

LM2808 Monolithic TV Sound System

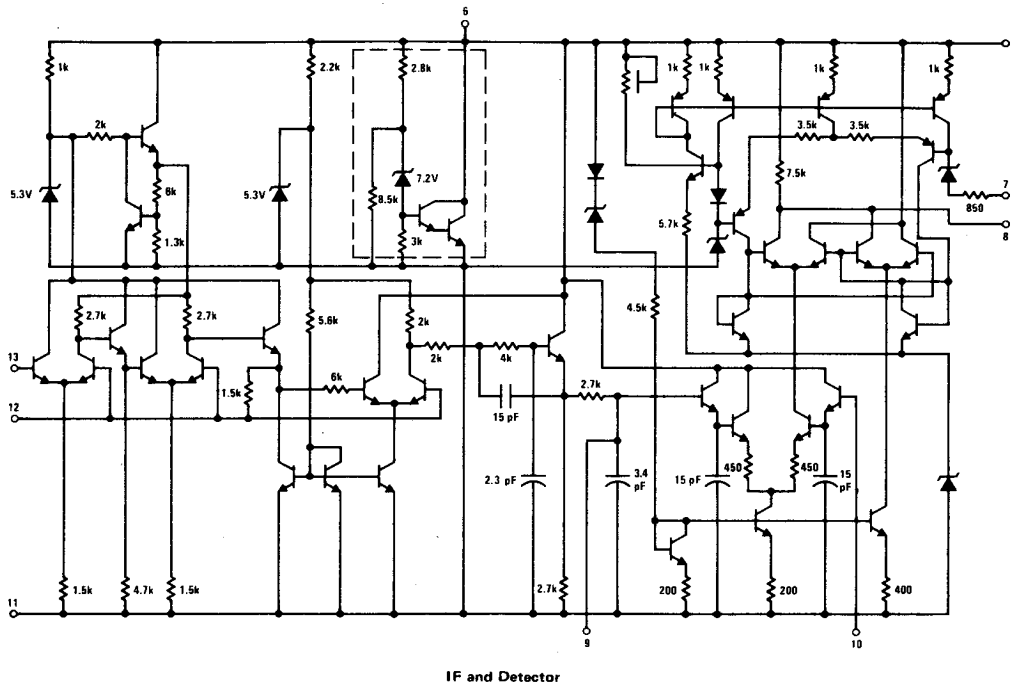
General Description

The LM2808 2W sound IF circuit is designed for television and related applications. The circuit is comprised of 2 independent functions: a sound IF and an audio power amplifier. An improved volume control circuit is included, however, so that recovered audio is a linear function of the resistance of the control potentiometer. Audio power amplification is accomplished with circuitry similar to the popular LM380 audio power amplifier, featuring both short circuit and thermal protection.

Features

- Minimum undistorted output
LM2808 – 0.5W
- Linear volume control – 75 dB range
- Fixed voltage gain in audio amplifier
- Short circuit and thermal protection
- Standard dual-in-line package

Schematic Diagrams (For power amplifier section of schematic, see next page)



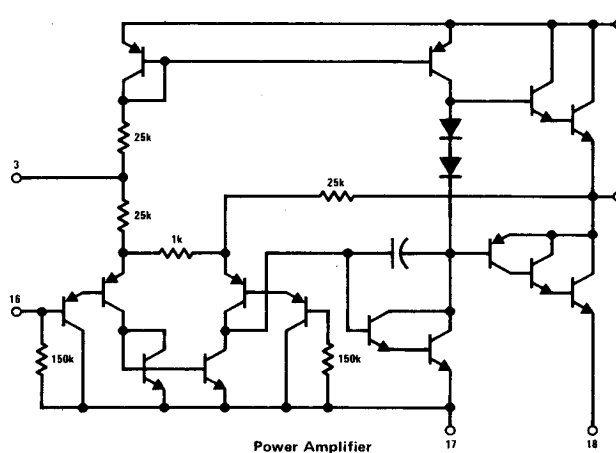
Absolute Maximum Ratings

Supply Voltage, V_{CC} (Pin 2)		Storage Temperature Range	-65°C to +150°C
LM2808	20V	Operating Temperature Range	0°C to +70°C
Input Current, I_{MAX} (Pin 6)	50 mA	Maximum Junction Temperature	150°C
Input Signal Voltage (Between Pins 12 and 13)	3 Vp-p	Lead Temperature (Soldering, 10 seconds)	300°C

Electrical Characteristics (See test circuit)

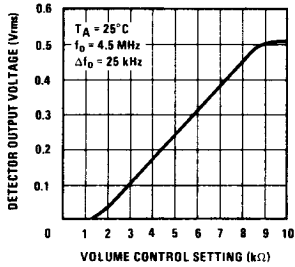
PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
P_o @ 10% THD LM2808	$V_{CC} = 16V, R_L = 8\Omega$		2.6		W
	$V_{CC} = 14V, R_L = 8\Omega$		1.9		W
	$V_{CC} = 12V, R_L = 8\Omega$		1.3		W
Feedthrough Signal (Pin 1)	$R_{Pin 7} = 0\Omega$			15	mVrms
Current into Pin 6	$V_{Pin 6} = 10V$	7	10.8	15	mA
AM Rejection	$V_{IN} = 10$ mVrms, $\Delta f = 25$ kHz, AM = 30%	40			dB
Recovered Audio (Pin 8)		350	500		mVrms
Input Limiting Voltage at 4.5 MHz			200	400	μV
Audio Power Amp Voltage Gain (Pin 16 to Pin 1)		40		60	V/V
Output Noise, Input Signal Removed (Pin 1)	$R_{Pin 7} = 0\Omega$		70	150	mVrms
Distortion (Pin 8)	$\Delta F = 25$ kHz, $f_o = 4.5$ MHz		1.2	2	%
Distortion (Pin 1)					
LM2808	$P_o = 0.5W, R_L = 8\Omega$		1.2	2	%
Input Impedance (Pin 16)		50	200		k Ω
Current into Pin 2 (Zero Audio Output at Pin 1)	$V_2 = 24V$	2	5	20	mA

Schematic Diagrams (Continued)

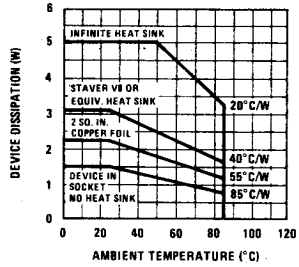


Typical Performance Characteristics

Volume Control Characteristic



Allowable Device Dissipation vs Ambient Temperature



AM Rejection vs Input Signal Level

