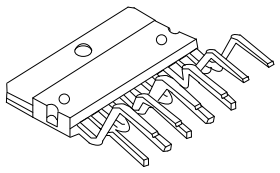
TDA7269

LINEAR INTEGRATED CIRCUIT

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



HZIP-11A

■ 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}=±16V, f =1KHz, THD = 10%, R_L = 8 Ω). It has low I_Q at stand-by mode and no POP at turn ON or OFF.

■ FEATURES

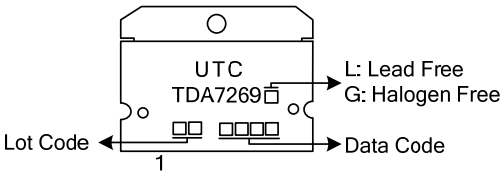
* High output power: P_{OUT} =14 W/channel (Typ.)
  V_{CC}= ±16V, R_L = 8Ω, f =1KHz, THD = 10%
* Operation supply voltage range (Ta = 25°C)
  $V_{CC(OPR)}$ = ±5~±20V (R_L = 8 Ω)
  $V_{CC(OPR)}$ = ±5~±15V (R_L = 4 Ω)
* Split supply
* Built in overload protection circuit.
* Built in thermal shut down protector circuit.
* Built in audio muting circuit (POP free)
* Built in standby circuit.

■ ORDERING INFORMATION

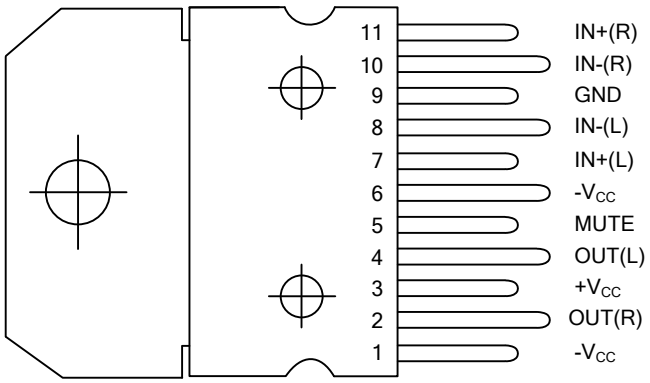
Ordering Number		Package	Packing
Lead Free	Halogen Free		
TDA7269L-J11-A-T	TDA7269G-J11-A-T	HZIP-11A	Tube

TDA7269G-J11-A-T (1)Packing Type (2)Package Type (3)Green Package	(1) T: Tube (2) J11-A:HZIP-11A (3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKIN



