

ILA2616

2 X 12 W HI-FI AUDIO POWER AMPLIFIERS WITH MUTE

GENERAL DESCRIPTION

The ILA2616 are dual power amplifiers. The ILA2616 is supplied in a 9-lead single-in-line (SIL9) plastic power package (SOT131). They have been especially designed for mains fed applications, such as stereo radio and stereo TV.

FEATURES

- Requires very few external components
- No switch-on/switch-off clicks
- Input mute during switch-on and switch-off
- Low offset voltage between output and ground
- Excellent gain balance of both amplifiers
- Hi-fi in accordance with IEC 268 and DIN 45500
- Short-circuit proof and thermal protected
- Mute possibility.

QUICK REFERENCE DATA Stereo application

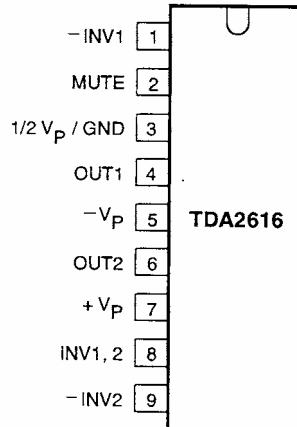
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$\pm V_p$	supply voltage range		7.5	-	21	V
P _O	output power	$V_p = \pm 16$ V; THD = 0.5%	-	12	-	W
G _V	internal voltage gain		-	30	-	dB
I _{Gy1}	channel unbalance		-	0.2	-	dB
a	channel separation		-	70	-	dB
S _{VRR}	supply voltage ripple rejection		-	60	-	dB
V _{no}	noise output voltage		-	70	- •	nV

ORDERING INFORMATION

EXTENDED TYPE NUMBER	PACKAGE			
	PINS	PIN POSITION	MATERIAL	CODE
ILA2616	9	SIL	plastic	SOT131^

PINING

SYMBOL	PIN	DESCRIPTION
-INV1	1	non-inverting input 1
MUTE	2	mute input
1/2V _p /GND	3	1/2 supply voltage or ground
OUT1	4	output 1
-V _p	5	supply voltage (negative)
OUT2	6	output 2
+V _p	7	supply voltage (positive)
INV1,2	8	inverting inputs 1 and 2
-INV2	9	non-inverting input 2



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CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Supply						
$\pm V_p$	supply voltage range		-	16	21	V
I_{ORM}	repetitive peak output current		-	2.2	-	A
Operating position; note 1						
$\pm V_p$	supply voltage range		7.5	16	21	V
I_P	total quiescent current	$R_L = \infty$	18	40	70	mA
P_o	output power	THD = 0.5% THD = 10%	10 12	12 15	- -	W W
THD	total harmonic distortion	$P_o = 6W$	-	0.15	0.2	%
B	power bandwidth	THD = 0.5%; note 2	-	20 to 20000	-	Hz
G_v	voltage gain.		29	30	31	dB
IG_vl	gain unbalance		-	0.2	1	dB
V_{no}	noise output voltage	note 3	-	70	140	nV
$ Z_{il} $	input impedance		14	20	26	k Ω
SVRR	supply voltage ripple rejection	note 4	40	60	-	dB
a	channel separation	$R_s = 0$	46	70	-	dB
I_{bias}	input bias current		-	0.3	-	nA
$ \Delta V_{eNol} $	DC output offset voltage		-	30	200	mV
$ \Delta V^{\wedge}I $	DC output offset voltage	between two channels	-	4	150	mV
MUTE POSITION (AT $I_{MUTE} \geq 300 \text{ mA}$)						
V_Q	output voltage	$V_i = 600 \text{ mV}$	-	0.3	1.0	mV
22-7	mute input impedance	note 7	6.7	9	11.3	k Ω
I_P	total quiescent current	$R_L = \infty$	18	40	70	mA
V_{no}	noise output voltage	note 3	-	70	140	uV
SVRR	supply voltage ripple rejection	note 4	40	55	-	dB
$ \Delta V_{GND} $	DC output offset voltage		-	40	200	mV
$ \Delta V_{off} $	offset voltage with respect to operating position		-	4	150	mV
I_2	current if pin 2 is connected to pin 5		-	-	8.2	mA
Mute position; note 5						
$\pm V_p$	supply voltage range		2	-	5.8	V
I_P	total quiescent current.	$R_L = \infty$	9	30	40	mA
V_Q	output voltage	$V_i = 600 \text{ mV}$	-	0.3	1.0	mV
V_{no}	noise output voltage	note 3	-	70	140	uV
SVRR	supply voltage ripple rejection	note 4	40	55	-	dB

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SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$ V_{GND} $	DC output offset voltage		-	40	200	mV
Operating position; note 6						
I_p	total quiescent current		18	40	70	mA
P_o	output power	THD = 0.5% THD = 10% THD = 0.5%; $R_L = 4 \Omega$ THD = 10%; $R_L = 4 \Omega$	5 6.5 - -	6 8 10 14	- - - -	W W W W
THD	total harmonic distortion	$P_o=4W$	-	0.13	0.2	%
B	power bandwidth	THD = 0.5%; note 2	-	40 to 20000	-	Hz
G_v	voltage gain		29	30	31	dB
$ G_{v1} $	gain unbalance		-	0.2	1	dB
V_{no}	noise output voltage	note3	-	70	140	HV
$ Z_{il} $	input impedance		14	20	26	kΩ
SVRR	supply voltage ripple rejection		35	44	-	dB
a	channel separation		-	45	-	dB

MUTE POSITION ($|I_{MUTE}| \geq 300 \mu A$)

V_Q	output voltage	$V_I = 600 \mu V$	-	0.3	1.0	mV
Z_{2-7}	mute input impedance	note?	6.7	9	11.3	kΩ
I_p	total quiescent current		18	40	70	mA
V_{no}	noise output voltage	note 3	-	70	140	mV
SVRR	supply voltage ripple rejection .	note 4	35	44	-	dB
$ \Delta V_{off} $	offset voltage with respect to operating position		-	4	150	mV
I_2	current if pin 2 is connected to pin 5		-	-	8.2	mA

Notes to the characteristics

1. $V_p = \pm 16 V$; $R_L = 8 \Omega$; $T_{amb} = 25^\circ C$; $f = 1 kHz$; symmetrical power supply $|I_{MUTE}| < 30 \mu A$. SEE Fig.4
2. The power bandwidth is measured at an output power of P_Q max -3 dB
3. The noise output voltage (RMS value) is measured at $R_g = 2 k\Omega$, unweighted (20 Hz to 20 kHz)
4. The ripple rejection is measured at $R_s = 0$ and $f = 100 Hz$ to $20 kHz$. The ripple voltage (200 mV) is applied in phase to the positive and the negative supply rails'. With asymmetrical power supplies, the ripple rejection is'measured at $f = 1 kHz$
5. $\pm V_p = 4 V$; $R_L = 8 \Omega$; $T_{amb} = 25^\circ C$; $f = 1 kHz$; symmetrical power supply. See Fig.4
6. $V_p = 24 V$; $R_L = 8 \Omega$; $T_{amb} = 25^\circ C$; $f = 1 kHz$; asymmetrical power supply $|I_{MUTE}| < 30 \mu A$. see Fig.5
7. The internal network at pin 2 is a resistor devider of typical 4 kΩ and 5 kilothe positive supply rail. At the connection of the 4 kΩ and 5 kΩ resistor a zener diode of typical 6.6 V is also connected to the positive supply rail. The spread of the zener voltage is 6.1 to 7.1 V.

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