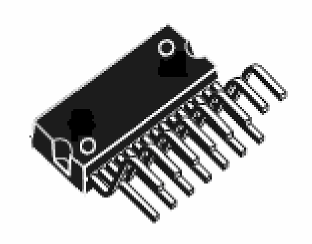
7+7W DUAL BRIDGE AMPLIFIER

DESCRIPTION

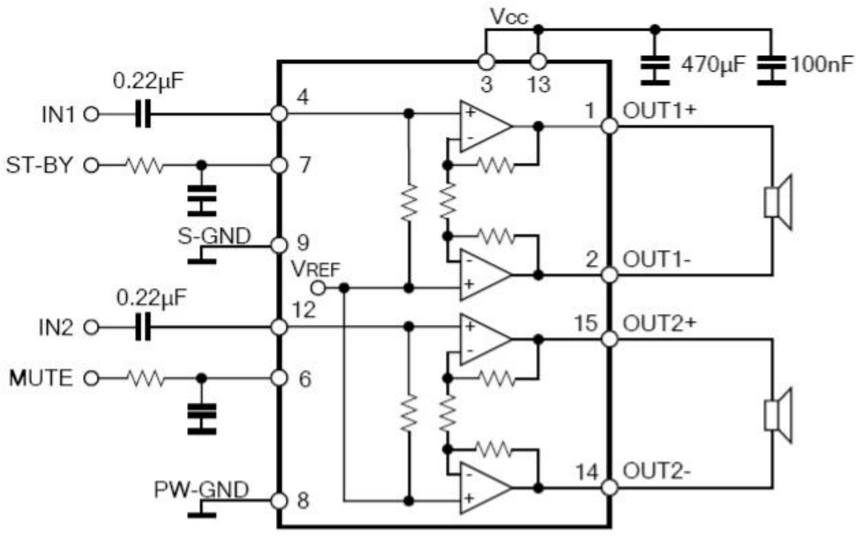
The UTC7266 is a 7+7W dual bridge amplifier specially designed for TV and Portable Radio applications.



FEATURES

* Wide supply voltage range (3～18V)
* Minimum external components
  - No SWR capacitor
  - No bootstrap
  - No boucherot cells
* STAND-BY & MUTE functions
* Short circuit protection
* Thermal overload protection

BLOCK DIAGRAM



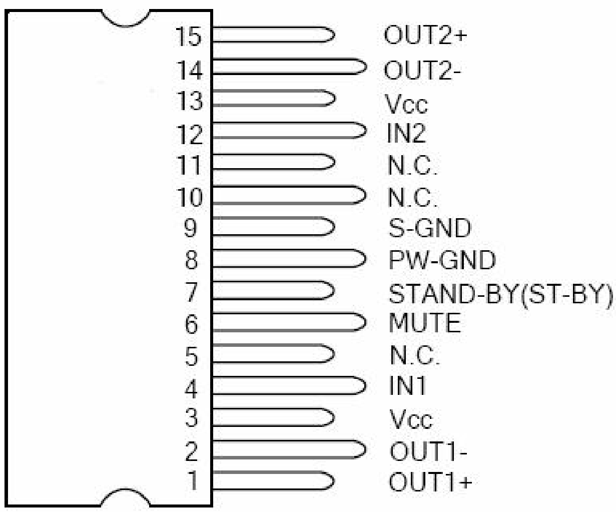
ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_s	20	V
Output Peak Current (internally limited)	I_O	2	A
Power Dissipation (T_{Case} =70℃)	P_{tot}	33	W
Operating Temperature	T_{op}	0 ～ +70	℃
Storage Temperature	T_{STG}	-40 ～+150	℃

THERMAL DATA

PARAMETER	SYMBOL	RATINGS		UNIT
Thermal Resistance Junction to Case	$R_{th\ j\text{-}case}$	Typ. 1.4	Max. 2	℃/W

