



TDA7265

Preliminary

LINEAR INTEGRATED CIRCUIT

25W+25W STEREO AMPLIFIER WITH MUTE & STAND-BY

DESCRIPTION

The UTC **TDA7265** is a stereo 25+25W class AB Dual Audio Power amplifier with mute and ST-BY control. This IC provides high output power of 25 watts per channel (at $V_{CC}=\pm 20V$, $f=1KHz$, $THD=10\%$, $R_L = 8 \Omega$). It has low I_Q at stand-by mode and no POP at turn ON or OFF.

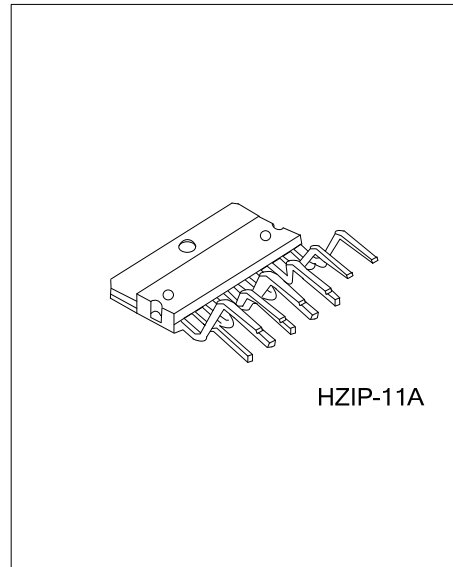
FEATURES

- * High output power: $P_{OUT} = 25 W/channel$ (Typ.)
 $V_{CC} = \pm 20V$, $R_L = 8\Omega$, $f = 1KHz$, $THD = 10\%$
- * Operation supply voltage range ($T_A = 25^\circ C$)
 $V_{CC(OPER)} = \pm 5 \sim \pm 25V$ ($R_L = 8 \Omega$)
 $V_{CC(OPER)} = \pm 5 \sim \pm 18V$ ($R_L = 4 \Omega$)
- * 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.

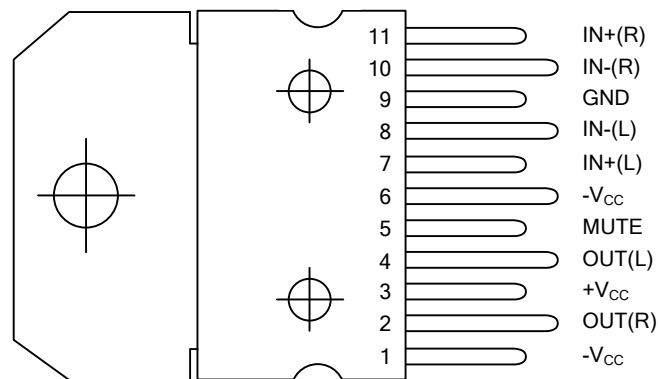
ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
TDA7265L-J11-A-T	TDA7265G-J11-A-T	HZIP-11A	Tube

