



# TDA7269

## LINEAR INTEGRATED CIRCUIT

### 14W+14W STEREO AMPLIFIER WITH MUTE & STAND-BY

#### DESCRIPTION

The UTC **TDA7269** is a stereo 14+14W class AB Dual Audio Power amplifier with mute and ST-BY control. This IC provides high output power of 14 watts per channel (at  $V_{CC}=\pm 16V$ ,  $f=1KHz$ ,  $THD = 10\%$ ,  $R_L = 8 \Omega$ ). It has low  $I_Q$  at stand-by mode and no POP at turn ON or OFF.

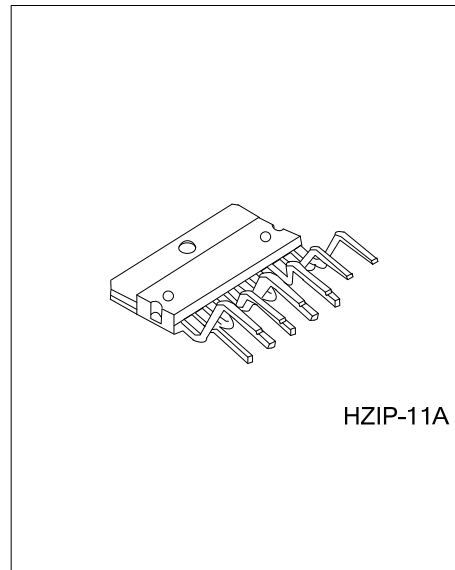
#### FEATURES

- \* High output power:  $P_{OUT} = 14 W/channel$  (Typ.)  
 $V_{CC} = \pm 16V$ ,  $R_L = 8\Omega$ ,  $f = 1KHz$ ,  $THD = 10\%$
- \* Operation supply voltage range ( $T_a = 25^\circ C$ )  
 $V_{CC(OPER)} = \pm 5 \sim \pm 20V$  ( $R_L = 8 \Omega$ )  
 $V_{CC(OPER)} = \pm 5 \sim \pm 15V$  ( $R_L = 4 \Omega$ )
- \* Split supply
- \* Built in overload protection circuit.
- \* Built in thermal shut down protector circuit.
- \* Built in audio muting circuit (POP free)
- \* Built in standby circuit.

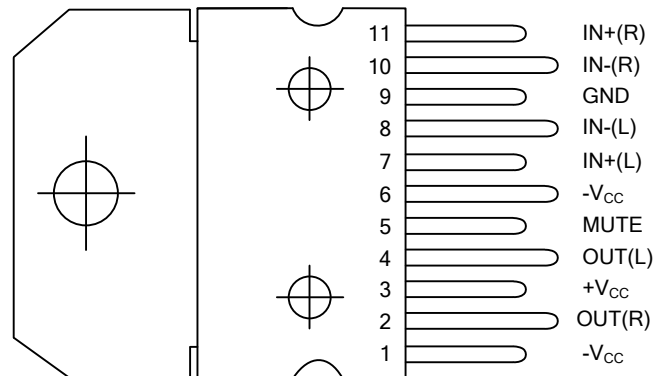
#### ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
TDA7269L-J11-A-T	TDA7269G-J11-A-T	HZIP-11A	Tube

<p>TDA7269L-J11-A-T</p> <p>(1)Packing Type  (2)Package Type  (3)Lead Free</p>	<p>(1) T: Tube  (2) J11-A:HZIP-11A  (3) L: Lead Free, G: Halogen Free</p>
---	---



