

## TDA7360

Preliminary

CMOS IC

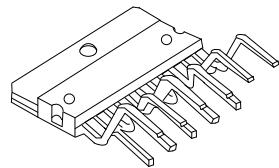
# 20W BRIDGE/STEREO AUDIO AMPLIFIER WITH CLIPPING DETECTOR

## ■ DESCRIPTION

The UTC **TDA7360** is a new technology class AB Audio Power Amplifier in the Multiwatt® package. The high power performance of the UTC **TDA7360** is obtained without bootstrap capacitors due to the fully complementary PNP/NPN output configuration.

The audible on/off noise is eliminated by a delayed turn-on mute circuit, and a novel short circuit protection system prevents spurious intervention.

The device provides a circuit for the detection of clipping in the output stages. An open collector output is able to drive systems with automatic volume control.



HZIP-11A

## ■ FEATURES

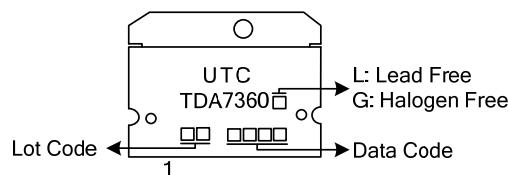
- \* Very few external components
- \* Without boucherot cells
- \* Without bootstrap capacitors
- \* High output power
- \* Very low STAND-BY current
- \* Fixed gain (20dB stereo)
- \* Programmable turn-on delay
- \* Clipping detector
- \* No switch on/off noise
- \* STAND-BY function

## ■ ORDERING INFORMATION

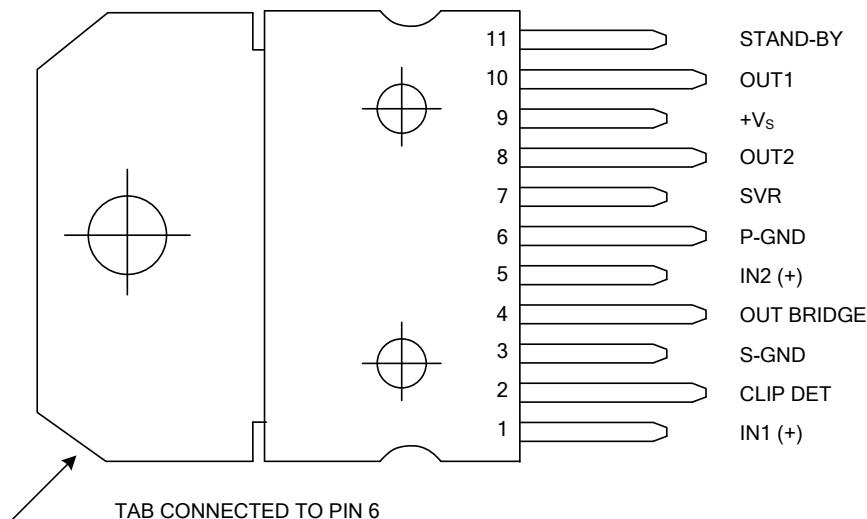
Ordering Number		Package	Packing
Lead Free	Halogen Free		
TDA7360L-J11-T	TDA7360G-J11-T	HZIP-11A	Tube

 TDA7360L-J11-A-T	(1) T: Tube (2) J11-A: HZIP-11A (3) L: Lead Free, G: Halogen Free and Lead Free
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### ■ MARKIN