<p>TDA7265L-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) G: Halogen Free, L: Lead Free</p>
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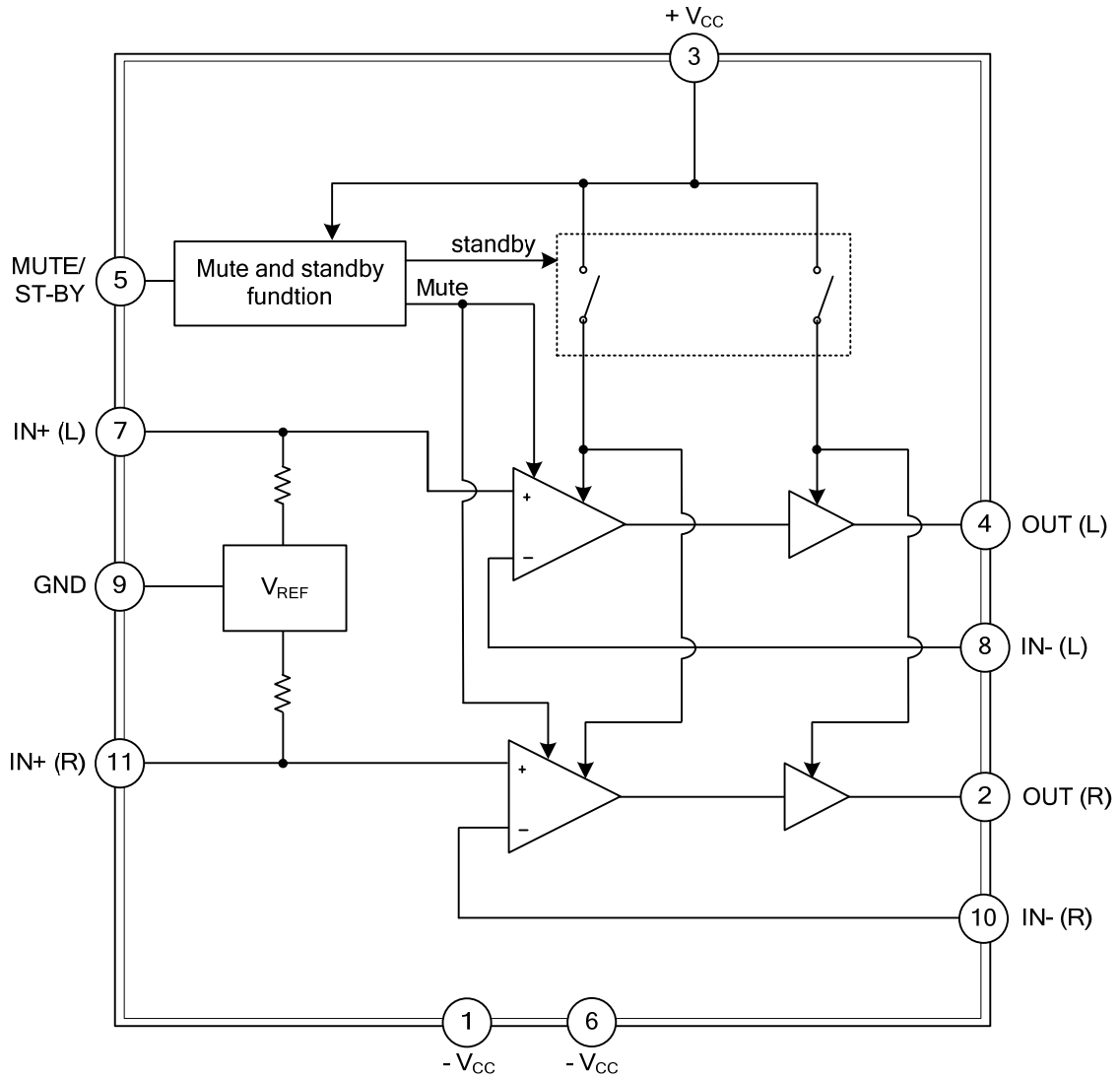
■ PIN CONFIGURATION



■ 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 RATING

PARAMETER	SYMBOL	RATINGS	UNIT
DC Supply Voltage	V_{CC}	± 25	V
Output Power Current (internally limited)	I_{OUT}	4.5	A
Power Dissipation ($T_A=70^\circ\text{C}$)	P_D	30	W
Junction Temperature	T_J	+150	$^\circ\text{C}$
Operating Temperature	T_{OPR}	-20~85	$^\circ\text{C}$
Storage 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	θ_{JC}	2	$^\circ\text{C}/\text{W}$