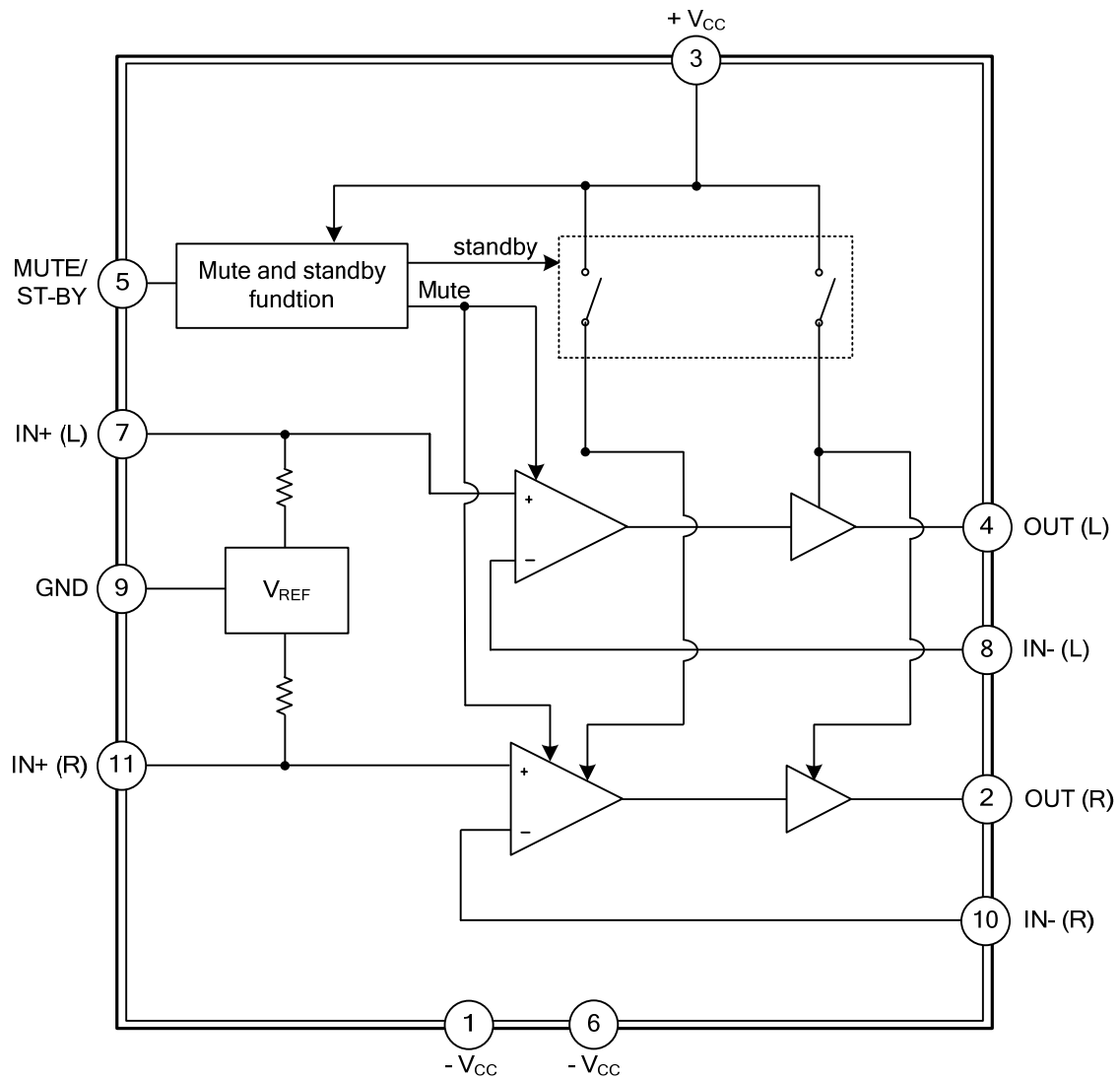
### ■ PIN CONNECTION



### ■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	$-V_{CC}$	Negative supply
2	OUT(R)	Output(right)
3	$+V_{CC}$	Positive Supply voltage
4	OUT(L)	Output(left)
5	MUTE	Mute/standby switch input
6	$-V_{CC}$	Negative supply
7	IN+(L)	non-inverting input(left)
8	IN-(L)	inverting input(left)
9	GND	Ground
10	IN-(R)	inverting input(right)
11	IN+(R)	non-inverting input(right)

### ■ BLOCK DIAGRAM



### ■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATING	UNIT
DC Supply Voltage	$V_{CC}$	$\pm 22$	V
Output Power Current (internally limited)	$I_{OUT}$	3	A
Total Power Dissipation ( $T_A=70^\circ\text{C}$ )	$P_D$	40	W
Operating Temperature	$T_{OPR}$	0 ~ +70	$^\circ\text{C}$
Storage and Junction Temperature	$T_{STG}$	-40 ~ +150	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

### ■ THERMAL DATA

PARAMETER	SYMBOL	RATING	UNIT
Junction to Case	$\theta_{JC}$	2.8	$^\circ\text{C/W}$