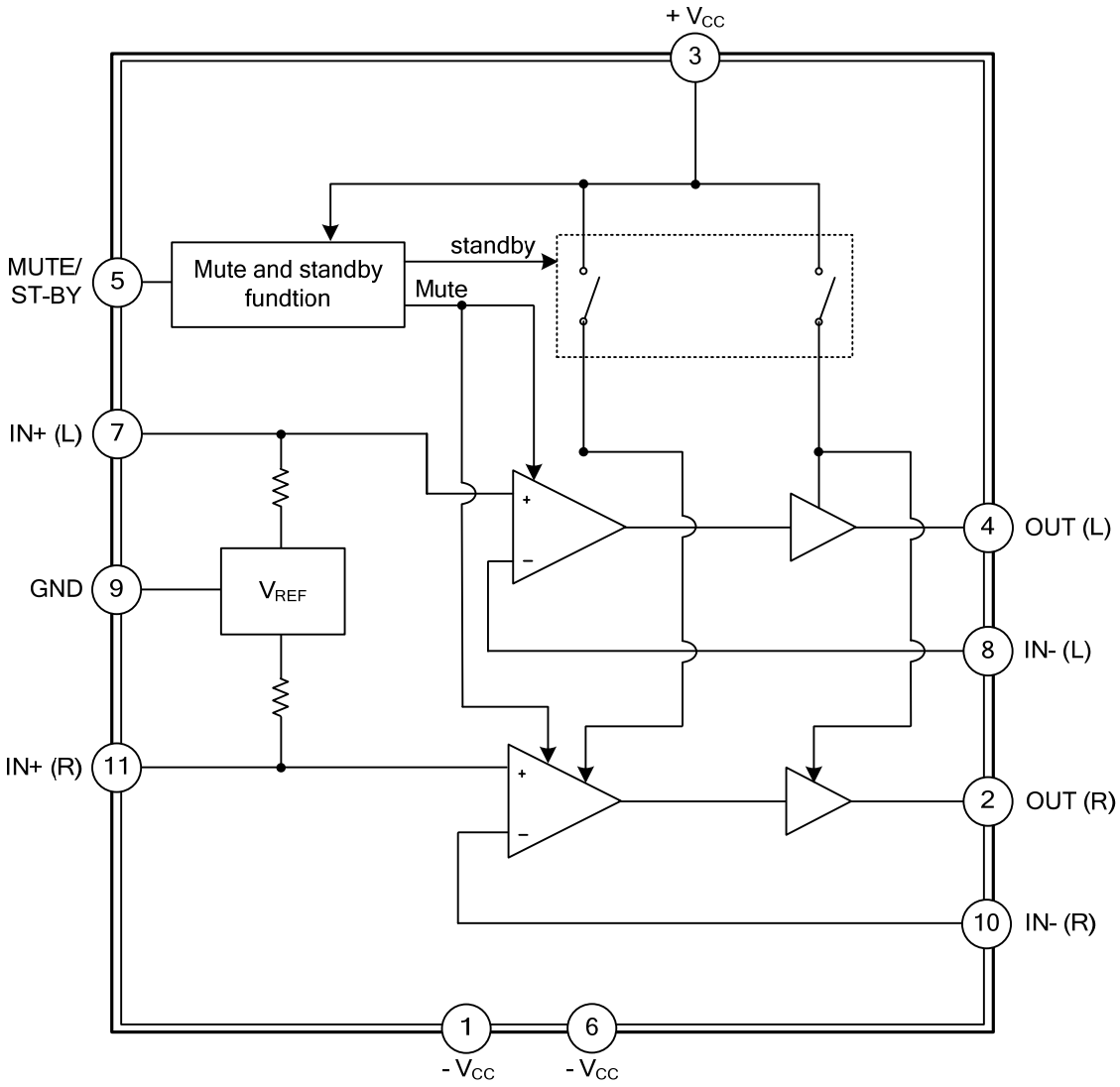
■ PIN CONNECTION



■ 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}	±22	V
Output Power Current (internally limited)	I_{OUT}	3	A
Total Power Dissipation (T_A=70°C)	P_D	40	W
Operating Temperature	T_{OPR}	0 ~ +70	°C
Storage and Junction Temperature	T_{STG}	-40 ~ +150	°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	θ_{JC}	2.8	°C/W