■ ELECTRICAL CHARACTERISTICS

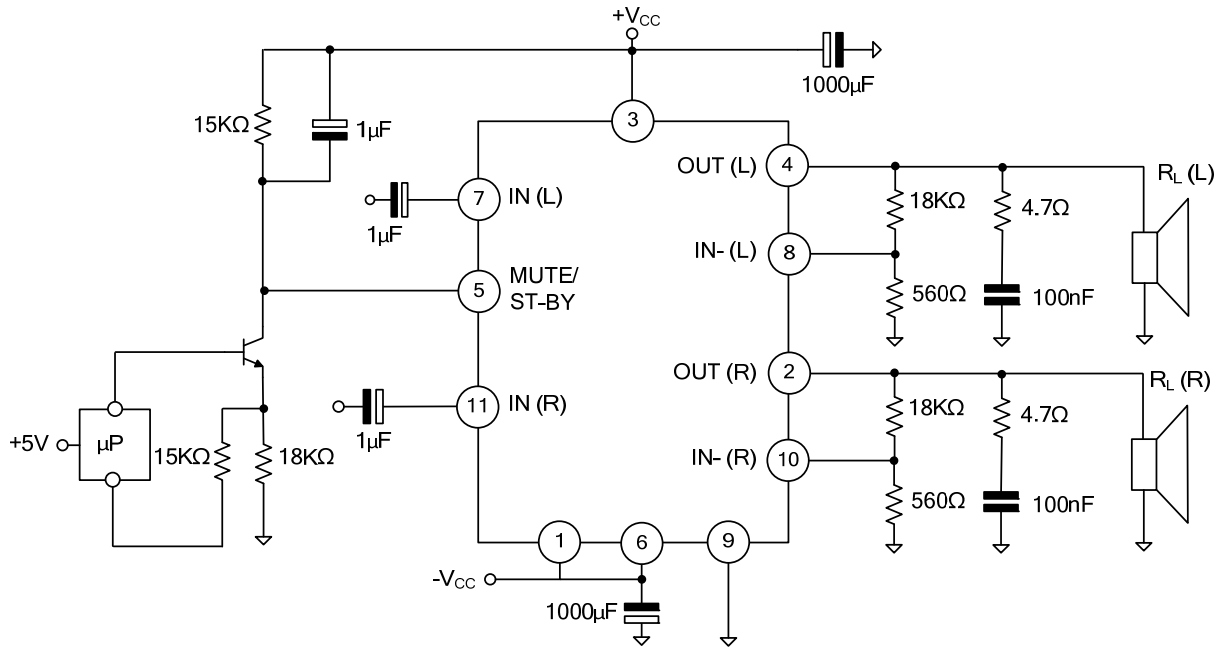
($V_{CC} = \pm 20\text{V}$, $R_L = 8\Omega$, $R_S = 50\Omega$, $G_V = 30\text{dB}$, $f = 1\text{KHz}$, $T_A = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Supply Voltage Range	V_{CC}		± 5		± 25	V
Total Quiescent Current	I_Q			80	130	mA
INPUT SECTION						
Input Offset Voltage	$V_{I(OFF)}$		-20		20	mV
Bias Current	I_{BIAS}			500		nA
Input Resistance	R_{IN}		15	20		K Ω
OUTPUT SECTION						
Output Power	P_{OUT}	THD=10%	$V_{CC}=\pm 20\text{V}$, $R_L = 8\Omega$	20	25	W
			$V_{CC}=\pm 16\text{V}$, $R_L = 4\Omega$		25	W
		THD = 1%	$V_{CC} = \pm 20\text{V}$, $R_L = 8\Omega$		20	W
			$V_{CC}=\pm 16\text{V}$, $R_L = 4\Omega$		20	W
Total Harmonic Distortion	THD	$R_L = 8\Omega$, $P_{OUT} = 1\text{W}$, $f = 1\text{KHz}$		0.01		%
		$R_L = 8\Omega$, $P_{OUT} = 0.1 \sim 15\text{W}$, $f = 100\text{Hz} \sim 15\text{KHz}$			0.7	%
		$R_L = 4\Omega$, $P_{OUT} = 1\text{W}$, $f = 1\text{KHz}$		0.02		%
		$R_L = 4\Omega$, $V_{CC} = \pm 16\text{V}$, $P_{OUT} = 0.1 \sim 12\text{W}$, $f = 100\text{Hz} \sim 15\text{KHz}$			1	%
Cross Talk	C_T	$f = 1\text{KHz}$		70		dB
		$f = 10\text{KHz}$		60		dB
Slew Rate	SR			10		V/ μs
Open Loop Voltage Gain	G_{VO}			80		dB
Total Output Noise	eN	A Curve		3		μV
		$f = 20\text{Hz to } 22\text{KHz}$		4	8	μV
Supply Voltage Rejection (each channel)	SVR	$f = 100\text{Hz}$, $V_R = 0.5\text{V}$		60		dB

