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# NTE1226
# Integrated Circuit
## FM Multiplex Stereo Demodulator

**Description:**
The NTE1226is a silicon monolithic integrated circuit designed for FM multiplex stereo demodulator applications in FM stereo radio receivers that use phase locked loop techniques. The device contains a demodulator system, a voltage controlled oscillator, phase detectors, low pass filters, dividers and a DC amplifier plus a stereo−monoaural switching circuit and a driver circuit for a stereo indicator lamp. The features available make possible a system delivering high fidelity sound within the cost restrains of inexpensive stereo receivers.

**Features:**
- No Coil Necessary, all tuning performed with a Single Potentiometer
- Automatic Stereo/Monaural Switching
- High Voltage Gain: $G_V$ = 1.5dB ($R_L$ = 3.9kΩ)

**Absolute Maximum Ratings:** ($T_A$ = +25°C, unless otherwise specified)
Supply Voltage, $V_{CC}$ . . . . . 16V
Package Dissipation ($T_A$ = +75°C), $P_D$ . . . . . 350mW
Lamp Driver Current (Pin 6), $I_L$ . . . . . 100mA
Operating Temperature Range, $T_{opg}$ . . . . . −20° to +75°C
Storage Temperature Range, $T_{stg}$ . . . . . −40° to +125°C

**Electrical Characteristics:** ($T_A$ = +25°C, $V_{CC}$ = 10V, $V_{IN}$ = 160mV, f = 1kHz, $R_L$ = 3.9kΩ, unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Suppy Voltage | $V_{CC}$ | | 7 | – | 16 | V |
| Circuit Current | $I_{CC}$ | Quiescent | 7 | 13 | 18 | mA |
| Input Impedance | $Z_i$ | | – | 50 | – | kΩ |
| Stereo Channel Seperation | Sep. | f = 100Hz, $V_{in\ (Pilot)}$ = 15mV | 30 | 40 | – | dB |
| | | f = 1kHz, $V_{in\ (Pilot)}$ = 15mV | 35 | 45 | – | dB |
| | | f = 10kHz, $V_{in\ (Pilot)}$ = 15mV | 30 | 40 | – | dB |
| Voltage Gain | $G_V$ | Monoaural Input, $V_{in\ (L+R)}$ = 150mV | −4.5 | −1.5 | 2.0 | dB |
| Channel Balance | Ch.B | | −1.5 | 0 | 1.5 | dB |
| | | Monoaural Input, $V_{in\ (L+R)}$ = 15mV | −1.5 | 0 | 1.5 | dB |
| Total Harmonic Distortion | THD | Monoaural Input, $V_{in\ (L+R)}$ = 150mV | – | 0.15 | 0.5 | % |
| | | Stereo Input, $V_{in\ (Pilot)}$ = 15mV | – | 0.15 | 0.5 | % |
| Lamp Indicator Input Level | Lamp ON | Pilot Level | 5 | 8 | 11 | mV |
| Lamp Hysteresis | | | 3 | 6 | 9 | dB |

**Electrical Characteristics (Cont'd):** ($T_A$ = +25°C, $V_{CC}$ = 10V, $V_{IN}$ = 160mV, f = 1kHz, $R_L$ = 3.9kΩ, unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Capture Range | CR | $V_{in(Pilot)}$ = 15mV | ±1.5 | ±3 | – | % |
| Ultrasonic Frequency Rejection | 19kHz Rej. | 19kHz, $V_{in(Pilot)}$ = 15mV | – | 35 | – | dB |
| | 38kHz Rej. | 38kHz, $V_{in(Pilot)}$ = 15mV | – | 45 | – | dB |
| SCA Rejection | SCA Rej. | | – | 70 | – | dB |
| Max. Input Level | $V_i$ | Monoaural Input, THD = 1% | 0.4 | 0.6 | – | $V_{rms}$ |

**Pin Connection Diagram**