PIN CONFIGURATION



ELECTRICAL CHARACTERISTICS(V_{CC}=11V, RL =8Ω, f=1kHz, Ta=25℃, unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Supply Range	V_{CC}		3	11	18	V
Total Quiescent Current	Iq			50	65	mA
Output Offset Voltage	V_{OS}				120	mV
Output Power	P_O	THD = 10%	6.3	7		W
Total Harmonic Distortion	THD	P_O = 1W		0.05	0.2	%
		P_O = 0.1W to 2W f = 100Hz to 15kHz			1	%
Supply Voltage Rejection	SVR	f = 100Hz VR = 0.5V	40	56		dB
Crosstalk	CT		46	60		dB
Mute Attenuation	A_{MUTE}		60	80		dB
Thermal Threshold	T_W			150		°C
Closed Loop Voltage Gain	G_V		25	26	27	dB
Voltage Gain Matching	△Gv				0.5	dB
Input Resistance	R_i		25	30		KΩ
Mute Threshold	VT_{MUTE}	for VCC > 6.4V; VO = -30dB for VCC < 6.4V; VO = -30dB	2.3 VCC/2-1	2.9 VCC/2-0.75	4.1 VCC/2-0.5	V V
St-by Threshold	VT_{ST-BY}		0.8	1.3	1.8	V
ST-BY current V6 = GND	I_{ST-BY}				100	μA
Total Output Noise Voltage	eN	A curve f = 20Hz to 20kHz		150		μV

APPLICATION SUGGESTION

STAND-BY AND MUTE FUNCTIONS

(A) Microprocessor Application

In order to avoid annoying "Pop-Noise" during Turn-On/Off transients, it is necessary to guarantee the right St-by and mute signals sequence. It is quite simple to obtain this function using a microprocessor (Fig. 1 and 2).

At first St-by signal (from mP) goes high and the voltage across the St-by terminal (Pin 7) starts to increase exponentially. The external RC network is intended to turn-on slowly the biasing circuits of Figure 1: Microprocessor Application the amplifier, this to avoid "POP" and "CLICK" on the outputs.

When this voltage reaches the St-by threshold level, the amplifier is switched-on and the external capacitors in series to the input terminals (C3, C5) start to charge.

It's necessary to mantain the mute signal low until the capacitors are fully charged, this to avoid that the device goes in play mode causing a loud "Pop Noise" on the speakers.

A delay of 100-200ms between St-by and mute signals is suitable for a proper operation.

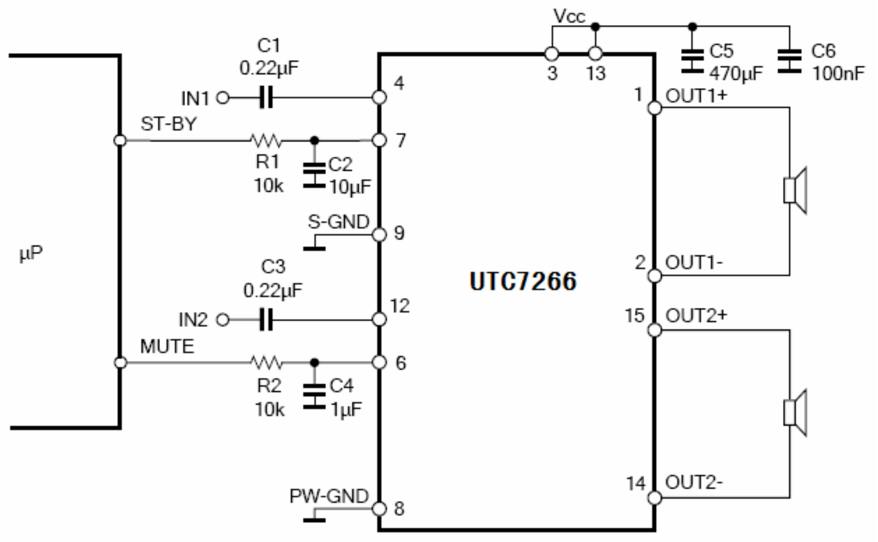


Fig. 1 Microprocessor Application

Figure 2: Microprocessor Driving Signals.