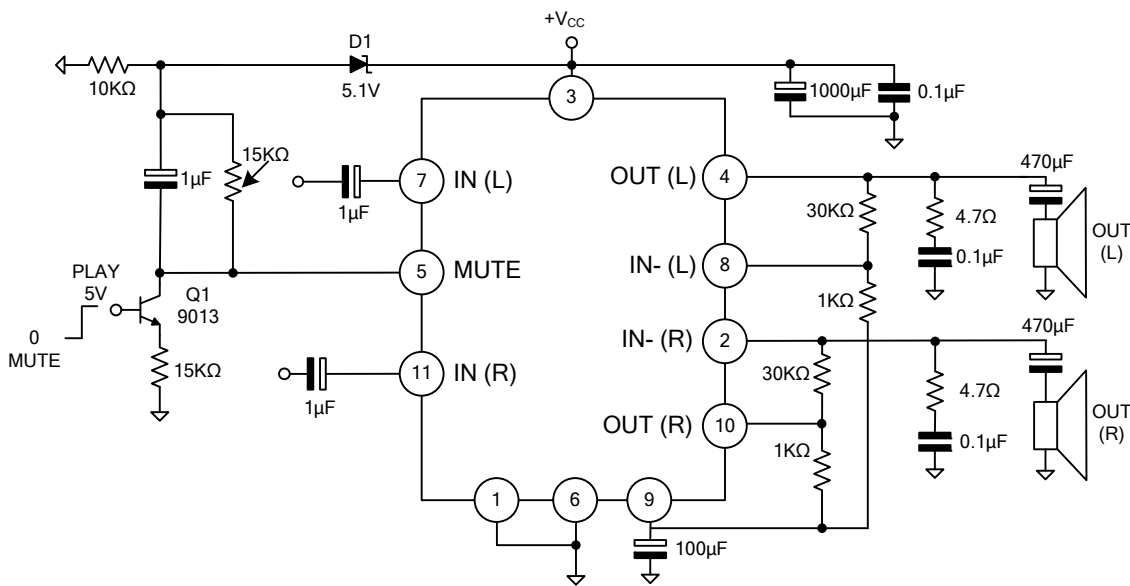
■ ELECTRICAL CHARACTERISTICS(Cont.)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
THERMAL PROTECTION						
Thermal Shut-down Junction Temperature	T_J			145		°C
MUTE FUNCTION						
Mute /Play Threshold	V_{T_MUTE}		-7	-6	-5	V
Mute Attenuation	A_{MUTE}		60	70		dB
STAND-BY FUNCTIONS						
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		mA

