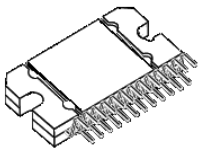
4 X 41W QUAD BRIDGE CAR RADIO AMPLIFIER



HZIP-25B

■ DESCRIPTION

The UTC **TDA7388** is a class AB Audio Power Amplifier. It allows a rail to rail output voltage swing with no need of bootstrap capacitors for the fully complementary PNP/NPN output configuration.

The UTC **TDA7388** is suitable for high end car radio applications.

■ FEATURES

* High Output Power@ V_{CC}=14.4V, f=1kHz, R_L=4 Ω:
  -4 x 41W Max.
  -4 x 25W @THD=10%
* Rail to rail output voltage swing
* Low THD & e_{No}

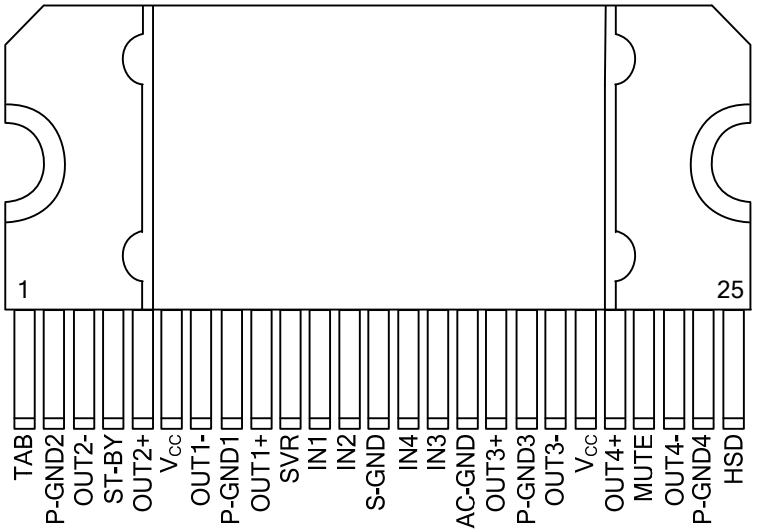
■ ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
TDA7388L-J25-B-T	TDA7388G-J25-B-T	HZIP-25B	Tube

Note: xx: Output Voltage, refer to Marking Information.

TDA7388L-J25-B-T (1) Packing Type (2) Package Type (3) Lead Free	(1) T: Tube (2) J25-B: HZIP-25B (3) Halogen Free, L: Lead Free

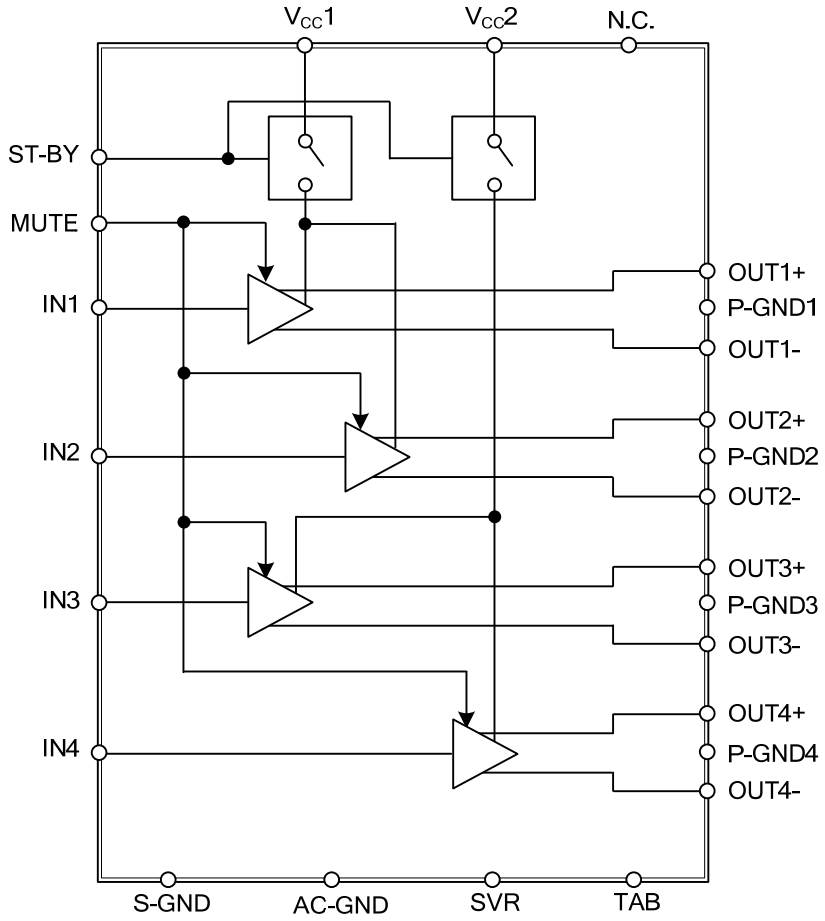
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	TAB	Connect to GND
2	P-GND2	Power GND of Channel 2
3	OUT2-	Inverting Output of Channel 2
4	ST-BY	Stand-by
5	OUT2+	Non-Inverting Output of Channel 2
6	V_{CC}	Supply Voltage
7	OUT1-	Inverting Output of Channel 1
8	P-GND1	Power GND of Channel 1
9	OUT1+	Non-Inverting Output of Channel 1
10	SVR	Supply Voltage Rejection
11	IN1	Input of Channel 1
12	IN2	Input of Channel 2
13	S-GND	Signal GND
14	IN4	Input of Channel 4
15	IN3	Input of Channel 3
16	AC-GND	AC GND
17	OUT3+	Non-Inverting Output of Channel 3
18	P-GND3	Power GND of Channel 3
19	OUT3-	Inverting Output of Channel 3
20	V_{CC}	Supply Voltage
21	OUT4+	Non-Inverting Output of Channel 4
22	MUTE	Mute
23	OUT4-	Inverting Output of Channel 4
24	P-GND4	Power GND of Channel 4
25	HSD	No Connection

