



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089
<http://www.nteinc.com>

NTE1864 Integrated Circuit PLL (Phase Lock Loop) FM Stereo Demodulator ^w/Blend

Description:

The NTE1864 is a phase lock loop FM stereo demodulator with a DC control pin for reducing noise by decreasing separation during weak signal conditions.

Features:

- Blend Control
- Large Input Overload
- Low Beat Note Distortion
- Low THD Diode Switching Outputs
- VCO Stop Function
- Wide Supply Range: +7V to +15V
- Mono Override Pin

Applications:

- Automobile Radios
- Hi Fi Receivers and Tuners
- High Performance Portable Radios

Absolute Maximum Ratings:

Supply Voltage, Pin3	15V
Lamp Driver Voltage, Pin11	18V
Output Voltage, Pin12, Pin13, Supply Off	7V
Quick Mono Input (Pin1)	V+ (Pin3)
Blend Input (Pin20)	15V
Power Dissipation (Note 1), P _D	1.9W
Operating Temperature Range, T _{opr}	0° to +70°C
Storage Temperature Range, T _{stg}	-65° to +125°C
Lead Temperature (During Soldering, 10sec), T _L	+260°C

Note 1. For operation in ambient temperatures above +25°C, the device must be derated based on a +150°C maximum junction temperature and a thermal resistance of +65°C/W junction to ambient.

Electrical Characteristics: ($T_A = +25^{\circ}\text{C}$, $V_+ = 8\text{V}$)

Parameter	Test Conditions	Min	Typ	Max	Unit
DC					
Operating Supply Voltage		7	8	15	V
Supply Current		–	26	45	mA
Input DC Voltage	Pin19	–	4	–	V
	Pin2	–	1.8	–	V
Supply Rejection		15	30	–	dB
Lamp Leakage Current	Lamp Off, Pin11 = 16V	–	0.1	100	μA
Lamp Saturation Voltage	Lamp Off, Pin11 @ 75mA	–	1.4	2.0	V
VCO Stop Voltage	Voltage at Pin4 to Stop VCO	0.2	0.4	–	V
VCO Stop Current	Pin4 = 0.2V	–	–30	–100	μA
Blend Input Bias Current	Pin20 = 0V	–	–2	–20	μA
Quick Mono Switch Voltage		–	4	–	V
Quick Mono Bias Current	Pin1 = 8V	–	2	–	μA
Output Leakage	Pin12 or Pin13 = 6.5V, Pin3 = 0V				μA
Audio					
Mono Gain	1kHz	–4	–1	+2	dB
Mono THD	1kHz @ 200mVrms	–	0.05	0.25	%
Channel Balance		–	± 0.4	± 1.5	dB
Gain Shift	Mono to Stereo	–	± 0.1	± 1.0	dB
Channel Separation	Pin20 \geq 1.1V	30	45	–	dB
Output DC Shift	Mono to Stereo	–	± 15	± 100	mV
Input Resistance	Pin19	20	40	–	k Ω
Output Resistance	Pin12, Pin13	–	65	200	Ω
Ultrasonic Rejection	19kHz + 38kHz	–	30	–	dB
SCA Rejection	Note 2	–	70	–	dB
Signal to Noise	1kHz @ 200mVrms Mono	–	68	–	dB
PLL					
Lamp On Voltage	19kHz on Pin2	–	15	20	mV
Lamp Off Voltage	19kHz on Pin2	2.5	5.0	–	mV
Lamp Hysteresis		–	10	–	dB
Capture Range	25mVrms on Pin2	± 2	± 4	± 6	%
Hold In Range	25mVrms on Pin2	–	± 12	–	%
Input Resistance	Pin2	8	14	–	k Ω
Blend (Pin20 from 1.1V to 0.2V)					
Stereo Gain Change	1kHz L = –R Input	–25	–35	–	dB
Mono Gain Change	1kHz L = R Input	–1.5	–0.5	0.5	dB
	10kHz L = R Input	–8	–14	–20	dB
Output DC Shift		–	± 40	± 100	mV

Note 2. Input is 10% SCA (74.5kHz), 9% pilot, and 1kHz left or right. Rejection is ratio of 1kHz output to 1.5kHz output.

Pin Connection Diagram