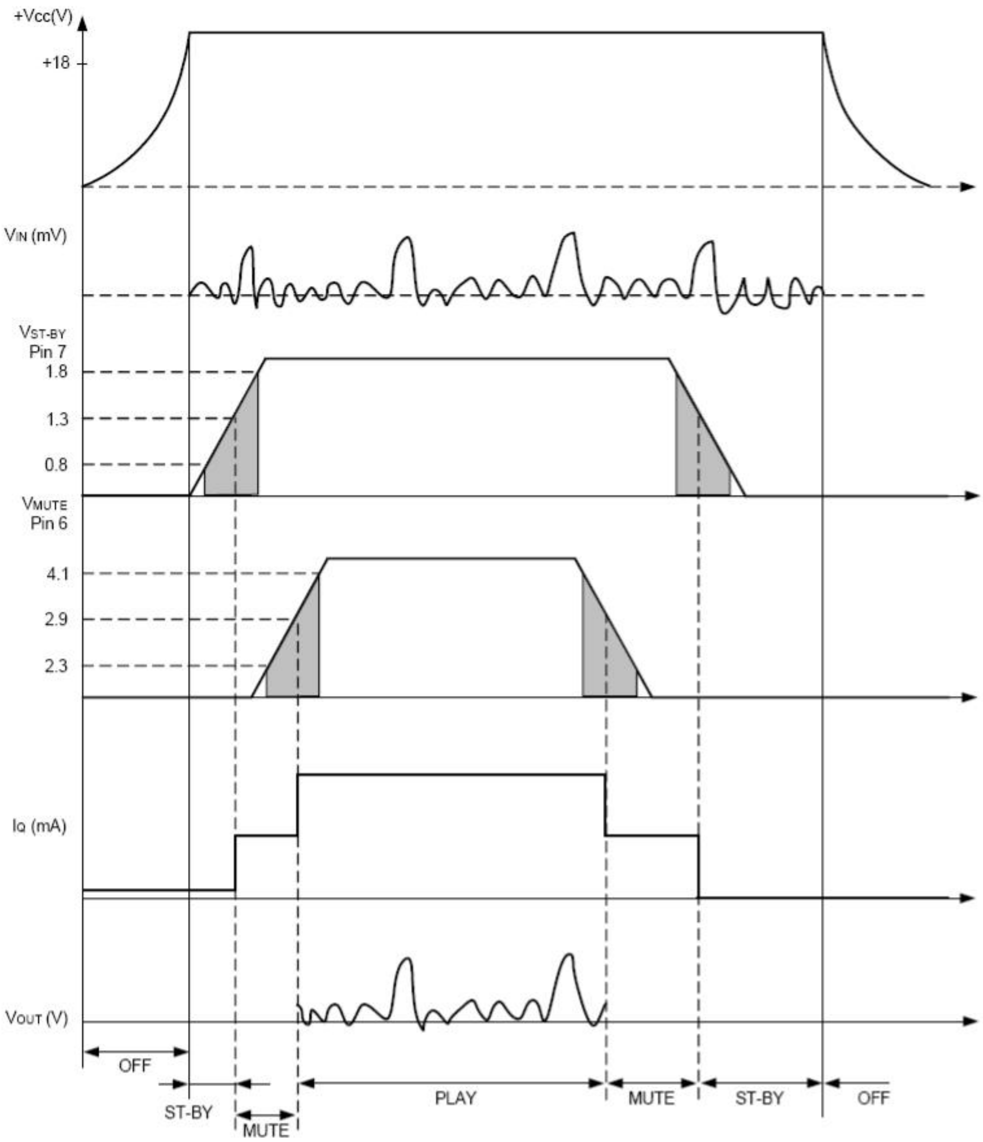


Fig 2 Microprocessor Driving Signals

(B) Low Cost Application

In low cost applications where the mP is not present, the suggested circuit is shown in fig.3.
The St-by and mute terminals are tied together and they are connected to the supply line via an external voltage divider.
The device is switched-on/off from the supply line and the external capacitor C4 is intended to delay the St-by and mute threshold exceeding, avoiding "Popping" problems.

Figure 3a: Stand-alone Low-cost Application.