■ TYPICAL APPLICATION CIRCUIT

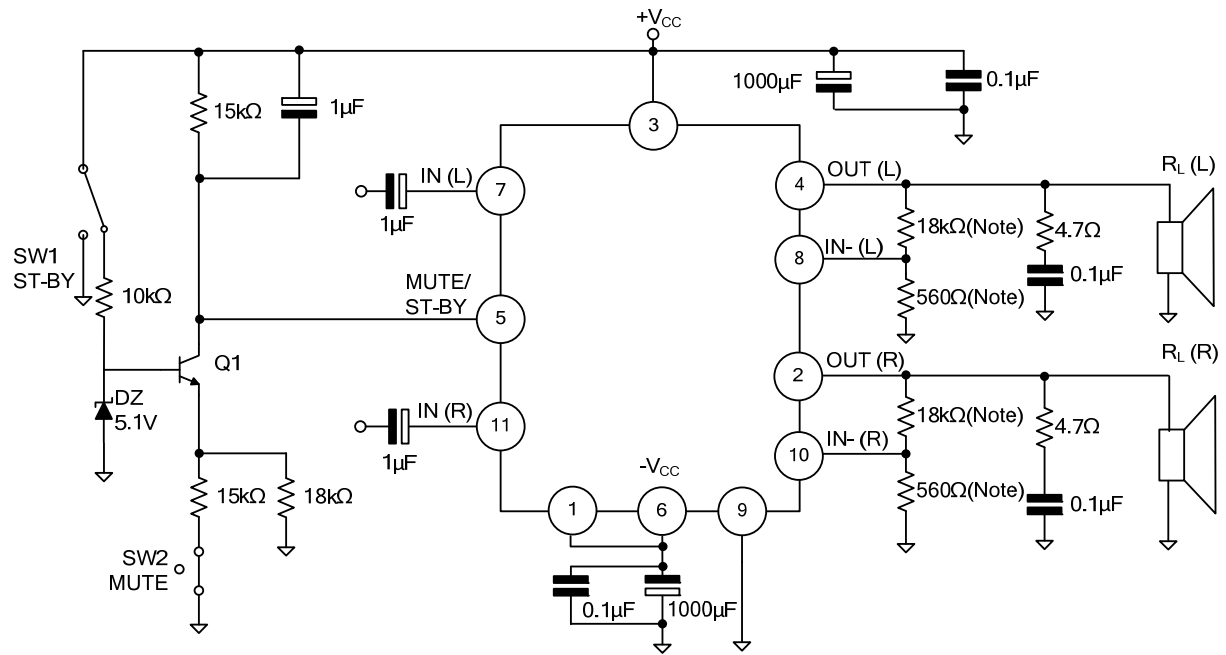


Typical Application Circuit



Single Supply Application

■ TYPICAL APPLICATION CIRCUIT(Cont.)



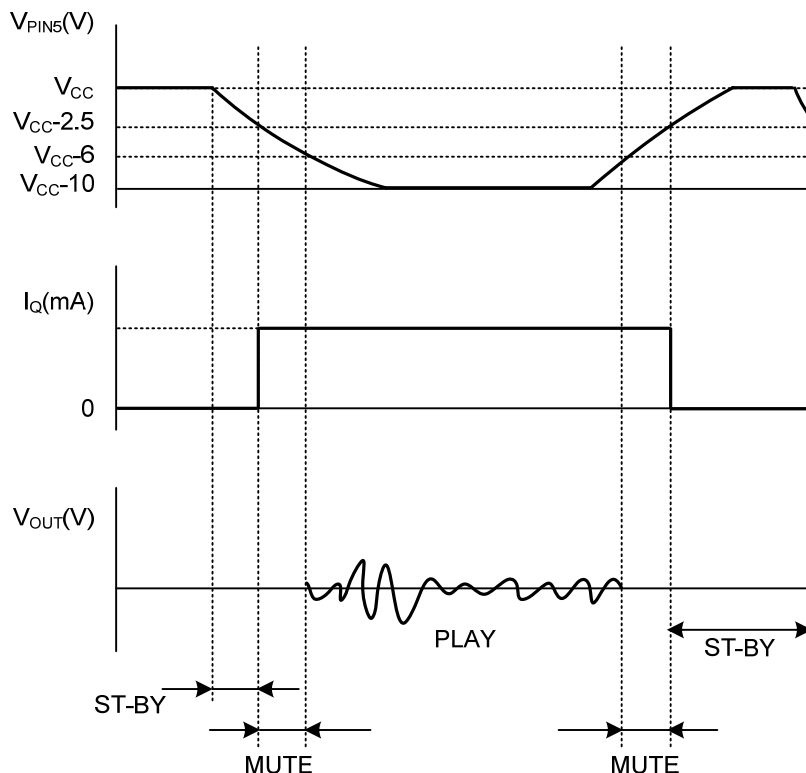
Note: Closed loop gain has to be $\geq 25\text{dB}$

Test and Application Circuit (Stereo Configuration)

■ 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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