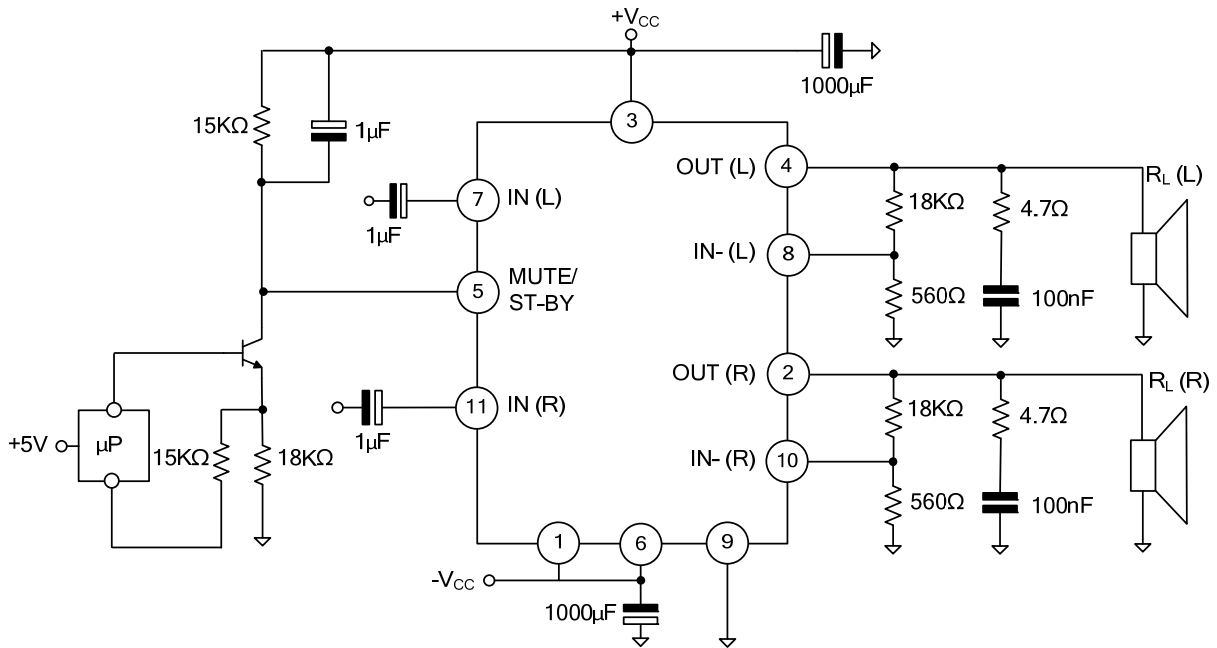
### ■ ELECTRICAL CHARACTERISTICS

( $V_{CC} = \pm 16\text{V}$ ;  $R_L = 8\Omega$ ;  $R_S = 50\Omega$ ;  $G_V = 30\text{dB}$ ;  $f = 1\text{KHz}$ ;  $T_A = 25^\circ\text{C}$ , unless otherwise specified)