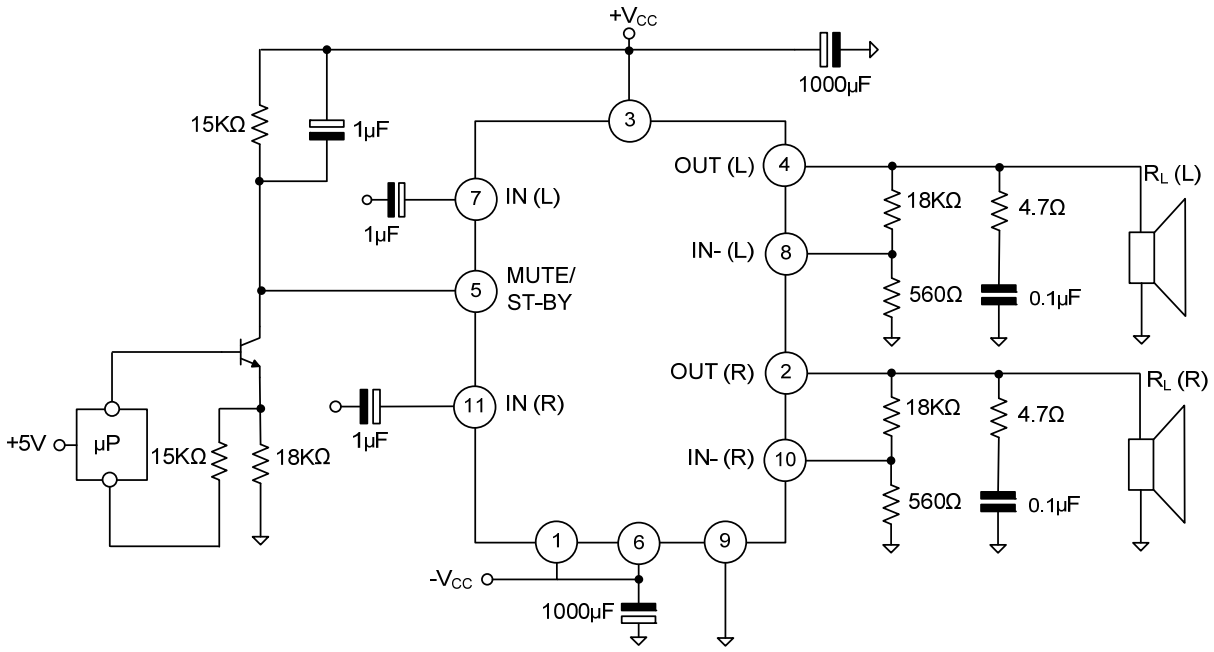
■ ELECTRICAL CHARACTERISTICS

(V_{CC} =±16V; R_L =8Ω; R_S =50Ω; G_V =30dB, f =1KHz; T_A =25°C, unless otherwise specified)

