



## 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.

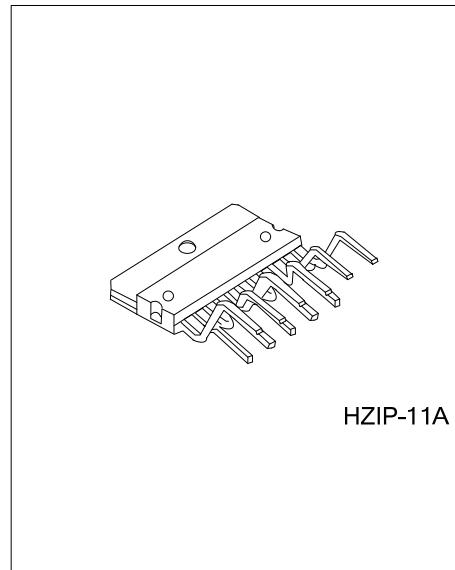
#### FEATURES

- \* High output power:  $P_{OUT}=14\text{ W/channel (Typ.)}$   
 $V_{CC}=\pm 16V$ ,  $R_L=8\Omega$ ,  $f=1KHz$ ,  $THD=10\%$
- \* Operation supply voltage range ( $T_a=25^\circ C$ )  
 $V_{CC(OPR)}=\pm 5\sim\pm 20V$  ( $R_L=8\Omega$ )  
 $V_{CC(OPR)}=\pm 5\sim\pm 15V$  ( $R_L=4\Omega$ )
- \* 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.