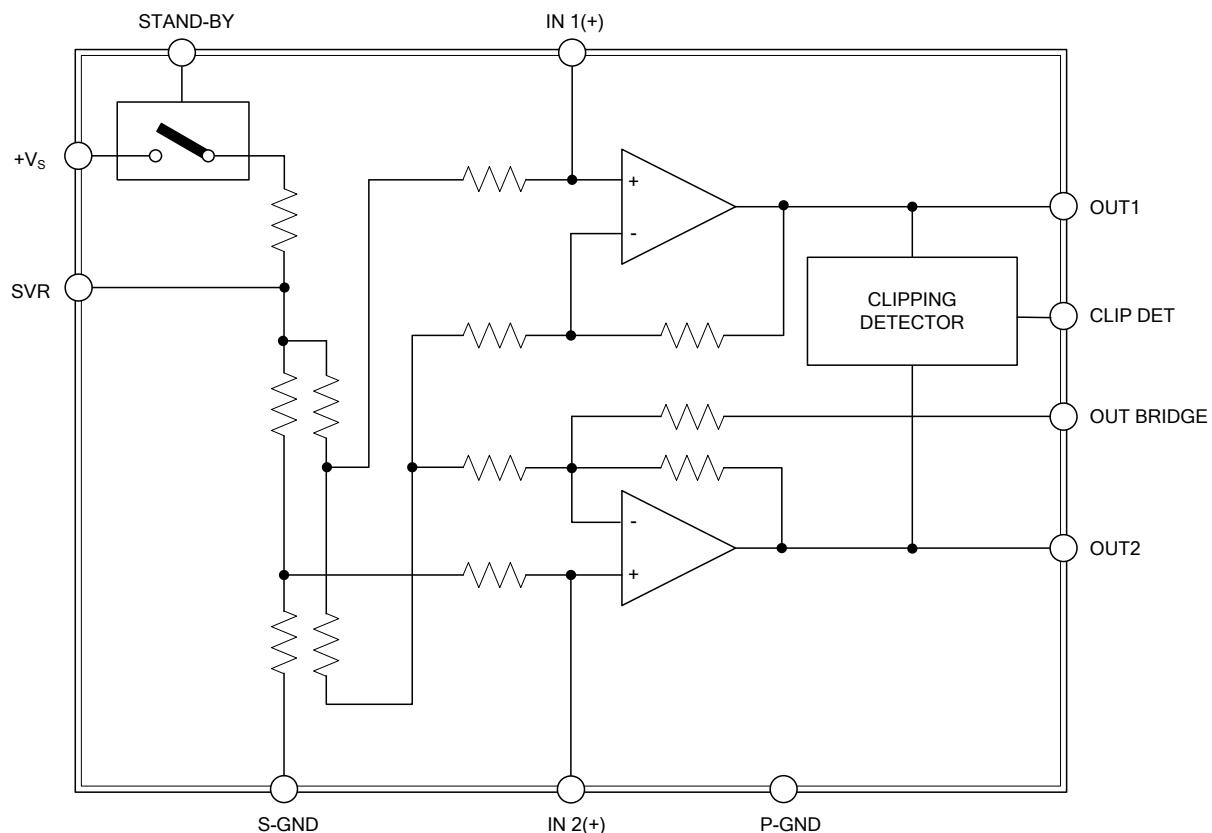
### ■ PIN CONFIGURATION



### ■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	IN1 (+)	Amp IN1 (+)
2	CLIP DET	Clip detector
3	S-GND	Signal Ground
4	OUT BRIDGE	Bridge output
5	IN2 (+)	Amp IN2 (+)
6	P-GND	Power Ground
7	SVR	Supply voltage rejection
8	OUT2	Output2
9	+Vs	Supply voltage
10	OUT1	Output1
11	STAND-BY	Stand-by

■ BLOCK DIAGRAM



# TDA7360

**CMOS IC**

## ■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Operating Supply Voltage	V <sub>S</sub>	22	V
Output Peak Current (non rep. for t=100μs)	I <sub>O</sub>	5	A
Output Peak Current (rep. freq. >10Hz)	I <sub>O</sub>	4	A
Power Dissipation At T <sub>CASE</sub> =85°C	P <sub>TOT</sub>	36	W
Storage And Junction Temperature	T <sub>STG</sub> , T <sub>J</sub>	-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	RATINGS	UNIT
Thermal Resistance Junction-case Max	R <sub>THJ-CASE</sub>	1.8	°C/W

