Noise voltage measured in a bandwidth of $20Hz$ to $20kHz$.
8. Noise output voltage independent of R_n ($V_j = 0V$).