

2 x 12 W Hi-Fi Audio Power Amplifiers with Mute

GENERAL DESCRIPTION

The KKA2616 are dual power amplifiers. The KKA2616 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

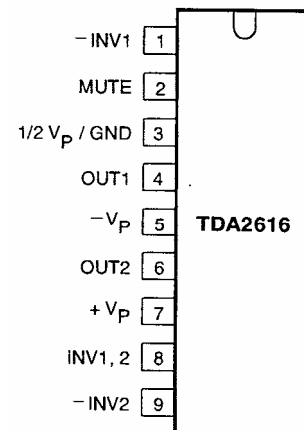
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$\pm V_p$	supply voltage range		7.5	-	21	V
PO	output power	$V_p = \pm 16$ V; THD = 0.5%	-	12	-	W
GV	internal voltage gain		-	30	-	dB
IGyl	channel unbalance		-	0.2	-	dB
a	channel separation		-	70	-	dB
SVRR	supply voltage ripple rejection		-	60	-	dB
Vno	noise output voltage		-	70	-•	nV

ORDERING INFORMATION

EXTENDED TYPE NUMBER	PACKAGE			
	PINS	PIN POSITION	MATERIAL	CODE
KKA2616	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	$R_L = \infty$	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
I Δ V _{eNoI}	DC output offset voltage		-	30	200	mV
I Δ V [^]	DC output offset voltage	between two channels	-	4	150	mV
MUTE POSITION (AT I_{MUTE} \geq 300 mA)						
V _Q	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
I _P	total quiescent current	R _L = ∞	18	40	70	mA
Vno	noise output voltage	note3	-	70	140	μ V
SVRR	supply voltage ripple rejection	note 4	40	55	-	dB
I Δ V _{GNDI}	DC output offset voltage		-	40	200	mV
I Δ V _{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
I _P	total quiescent current.	R _L = ∞	9	30	40	mA
V _Q	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
I _{V_{GNDI}}	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 Ω THD = 10%; R _L = 4 1.2	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
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}\geq300)mA)						
V _Q	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
I _P	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
I Δ V _{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 Ω ; T_{amb} = 25 $^{\circ}$ C; f = 1 kHz; symmetrical power supply I_{MUTE} < 30 [LIA. 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 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 Ω ; T_{amb} = 25 $^{\circ}$ C; f = 1 kHz; symmetrical power supply. See Fig.4
6. V_p = 24 V; R_i = 8 Ω ; T_{amb} = 25 $^{\circ}$ C; f = 1 kHz; asymmetrical power supply I_{MUTE} < 30 [LIA. 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)