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING

PARAMETER		SYMBOL	RATINGS	UNIT
Operating Supply Voltage		V_{CC}	18	V
DC Supply Voltage		$V_{CC(DC)}$	28	V
Peak Supply Voltage (t = 50ms)		$V_{CC(PK)}$	50	V
Output Peak Current	Repetitive (Duty Cycle 10% at f = 10Hz)	I_O	4.5	A
	Non Repetitive (t = 100μs)		5.5	A
Power Dissipation (T_C= 70°C)		P_D	80	W
Junction Temperature		T_J	150	°C
Storage Temperature		T_{STG}	-55 ~ 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
Junction to Case	θ_{JC}	1	°C /W

■ ELECTRICAL CHARACTERISTICS (V_S =14.4V, f =1KHz, R_G=600Ω, R_L=4Ω, T_A =25°C, Refer to the Test and application diagram, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Quiescent Current	I_{Q1}	R_L=∞	120	190	350	mA
Output Offset Voltage	V_{OS}	Play Mode			±80	mV
During Mute ON/OFF Output Offset Voltage	ΔV_{OS}				±80	mV
Voltage Gain	G_V		25	26	27	dB
Output Power	P_O	THD = 10%, V_S= 14.4V	22	26		W
Max. Output Power (Note 1)	$P_{O(MAX)}$	V_S= 14.4V	38	41		W
Distortion	THD	P_O= 4W		0.04	0.15	%
Output Noise	e_{NO}	"A" Weighted		50	70	μV
		B_W = 20Hz ~ 20KHz		70	100	μV
Supply Voltage Rejection	SVR	f = 100Hz, V_R= 1Vrms	50	65		dB
High Cut-Off Frequency	f_{CH}	P_O= 0.5W	100	200		KHz
Input Impedance	R_I		70	100		KΩ
Cross Talk	C_T	f = 1KHz, P_O = 4W	60	70		dB
		f = 10KHz, P_O = 4W	50	60		dB
St-By Current Consumption	I_{SB}				50	μA
St-By OUT Threshold Voltage	$V_{SB(OUT)}$	(Amp: ON)	3.5			V
St-By IN Threshold Voltage	$V_{SB(IN)}$	(Amp: OFF)			1.5	V
Mute Attenuation	A_M	$P_{O(REF)}$= 4W	80	90		dB
Mute OUT Threshold Voltage	$V_{M(OUT)}$	(Amp: Play)	3.5			V
Mute IN Threshold Voltage	$V_{M(IN)}$	(Amp: Mute)			1.5	V
V_S Automute Threshold	$V_{AM(IN)}$	(Amp: Mute), Att≥80dB, $P_{O(REF)}$=4Ω			6.5	V
		(Amp: Play), Att <0.1dB, P_O= 0.5Ω		7.6	8.5	V
Muting Pin Current	I_{PIN22}	V_{MUTE}= 1.5V (Source Current)	5	11	20	μA

Note: 1. Saturated square wave output.

■ TYPICAL APPLICATION CIRCUIT