## ■ ELECTRICAL CHARACTERISTICS

(Refer to the test circuits, T<sub>AMB</sub>=25°C, V<sub>S</sub>=14.4V, f=1KHz unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage Range	V <sub>S</sub>		8		18	V
Total Quiescent Drain Current	I <sub>D</sub>	stereo configuration		65	120	mA
Stand-by Attenuation	A <sub>SB</sub>		60	80		dB
Stand-by Current	I <sub>SB</sub>				100	μA
Standby ON Threshold	V <sub>ST_ON</sub>				1	V
Standby OFF Threshold	V <sub>ST_OFF</sub>		3.5			V
Clip Detector Prog. Current	I <sub>CO</sub>	pin 2 pull up to 5V d=1% with 10KW d=5%		70		μA

### STEREO

Output Power (each channel) THD=10%	P <sub>O</sub>	R <sub>L</sub> =2Ω		11		W
		R <sub>L</sub> =3.2Ω	7	8		
		V <sub>CC</sub> =12V, R <sub>L</sub> =4Ω		4.5		
		R <sub>L</sub> =4Ω		6.5		
Distortion	D	Po=0.1~2.5W, R <sub>L</sub> =4Ω		0.05	0.5	%
		Po=0.1~4W, R <sub>L</sub> =3.2Ω		0.05	0.5	
Supply Voltage Rejection	SVR	Rg=10KΩ, C3=22μF f=100Hz, C3=100μF	45			dB
				62		
Crosstalk	CT	f=1KHz	45			dB
		f=10KHz		55		
Input Resistance	R <sub>I</sub>			50		KΩ
Voltage Gain	G <sub>V</sub>		19	20	21	dB
Voltage Gain Match	G <sub>V</sub>				1	dB
Input Noise Voltage	E <sub>IN</sub>	22Hz~22KHz	Rg=50Ω	2.5	5	μV
			Rg=10KΩ	3	7	
			Rg=∞	3.5		