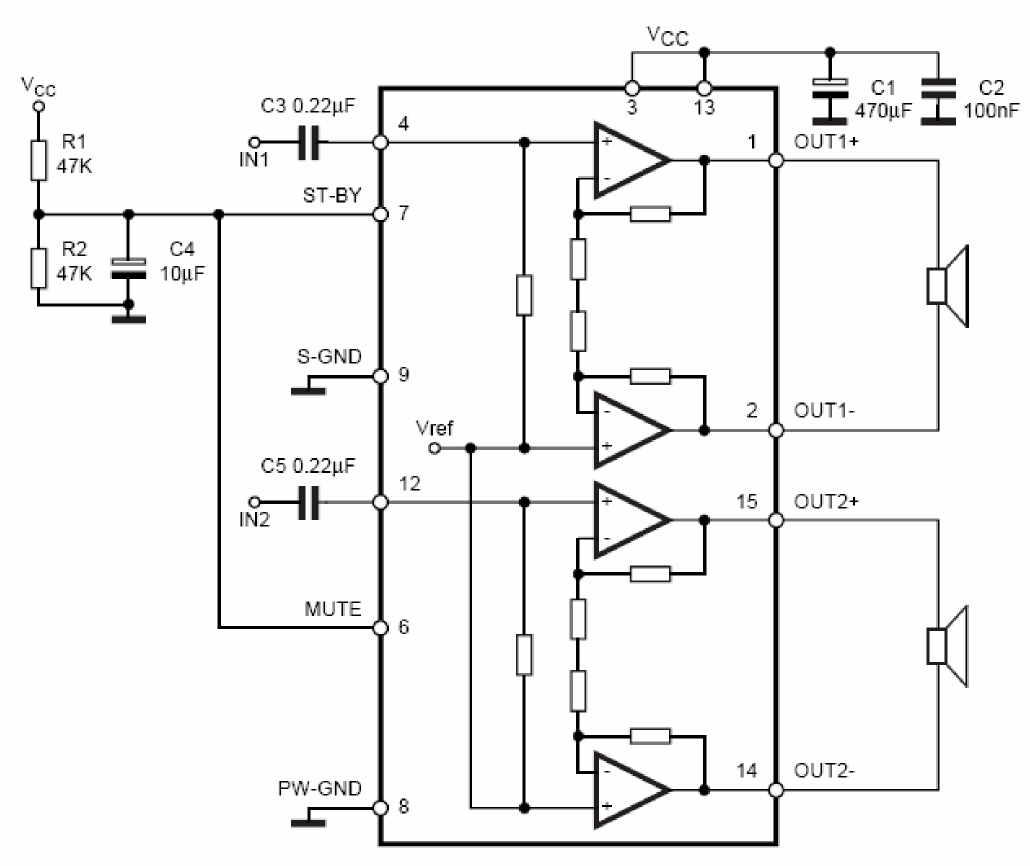


Figure 4: Distortion vs Output Power

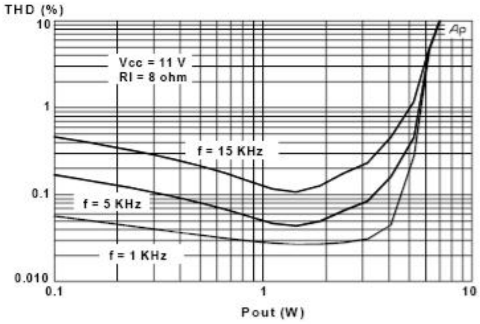


Figure 5: Distortion vs Output Power

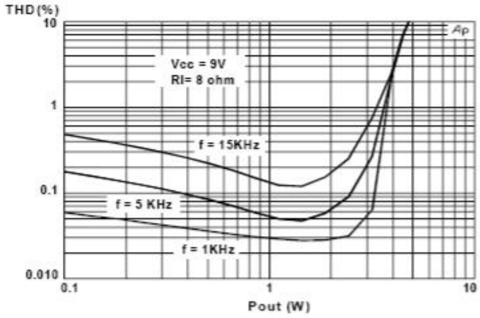


Figure 6: Distortion vs Frequency

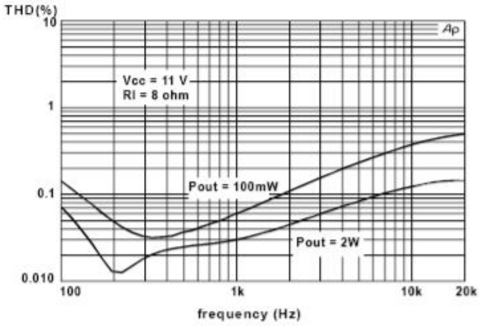


Figure 7: Gain vs Frequency

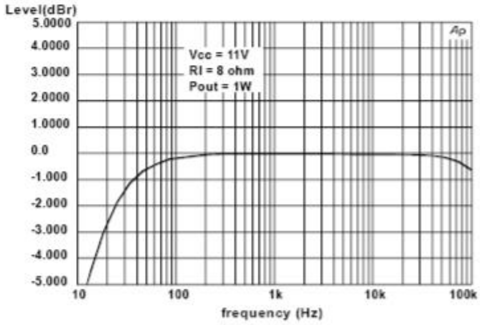


Figure 8: Output Power vs. Supply Voltage

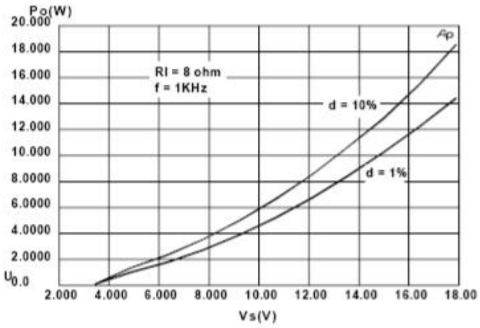


Figure 9: Total Power Dissipation & Efficiency vs. Output Power

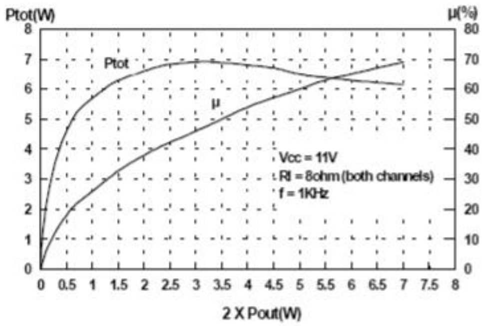