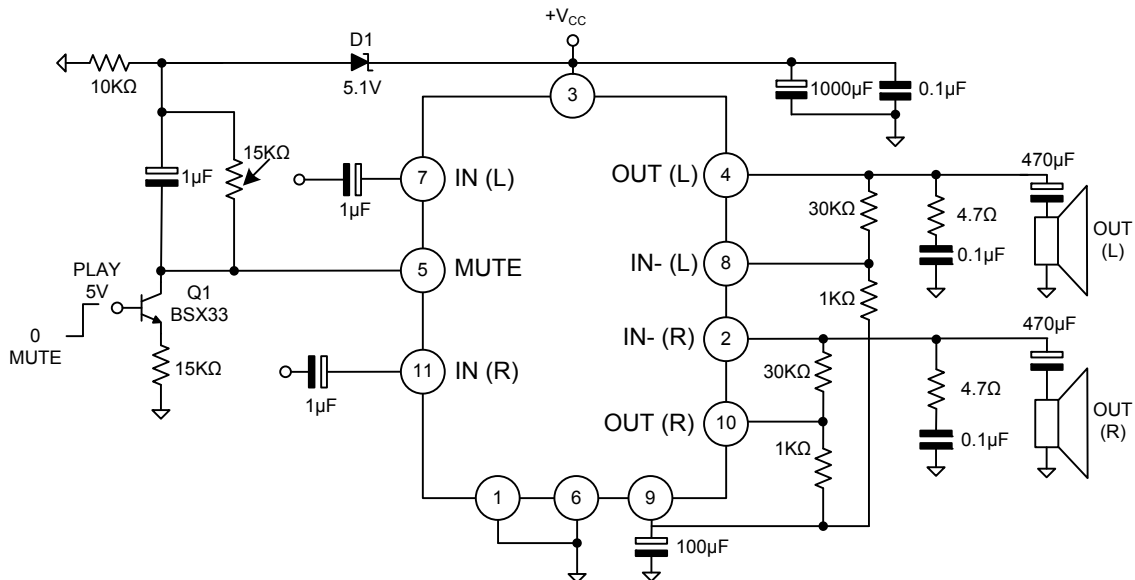
PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Supply Voltage Range	$V_{CC}$	$R_L = 8\Omega$	$\pm 5$		$\pm 20$	V
		$R_L = 4\Omega$	$\pm 5$		$\pm 15$	V
Total Quiescent Current	$I_Q$			60	100	mA
<b>INPUT SECTION</b>						
Input Offset Voltage	$V_{I(OFF)}$		-25		25	mV
Bias Current	$I_{BIAS}$			500		nA
Input Resistance	$R_{IN}$		15	20		K $\Omega$
<b>OUTPUT SECTION</b>						
Output Power	$P_{OUT}$	THD=10%	$V_{CC} = \pm 16\text{V}$ , $R_L = 8\Omega$	12	14	W
			$V_{CC} = \pm 12.5\text{V}$ , $R_L = 4\Omega$	8	10	W
		THD = 1%	$V_{CC} = \pm 16\text{V}$ , $R_L = 8\Omega$	9	11	W
			$V_{CC} = \pm 12.5\text{V}$ , $R_L = 4\Omega$	6	7.5	W
Total Harmonic Distortion	THD	$R_L = 8\Omega$ ; $P_{OUT} = 1\text{W}$ ; $f = 1\text{KHz}$ ;		0.03		%
		$R_L = 8\Omega$ ; $P_{OUT} = 0.1$ to $7\text{W}$ $f = 100\text{Hz} \sim 15\text{KHz}$			0.7	%
		$R_L = 4\Omega$ ; $P_{OUT} = 1\text{W}$ ; $f = 1\text{KHz}$		0.02		%
		$R_L = 4\Omega$ ; $V_{CC} = \pm 10\text{V}$ , $P_{OUT} = 0.1 \sim 5\text{W}$ $f = 100\text{Hz} \sim 15\text{KHz}$			1	%
Cross Talk	$C_T$	$f = 1\text{KHz}$		70		dB
		$f = 10\text{KHz}$	50	60		dB
Slew Rate	SR		6.5	10		V/ $\mu\text{s}$
Open Loop Voltage Gain	$G_{VO}$			80		dB
Total Output Noise	eN	A Curve		3		$\mu\text{V}$
		$f = 20\text{Hz}$ to $22\text{KHz}$		4	8	$\mu\text{V}$
Supply Voltage Rejection (each channel)	SVR	$f = 100\text{Hz}$ ; $V_R = 0.5\text{V}$		60		dB
<b>THERMAL PROTECTION</b>						
Thermal Shut-down Junction Temperature	$T_J$			145		$^\circ\text{C}$
<b>MUTE FUNCTION [ref: +V<sub>CC</sub>] (Note)</b>						
Mute /Play Threshold	$V_{TMUTE}$		-7	-6	-5	V
Mute Attenuation	$A_{MUTE}$		60	70		dB
<b>STAND-BY FUNCTIONS [ref: +V<sub>CC</sub>] (only for Split Supply)</b>						
Stand-by Mute threshold	$V_{TST-BY}$		-3.5	-2.5	-1.5	V
Stand-by Attenuation	$A_{ST-BY}$			110		dB
Quiescent Current ( Stand-by )	$I_{Q(ST-BY)}$			3	6	mA

Note: In mute condition the current drawn from Pin 5 must be  $\leq 650\mu\text{A}$

