



LM1884 TV Stereo Decoder

General Description

The LM1884 is a decoder designed for television stereo. An L-R output is provided to drive further audio processing.

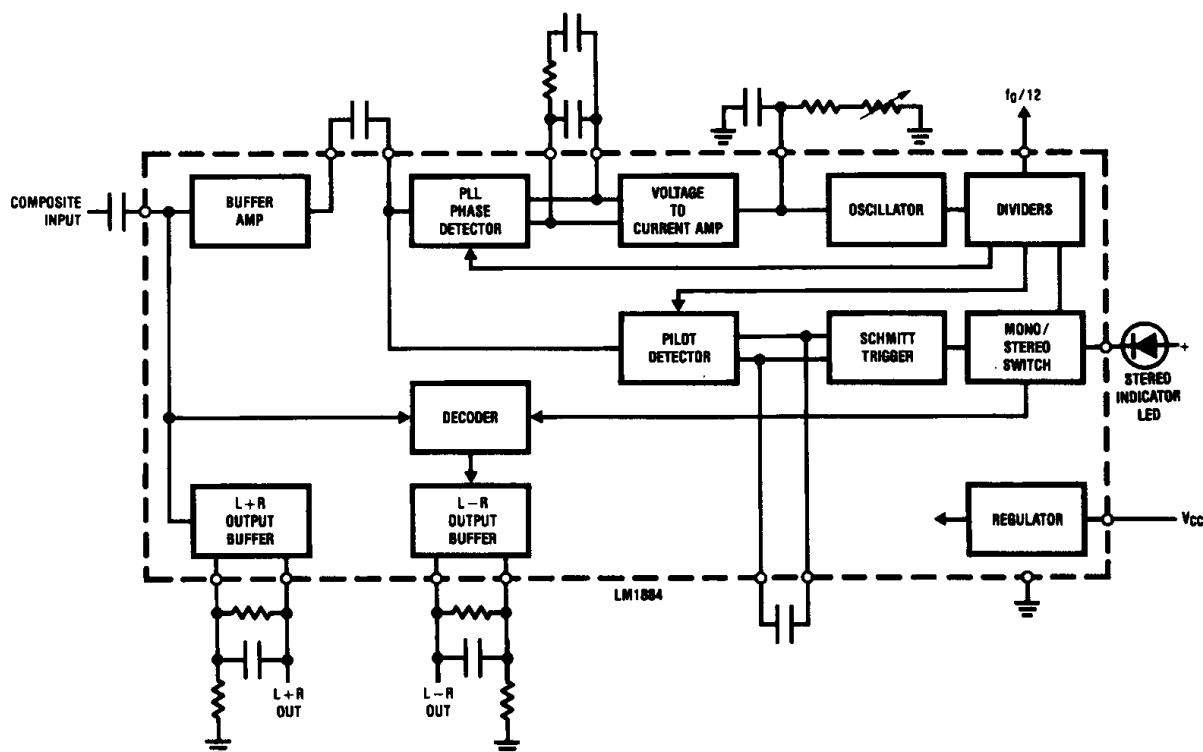
Features

- Low impedance L + R and L - R outputs
- Mono/Stereo switching and indication
- Low distortion—0.10% typical

Applications

- Stereo television sets
- Stereo adapters
- Cable television

Block Diagram



TL/H/6759-1

Order Number LM1884N
See NS Package Number N16A

Absolute Maximum Ratings

$T_A = +25^\circ\text{C}$ unless otherwise noted

If Military/Aerospace specified devices are required, please contact the National Semiconductor Sales Office/Distributors for availability and specifications.