Figure 10: Mute Attenuation vs. V pin.6

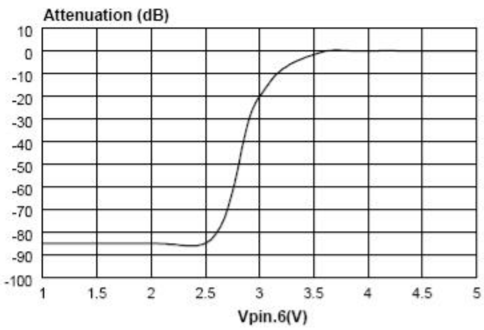


Figure 11: Stand-By Attenuation vs Vpin.7

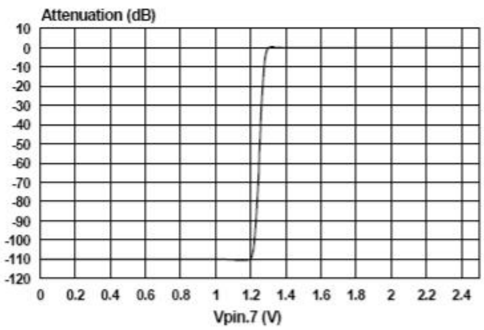
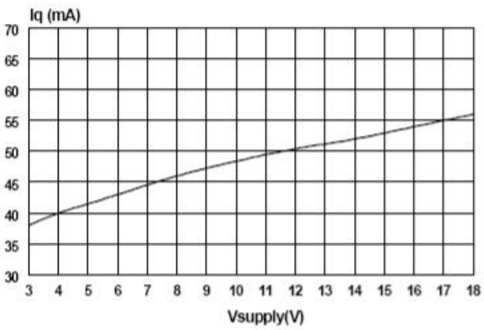
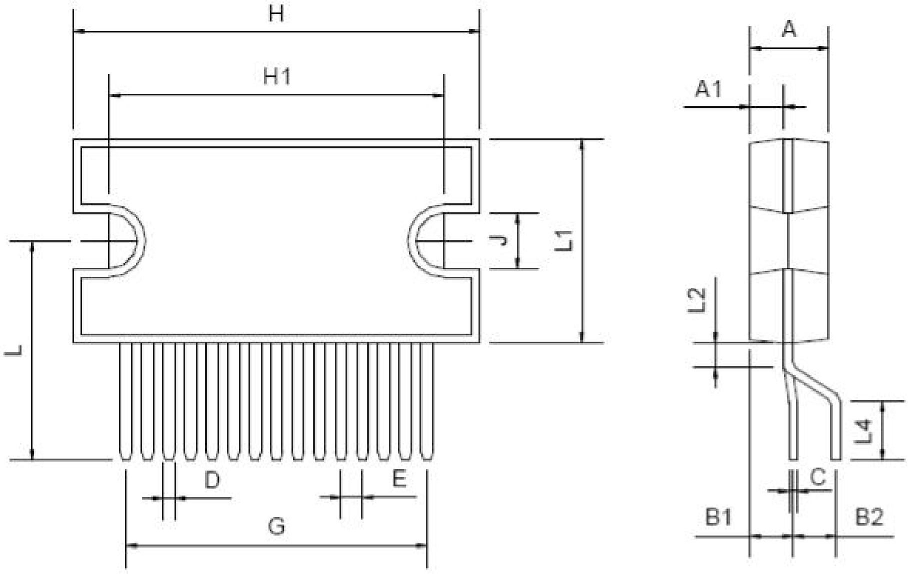


Figure 12: Quiescent Current vs. Supply Voltage



PACKAGE OUTLINE

HZIP-15 UNIT：mm



UINT	A	A1	B1	B2	C	D	E	G
mm	4.6	2.1	2.54	2.54	0.48	0.73	1.4	17.91
	4.4	1.8			0.38	0.67	1.14	17.57

UNIT	H	H1	J	L	L1	L2	L4
mm	24.0	20.0	3.4	12.65	12.2	1.55	4.0
	23.6	19.6	3.1	12.25	11.8	1.15	3.0