

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

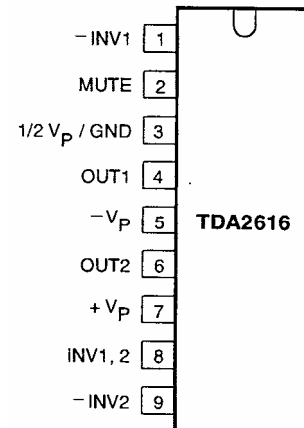
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$\pm V_p$	supply voltage range		7.5	-	21	V
P _O	output power	$V_p = \pm 16$ V; THD = 0.5%	-	12	-	W
G _V	internal voltage gain		-	30	-	dB
I _{Gyl}	channel unbalance		-	0.2	-	dB
a	channel separation		-	70	-	dB
SVRR	supply voltage ripple rejection		-	60	-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

ORDERING INFORMATION

EXTENDED TYPE NUMBER	PINS		PIN POSITION	MATERIAL	PACKAGE 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



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 = ∞	18	40	70	mA
P _O	output power	THD = 0.5%	10	12	-	W
		THD = 10%	12	15	-	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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
IGvl	gain unbalance		-	0.2	1	dB
Vno	noise output voltage	note3	-	70	140	nV
IZil	input impedance		14	20	26	k Ω
SVRR	supply voltage ripple rejection	note 4	40	60	-	dB
a	channel separation	Rs=0	46	70	-	dB
Ibias	input bias current		-	0.3	-	nA
IAVeNoI	DC output offset voltage		-	30	200	mV
IAV Δ	DC output offset voltage	between two channels	-	4	150	mV
MUTE POSITION (AT $I_{MUTE} \geq 300$ mA)						
VQ	output voltage	$V_I = 600$ mV	-	0.3	1.0	mV
Z ₂₋₇	mute input impedance	note 7	6.7	9	11.3	k Ω
IP	total quiescent current	$R_L = \infty$	18	40	70	mA
Vno	noise output voltage	note3	-	70	140	μ V
SVRR	supply voltage ripple rejection	note 4	40	55	-	dB
IAV _{GNDI}	DC output offset voltage		-	40	200	mV
IAV _{offI}	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
IP	total quiescent current.	$R_L = \infty$	9	30	40	mA
VQ	output voltage	$V_I = 600$ mV	-	0.3	1.0	mV
Vno	noise output voltage	note 3	-	70	140	μ V
SVRR	supply voltage ripple rejection	note 4	40	55	-	dB
IV _{GNDI}	DC output offset voltage		-	40	200	mV
Operating position; note 6						
IP	total quiescent current		18	40	70	mA
Po	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
GV	voltage gain		29	30	31	dB
IGvl	gain unbalance		-	0.2	1	dB
Vno	noise output voltage	note3	-	70	140	μ V
IZil	input impedance		14	20	26	k Ω
SVRR	supply voltage ripple rejection		35	44	-	dB
a	channel separation		-	45	-	dB
MUTE POSITION ($I_{MUTE} \geq 300$ mA)						
VQ	output voltage	$V_I = 600$ mV	-	0.3	1.0	mV
Z ₂₋₇	mute input impedance	note?	6.7	9	11.3	k Ω
IP	total quiescent current		18	40	70	mA
Vno	noise output voltage	note 3	-	70	140	mV
SVRR	supply voltage ripple rejection .	note 4	35	44	-	dB
IAV _{offI}	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; $R_i = 8 \Omega$; $T_{amb} = 25$ °C; $f = 1$ kHz; symmetrical power supply $I_{MUTE} < 30$ mA. SEE Fig.4
2. The power bandwidth is measured at an output power of P_o max -3 dB
3. The noise output voltage (RMS value) is measured at $R_g = 2$ k Ω , 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; $R_L = 8 \Omega$; $T_{amb} = 25$ °C; $f = 1$ kHz; symmetrical power supply. See Fig.4
6. $V_p = 24$ V; $R_i = 8 \Omega$; $T_{amb} = 25$ °C; $f = 1$ kHz; asymmetrical power supply $I_{MUTE} < 30$ mA. see Fig.5
7. The internal network at pin 2 is a resistor divider of typical 4 k Ω and 5 k Ω to the positive supply rail. At the connection of the 4 k Ω and 5 k Ω 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.

● 9-Pin Plastic Power Single-in-Line (SIL-9MPF, SOT 131-2)