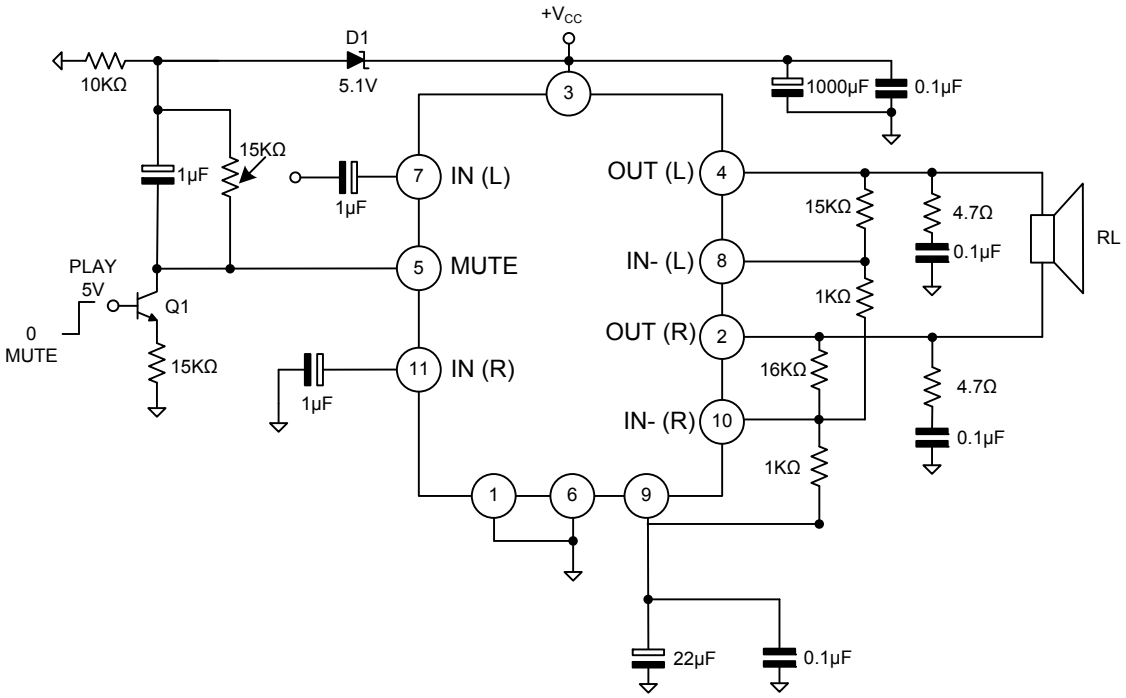
PARAMETER	SYMBOL	TEST CONDITION		MIN	TYP	MAX	UNIT
Supply Voltage Range	V_{CC}	R_L= 8Ω		±5		±20	V
		R_L= 4Ω		±5		±15	V
Total Quiescent Current	I_Q				60	100	mA
INPUT SECTION							
Input Offset Voltage	$V_{I(OFF)}$			-25		25	mV
Bias Current	I_{BIAS}				500		nA
Input Resistance	R_{IN}			15	20		KΩ
OUTPUT SECTION							
Output Power	P_{OUT}	THD=10%	V_{CC}=±16V, R_L= 8Ω	12	14		W
			V_{CC}=±12.5V, R_L= 4Ω	8	10		W
		THD = 1%	V_{CC}= ±16V, R_L= 8Ω	9	11		W
			V_{CC}=±12.5V, R_L= 4Ω	6	7.5		W
Total Harmonic Distortion	THD	R_L= 8Ω; P_{OUT}= 1W; f = 1KHz;			0.03		%
		R_L= 8Ω; P_{OUT}=0.1 to 7W f = 100Hz ~ 15KHz				0.7	%
		R_L= 4Ω; P_{OUT}= 1W; f = 1KHz			0.02		%
		R_L= 4Ω; V_{CC}= ±10V, P_{OUT}=0.1 ~ 5W f = 100Hz ~ 15KHz				1	%
Cross Talk	C_T	f = 1KHz			70		dB
		f = 10KHz		50	60		dB
Slew Rate	SR			6.5	10		V/μs
Open Loop Voltage Gain	G_{VO}				80		dB
Total Output Noise	eN	A Curve			3		μV
		f = 20Hz to 22KHz			4	8	μV
Supply Voltage Rejection (each channel)	SVR	f = 100Hz; V_R= 0.5V			60		dB
THERMAL PROTECTION							
Thermal Shut-down Junction Temperature	T_J				145		°C
MUTE FUNCTION [ref: +V_{CC}] (Note)							
Mute /Play Threshold	VT_{MUTE}			-7	-6	-5	V
Mute Attenuation	A_{MUTE}			60	70		dB
STAND-BY FUNCTIONS [ref: +V_{CC}] (only for Split Supply)							
Stand-by Mute threshold	VT_{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 ≤650μA.