Power Supply Voltage 16V
Power Dissipation (Package Limitation) 1800 mW
Derate Above $T_A = +25^\circ\text{C}$ 15 mW/ $^\circ\text{C}$

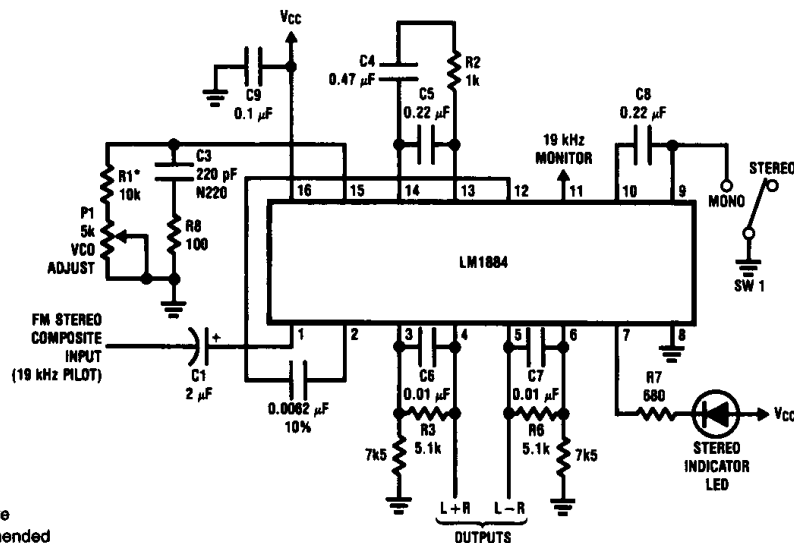
Operating Temp. Range (Ambient) -40°C to $+85^\circ\text{C}$
Storage Temperature Range -65°C to $+150^\circ\text{C}$
Lamp Drive Voltage
Max Voltage at Pin 7 with Lamp "Off" 16V
Lamp Current 100 mA
Lead Temperature (Soldering 10 sec.) 260°C

Electrical Characteristics

Parameters Guaranteed by Electrical Testing Test Circuit, $T_A = +25^\circ\text{C}$, $V_{CC} = 12\text{V}$ unless noted

Parameter	Conditions	Min	Typ	Max	Units
DC $V_{IN} = 0$					
Supply Current	$V_{CC} = 16\text{V}$	15	33.5	50	mA
Output Voltage	Pin 4	1.7	3.5	5.0	V
Output Voltage	Pin 5	1.7	3.8	5.0	V
Output Impedance	Pins 4, 5		100	300	Ω
Lamp Leakage	Lamp off, pin 7 voltage = 16V			0.1	mA
Lamp Saturation Voltage	Lamp on, pin 7 current = 100 mA			2.0	V
Audio Composite signal with 38 kHz subcarrier and 10% 19 kHz pilot, $f_{mod} = 1\text{ kHz}$. Adjust P1 for 19 kHz $\pm 10\text{ Hz}$.					
L + R Channel Gain	$V_{IN} = 2.5\text{Vpp}$ L = R, pilot off, pin 4	0.8	1.0	1.2	
L + R Channel THD	$V_{IN} = 2.5\text{Vpp}$ L = R, pilot off, pin 4		0.1	1.0	%
Gain Ratio, L + R Channel to L - R Channel	$V_{IN} = 2.5\text{Vpp}$, L only	-2.0	0.0	2.0	db
Supply Rejection	100 mVrms, 1 kHz on supply, $V_{IN} = 0$	30	60		db
DC Output Shift, Mono to Stereo	Pilot off to on, pins 4, 5			± 20	mV
Input Impedance	Pin 1	15	50	150	k Ω
PLL					
Pilot Level for Lamp On		12		20	mV
Pilot Level for Lamp Off		3		10	mV
Capture Range	Pilot = 25 mVrms	± 0.5			%