## APPLICATION CIRCUITS

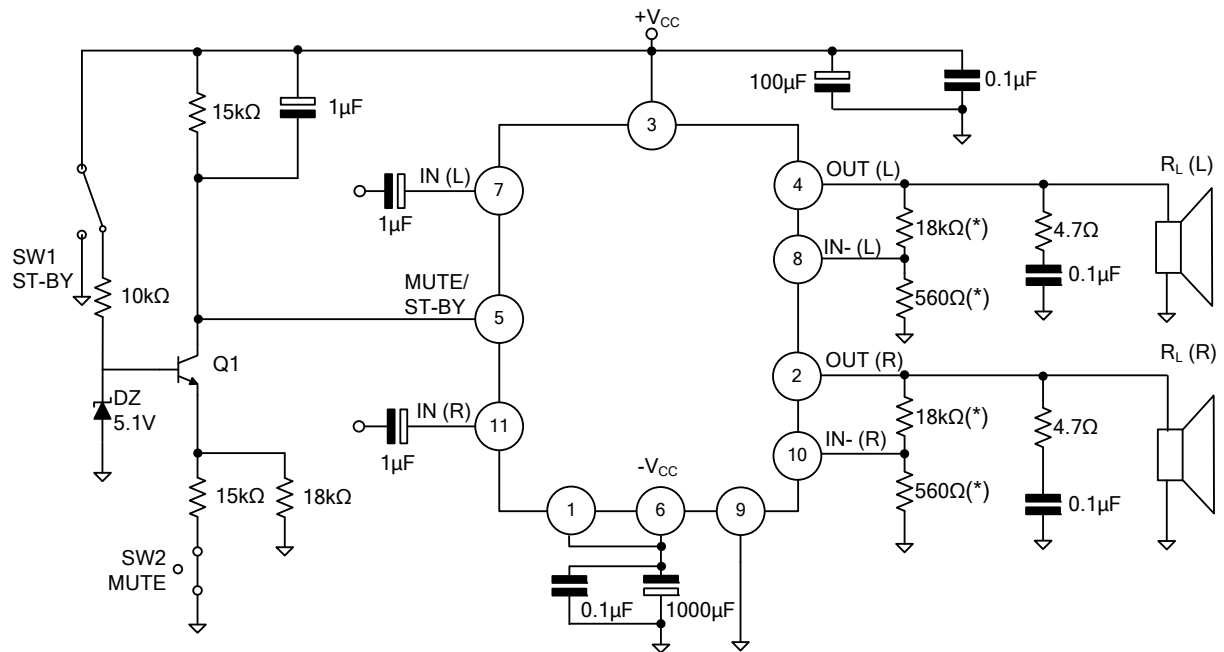


Typical Application Circuit



Single Supply Application

## ■ APPLICATION CIRCUITS(Cont.)



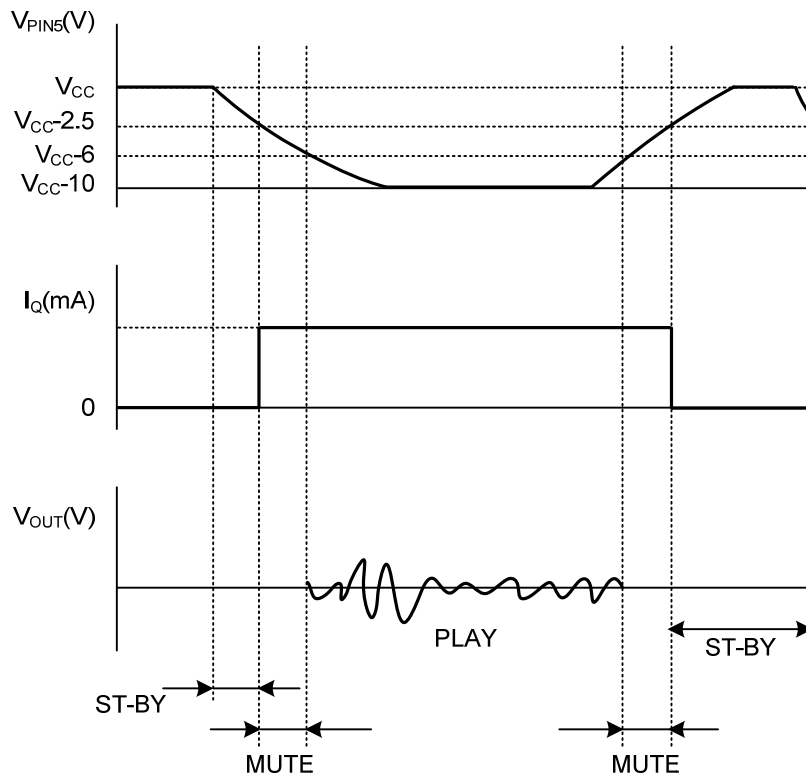
**Test and Application Circuit (Stereo Configuration)**

Note: (\*) Closed loop gain has to be  $\geq 25\text{dB}$

### ■ MUTE STAND-BY FUNCTION

The pin 5 (MUTE/STAND-BY) controls the amplifier status by two different thresholds, referred to  $+V_{CC}$ .

$V_{PIN5}$	Amplifier Status
$+V_{CC} > V_{PIN5} \geq +V_{CC} - 2.5V$	Stand-by Mode
$+V_{CC} - 2.5V > V_{PIN5} > +V_{CC} - 6V$	Mute Mode
$V_{PIN5} \leq +V_{CC} - 6V$	Play Mode



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.