■ APPLICATION CIRCUITS

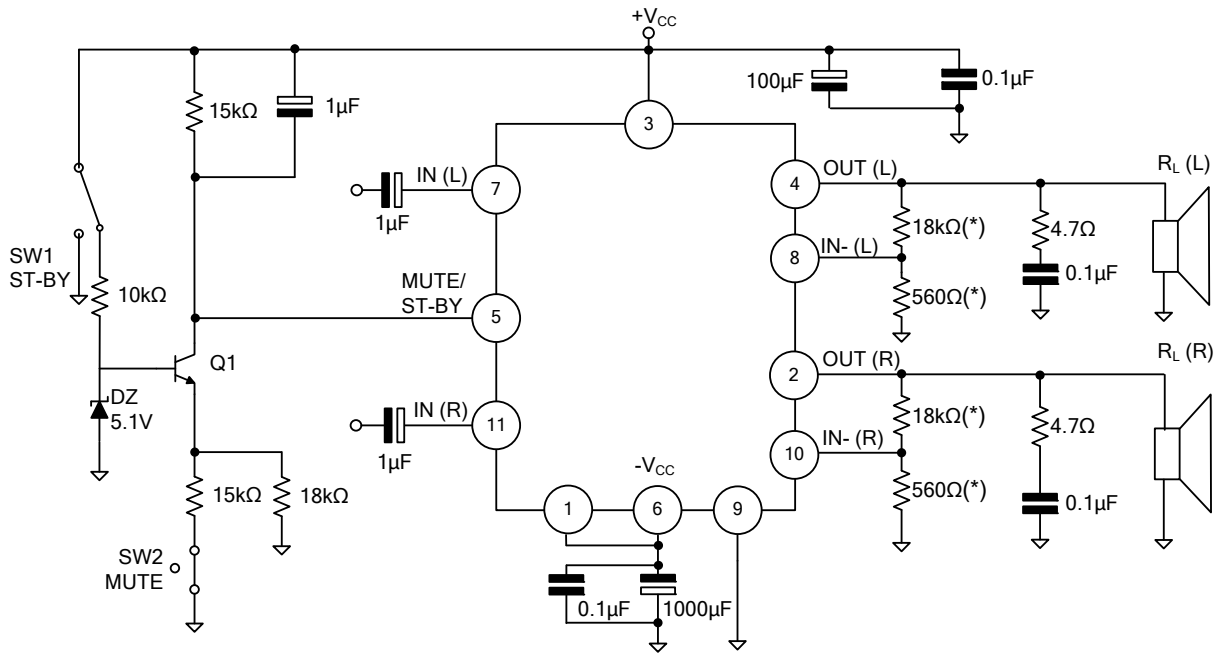


Typical Application Circuit



Single Supply Application

■ APPLICATION CIRCUITS(Cont.)



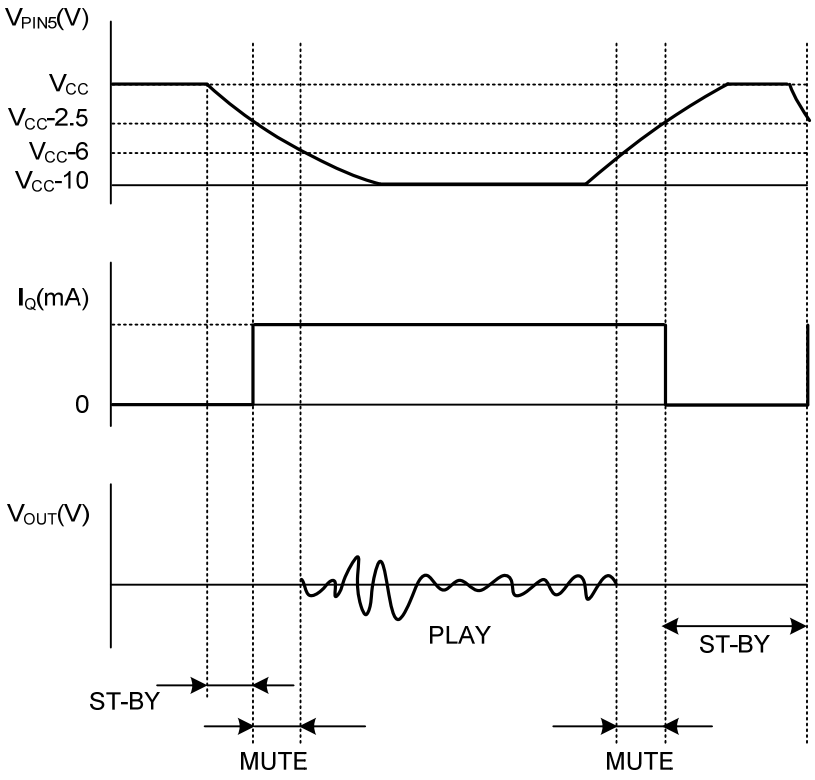
Test and Application Circuit (Stereo Configuration)

Note: (*) Closed loop gain has to be≥25dB

■ 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



■ TYPICAL CHARACTERISTICS