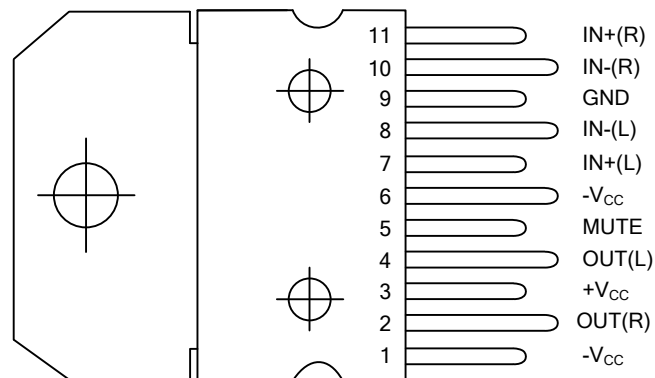
#### ORDERING INFORMATION

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>
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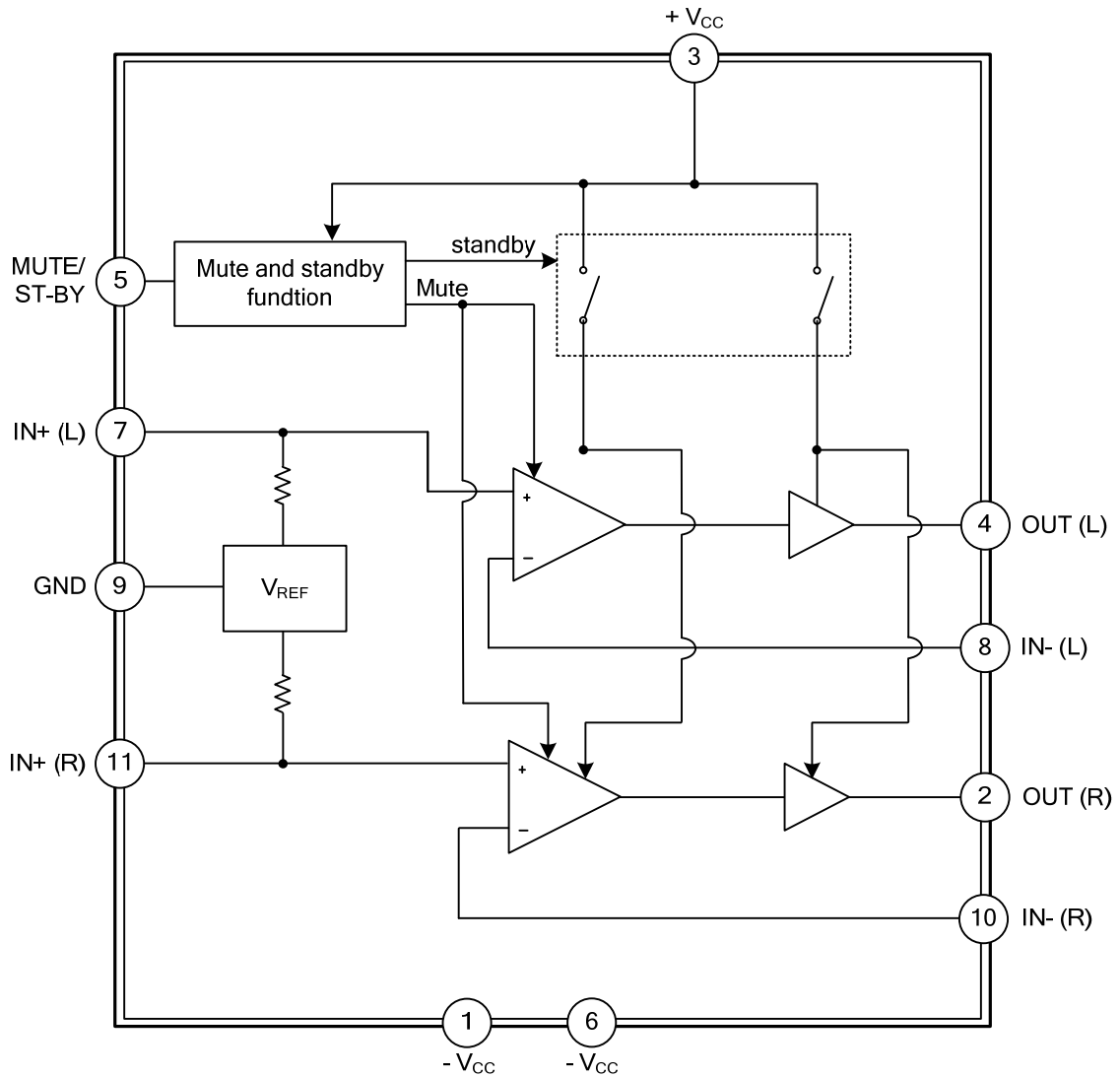
### ■ PIN CONNECTION