Test Circuit

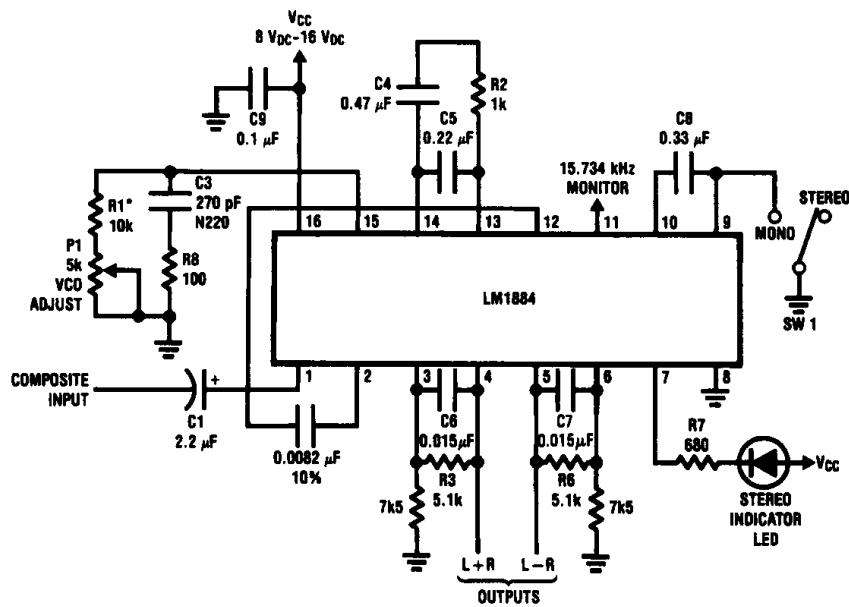


*Metal film, zero temperature coefficient resistor recommended

FIGURE 1

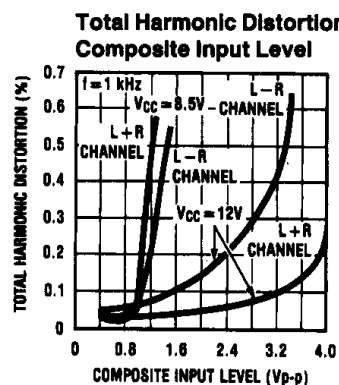
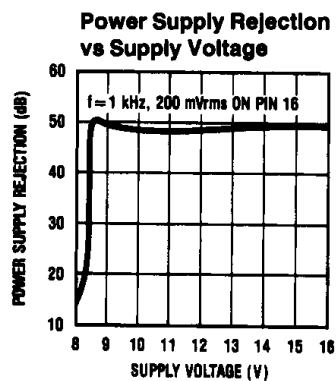
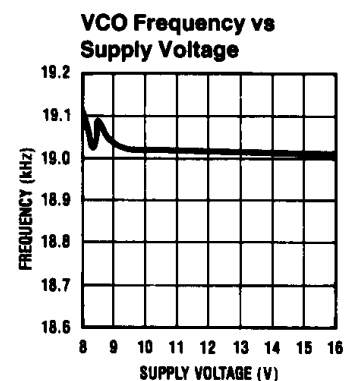
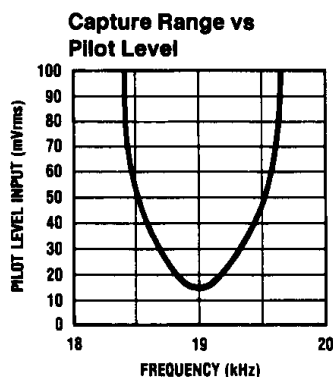
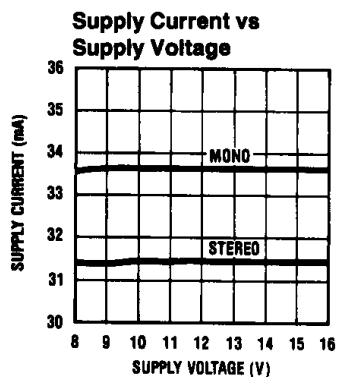
TL/H/6759-3

LM1884 Typical Application



* Metal film, zero temperature coefficient resistor recommended

TL/H/6759-2



TL/H/6759-4