

UTC UNISONIC TECHNOLOGIES CO., LTD

A7240

LINEAR INTEGRATED CIRCUIT

20W BRIDGE AMPLIFIER FOR CAR RADIO

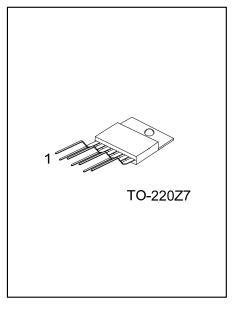
DESCRIPTION

The UTC A7240 is a 20W bridge audio amplifier IC and designed for car radio applications.

A comprehensive array of on-chip protection, include protection against AC and DC output short circuits (to ground and across the load), load dump transients, and junction over temperature, is feature to provide reliable operation. Furthermore, the UTC A7240 protects the loudspeaker when one output is short-circuited to ground.

FEATURES

- * Few External Components
- * Output Protected Against short Circuits to Ground and Across Load
- * Dump Transient
- * Thermal Shutdown
- * Loudspeaker Protection
- * High Current Capability
- * Low Distortion/Low Noise



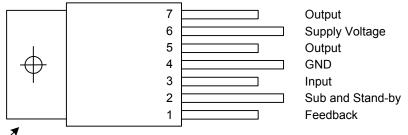
ORDERING INFORMATION

Order I	Number	Deskare	Packing	
Lead Free	Halogen Free	Package		
A7240L-TB7-T	A7240G-TB7-T	TO-220Z7	Tube	

A7240L-TB7-T (1)Packing Type (2)Package Type (3)Lead Plating	(1) T: Tube (2) TB7: TO-220Z7 (3) L: Lead Free, G: Halogen Free
---	---

A7240

PIN CONFIGURATION



ZTAB Connected to Pin 4



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Operating Supply Voltage	V _{SS}	18	V
DC Supply Voltage	V _{SS}	28	V
Peak Supply Voltage (for 50ms)	V _{SS(PEAK)}	40	V
Peak Output Current (non repetitive t = 0.1ms)	I _{O(PEAK)} (*)	4.5	А
Peak Output Current (repetitive f .10Hz)	Ι _{Ο(ΡΕΑΚ)} (*)	3.5	А
Power Dissipation at T_{C} = 85°C	PD	16	W
Storage and Junction Temperature	T _{STG} , T _J	-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. (*) Internally limited

THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to case	θ _{JC}	4	°C/W

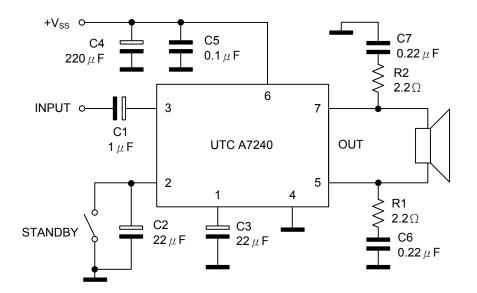
■ ELECTRICAL CHARACTERISTICS(Ta = 25°C, R_{TH} (heatsink)= 4°C/W, V_{SS} = 14.4V)

PARAMETER		SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT	
Supply Voltage		V _{SS}					18	V	
Output Offset Voltage		V _{O(OFF)}						150	mV
Total Quiescent Current		lq	R _L =4Ω				65	120	mA
Output Dowor		р	f = 1kHz, d= 10%		$R_L = 4\Omega$	18	20		۱۸/
Output Power		P _{OUT}	I – IKHZ, U– 10%		$R_L = 8\Omega$	10	12		W
Distortion		TUD	f = 1kHz, P _{OUT} = 50MW ~ 12W		$R_L = 4\Omega$		0.1	0.5	0/
		THD			$R_L = 8\Omega$		0.05	0.5	%
Voltage Gain		Gv	f = 1KHz		39.5	40	40.5	dB	
Supply Voltage Rejection		SVR	f = 100Hz, Rg = 10KΩ		35	40		dB	
- · · · · · · · ·			B 40KO B	B= Curve A			2		
Total Input Noise		eN Rg = 10h	Rg = 10KΩ	B = 22Hz			3	10	μV
Efficiency		η	$R_L = 4\Omega$, f = 1KHz			65		%	
Input Resistance		R _{IN}	f = 1kHz		70			kΩ	
Input Sensitivity		V _{IN}	f = 1kHz, P_{OUT} = 2W, R_L =4 Ω				28		mV
Frequency Roll Off (-3dB) Low High		fL	P_{OUT} = 15W, R _L =4 Ω				30	Hz	
		f _H				25			kHz
Stand-by Threshold		V _{THD (PIN2)}						1	V
Stand-by Current		ISTN-BY					200		μA
Stand-by Attenuation		A _{STN-BY}	V _{OUT} = 2Vrms			70	90		dB



TEST AND APPLICATION CIRCUIT

A7240

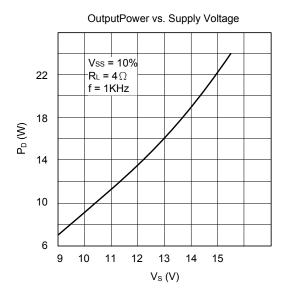


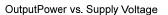
COMPONENT USAGE SUGGESTION

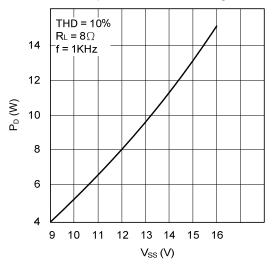
Component	Suggest	Purpose	Larger than	Smaller than
R1, R2	2.2W	Frequency Stability	Danger of High Frequency Oscillation	
C1	1µF	Input DC Decoupling	Higher Turn On and Stand-by Delay	Higher Turn On Pop. Higher Low Frequency Cutoff
C2	22µF	Ripple Rejection	Increase of SVR Increase of the Turn On Delay	Degradation of SVR
C3	22µF	Feedback low Frequency Cutoff		Higher Low Frequency Cutoff
C4	220µF	Supply Filter		Danger of Oscillation
C5	0.1µF	Supply Bypass		Danger of Oscillation
C6, C7	0.22µF	Frequency Stability		Danger of Oscillation



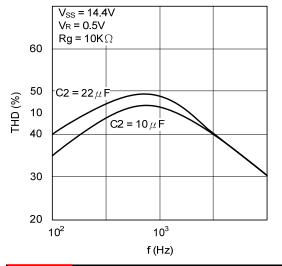
TYPICAL CHARACTERISTICS



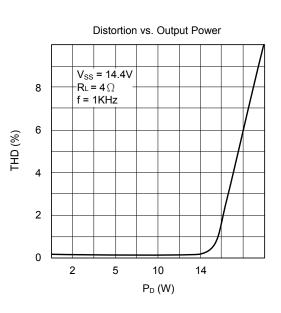




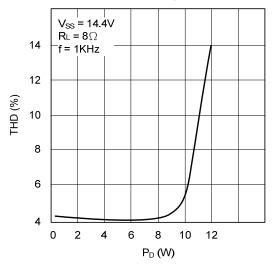
SupplyVoltage Rejection vs. Frequency







Distortion vs. Output Power



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.