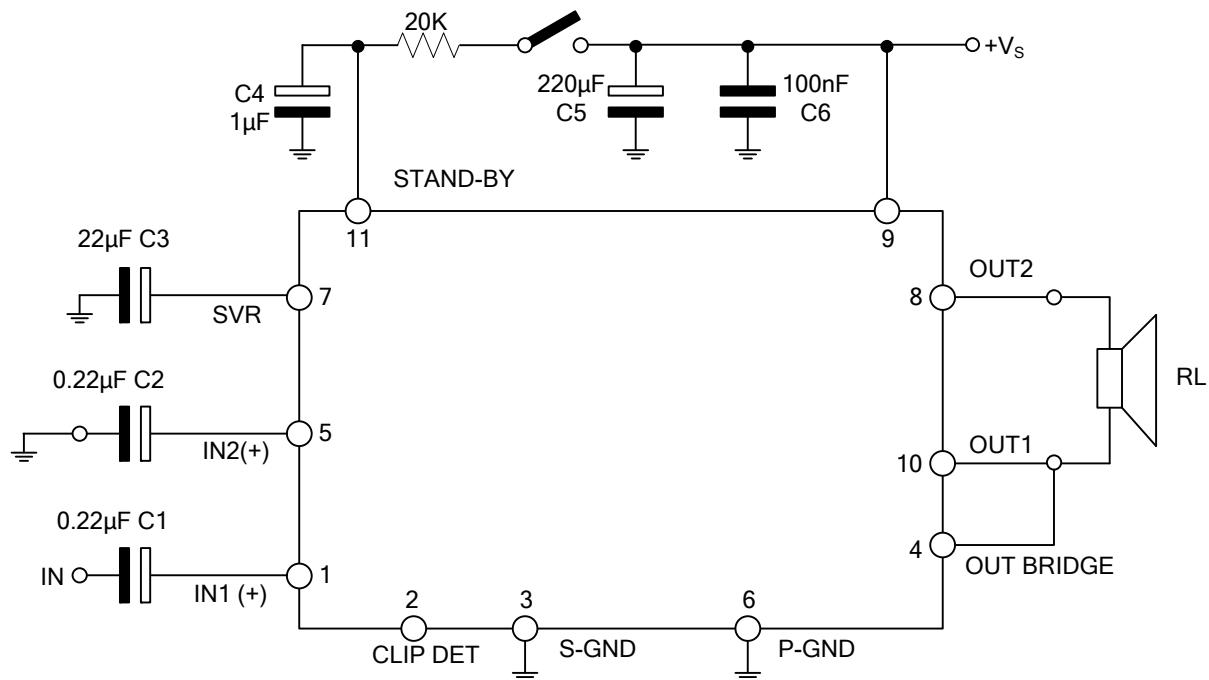
### BRIDGE

Output Offset Voltage	V <sub>OS</sub>				250	mV
Output Power THD=10%	P <sub>O</sub>	V <sub>CC</sub> =12V, R <sub>L</sub> =4Ω		15		W
		V <sub>CC</sub> =14.4V, R <sub>L</sub> =4Ω	16	20		
Distortion	d	Po=0.1~7W, R <sub>L</sub> =4Ω		0.05	0.5	%
Supply Voltage Rejection	SVR	Rg=10KΩ, C3=22μF f=100Hz, C3=100μF	45			dB
				62		
Input Resistance	R <sub>I</sub>			50		KΩ
Voltage Gain	G <sub>V</sub>			26		dB
Input Noise Voltage	E <sub>IN</sub>	22Hz~22KHz	Rg=50Ω	3.5		μV
			Rg=10KΩ	4		μV

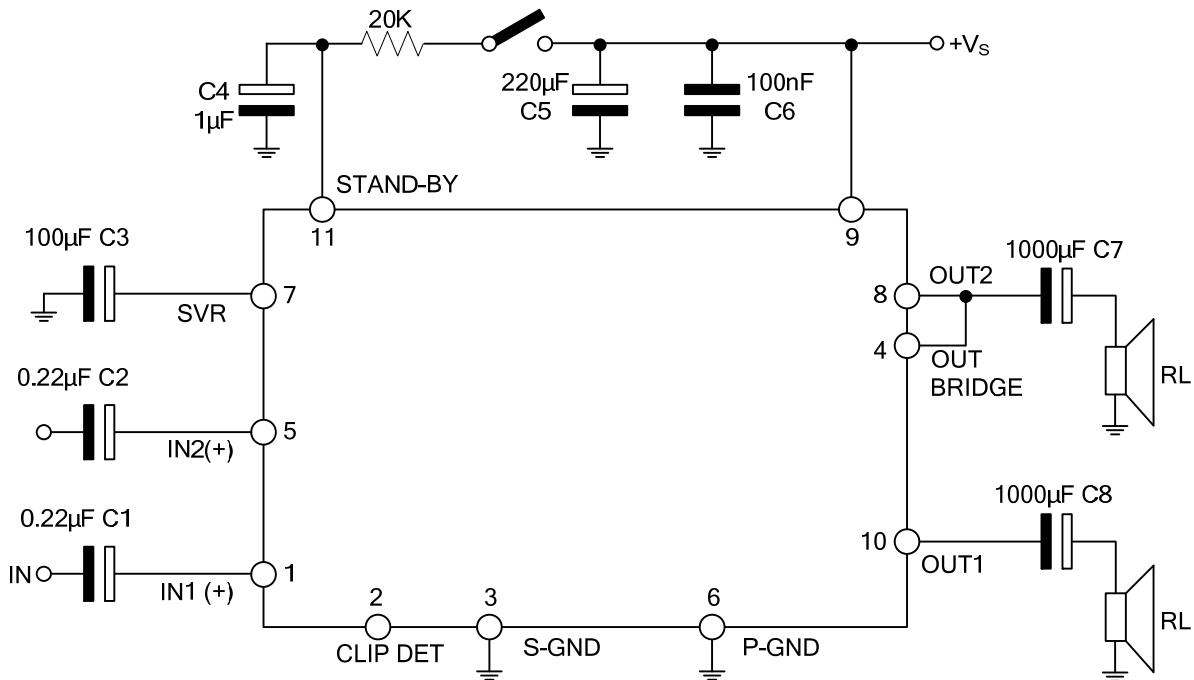


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■ BRIDGE APPLICATION CIRCUIT



■ STEREO APPLICATION CIRCUIT



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