### ■ 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	$^\circ\text{C/W}$

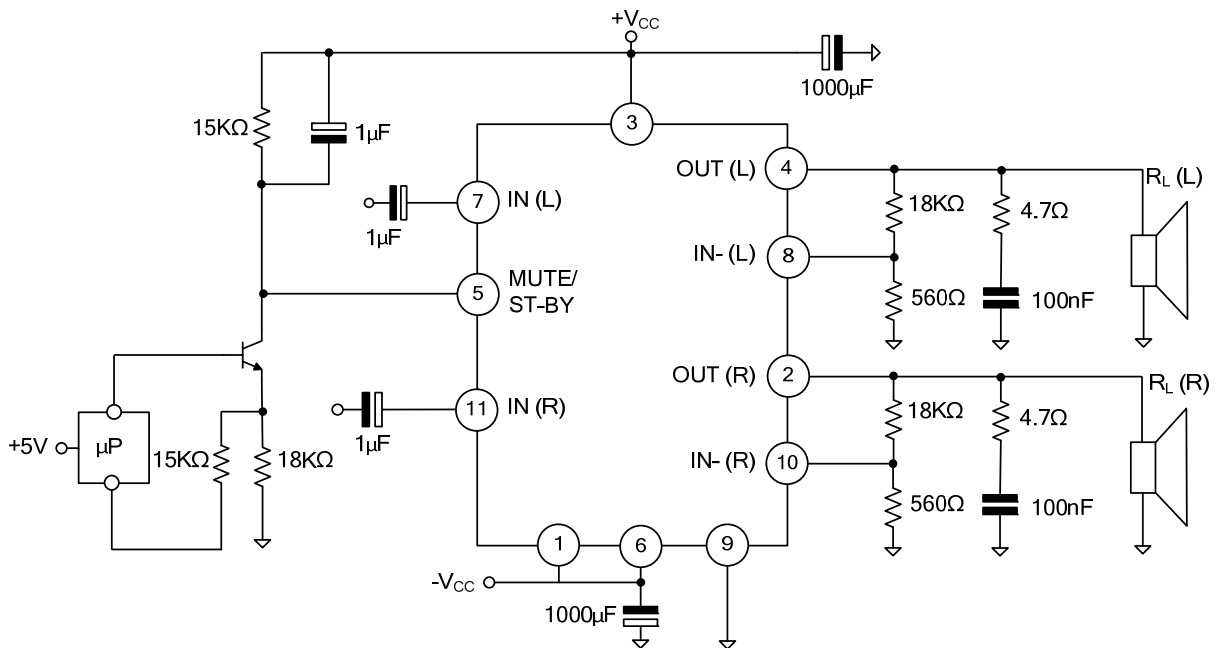
### ■ ELECTRICAL CHARACTERISTICS

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

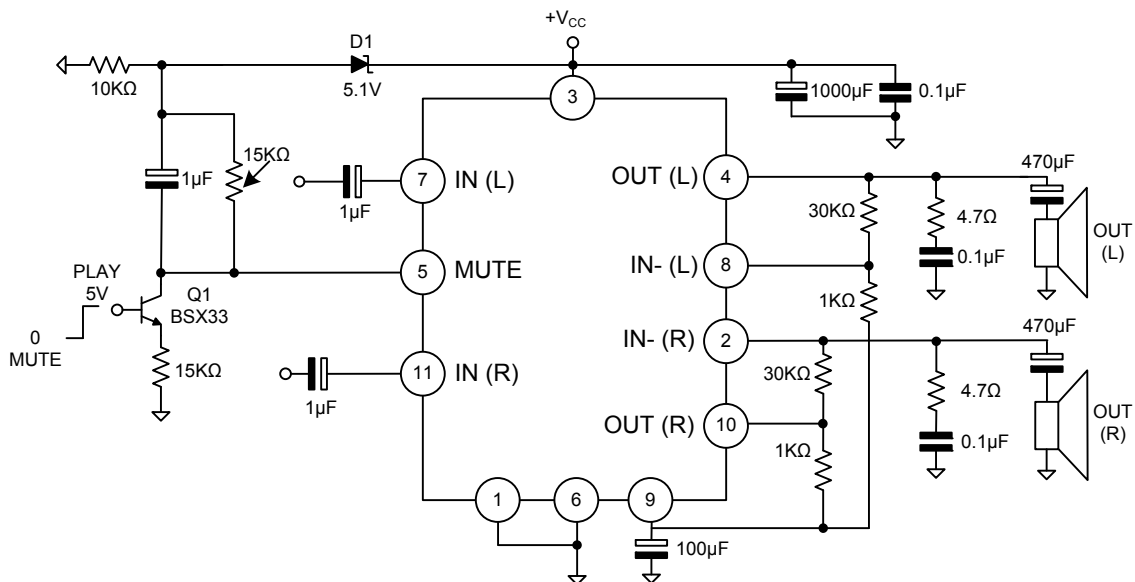
PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Supply Voltage Range	$V_{CC}$	$R_L = 8\Omega$	$\pm 5$		$\pm 20$	V
		$R_L = 4\Omega$	$\pm 5$		$\pm 15$	V
Total Quiescent Current	$I_Q$			60	100	mA
<b>INPUT SECTION</b>						
Input Offset Voltage	$V_{I(OFF)}$		-25		25	mV
Bias Current	$I_{BIAS}$			500		nA
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	$V_{T\_MUTE}$		-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	$V_{T\_ST-BY}$		-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

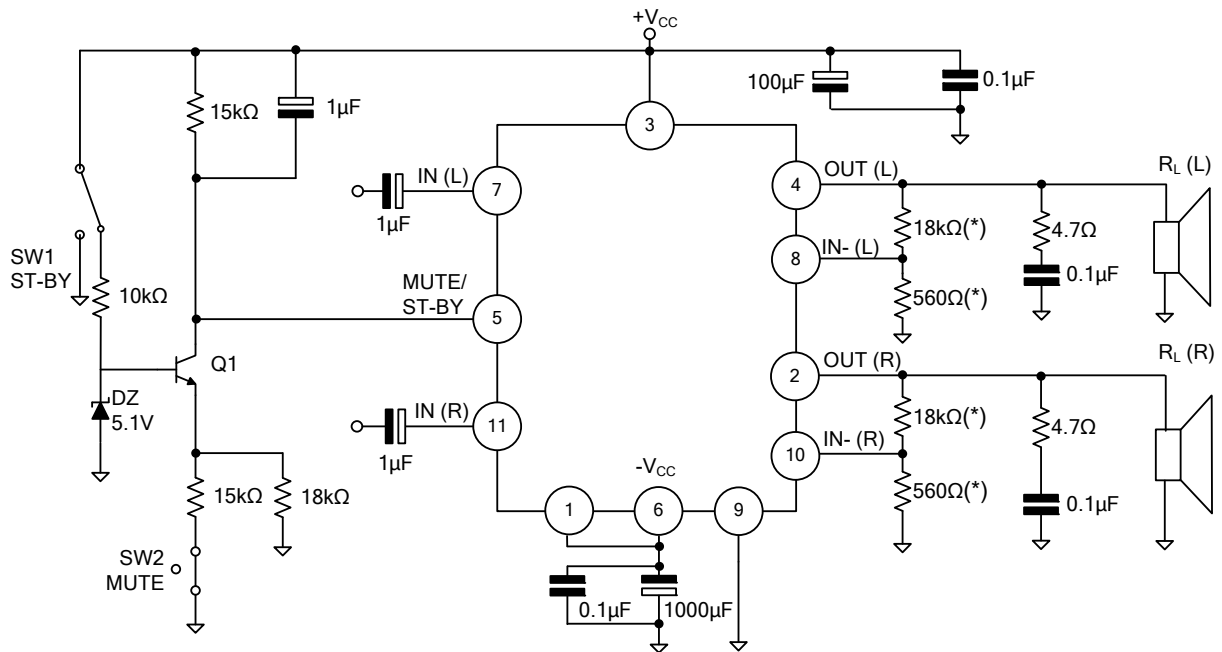


Typical Application Circuit



Single Supply Application

■ APPLICATION CIRCUITS(Cont.)



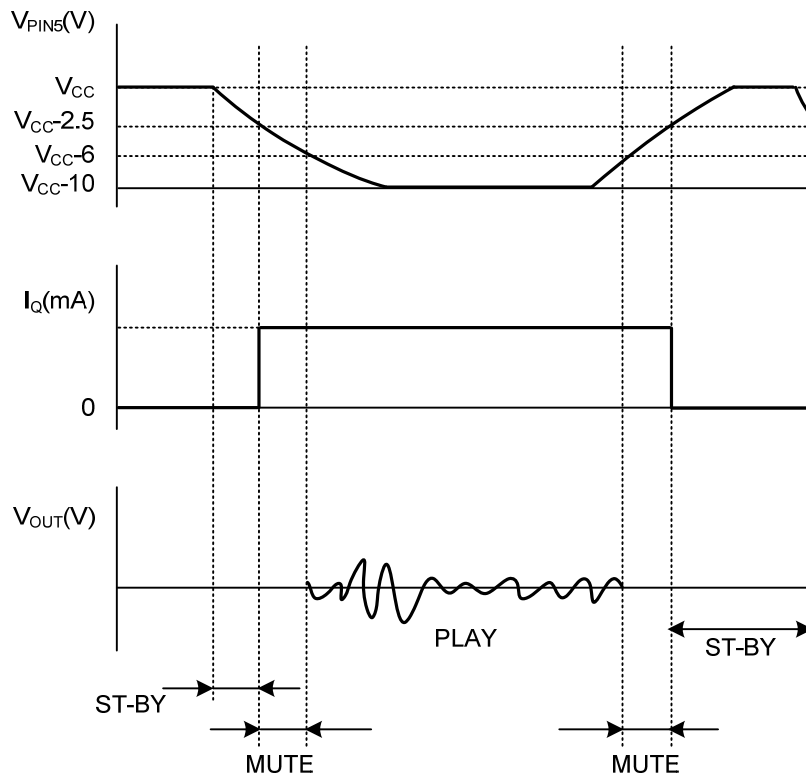
**Test and Application Circuit (Stereo Configuration)**

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



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