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NTE1062 Integrated Circuit Color TV Demodulator

Features:

- Luminance and Blanking Inputs
- Good Chroma Sensitivity
- 3mV/°C Typical Temperature Stability
- 600mV Max. Offset Voltage
- 10V_{pp} Typical Blue Output Voltage
- Output Short-Circuit Protection

Absolute Maximum Ratings: (T_A = +25°C unless otherwise noted)

Package Power Dissipation (Note 1), P_D 670mW
 Operating Temperature Range, T_{opr} -20°C to +85°C
 Storage Temperature Range, T_{stg} -60°C to +150°C

| Pin | Voltage Range in Volts | Current in mA | |
|-----|-------------------------|---------------|--------|
| | | Input | Output |
| 1 | 0 to +20 | 0 | Note 2 |
| 2 | 0 to +20 | 0 | Note 2 |
| 3 | -0.5 to V _{CC} | - | 0 |
| 4 | 0 to +20 | 0 | Note 2 |
| 5 | 0 to +12 | - | 10 |
| 6 | -0.5 to +10 | - | - |
| 7 | reference | 1.0 | Note 3 |
| 8 | 0 to +8.0 | - | - |
| 9 | 0 to +8.0 | - | - |
| 10 | 0 to +8.0 | - | - |
| 11 | No Connection | - | - |
| 12 | 0 to +10 | - | - |
| 13 | 0 to +10 | - | - |
| 14 | 0 to +30 | Note 3 | 1.0 |

Note 1. Derate at the rate of 8.3mW/°C above T_A = +70°C

Note 2. Max Continuous current output is 20mA and is limited by package power dissipation. Short Circuit is typically 50mA.

Note 3. Limited by package power dissipation

Static Electrical Characteristics: ($T_A = +25^\circ\text{C}$, $V_{CC} = 24\text{V}$, $R_L = 3.3\text{k}\Omega$, $V_i = 1\text{V}$ unless otherwise noted)

| Parameter | Test Pin | Test Conditions | Min | Typ | Max | Unit |
|---|----------|---|------|-----|------|-------|
| Quiescent Output Voltage | 1,2,4 | | 14.3 | – | 16.3 | V |
| Quiescent Input Voltage | | $R_L = \infty$ chroma and reference input voltage = 0 | – | 5 | – | mA |
| | | Chroma and reference input voltage = 0 | 16.5 | 19 | 25 | mA |
| Reference Input Voltage | 12,13 | | – | 6.2 | – | V |
| Chroma Input Voltage | 8,9,10 | | – | 3.4 | – | V |
| Differential Output Voltage (Note 4) | 1,2,4 | | – | 300 | 600 | mV |
| Output Temperature Coefficient (Note 4) | 1,2,4 | No output differential voltage | – | 3 | – | mV/°C |

Note 4. With chroma input signal voltage = 0 and normal reference signal voltage = $1.0V_{pp}$, all output voltages will be within specified limits and will not differ from each other by greater than

Dynamic Electrical Characteristics: ($T_A = +25^\circ\text{C}$, $V_{CC} = 24\text{V}$, $R_L = 3.3\text{k}\Omega$, $V_i = 1\text{V}$ unless otherwise noted)

| Parameter | Test Pin | Test Conditions | Min | Typ | Max | Unit |
|--|----------|---|------|-----|------|------------|
| Detector Output Voltage B (Note 5) | 4 | | 8.0 | 10 | – | V_{p-p} |
| Chroma Input Voltage (Note 3) | 8 | B output = $5.0V_{p-p}$ | – | 300 | 700 | mV_{p-p} |
| Detector Output Voltage G (Note 7) | 1 | Adjust B output to $5.0V_{p-p}$ | 0.75 | 1.0 | 1.25 | V_{p-p} |
| Detector Output Voltage R (Note 7) | 2 | | 3.5 | 3.8 | 4.2 | V_{p-p} |
| Relative Output Phase B to R (Note 8) | 4–2 | B output = $5.0V_{p-p}$ | 101 | 106 | 111 | degrees |
| Relative Output Phase B to G (Note 8) | 4–1 | | 248 | 256 | 264 | degrees |
| Demodulator Unbalance Voltage (Note 9) | 1,2,4 | No chroma input signal voltage, normal reference signal input voltage | – | 250 | 500 | mV_{p-p} |
| Residual Carrier and Harmonics (Note 10) | 1,2,4 | With input signal voltage, normal reference signal voltage and B = $5.0V_{p-p}$ | – | 0.7 | 1.5 | V_{p-p} |
| Reference Input Resistance | 12,13 | Chroma input = 0 | – | 2.0 | – | $k\Omega$ |
| Reference Input Capacitance | 12,13 | | – | 6.0 | – | pF |
| Chroma Input Resistance | 9,10 | | – | 1.0 | – | $k\Omega$ |
| Chroma Input Capacitance | 9,10 | | – | 2.0 | – | pF |
| Luma Input Resistance | 3 | | 100 | – | – | $k\Omega$ |

Note 5. With normal reference input signal voltage, adjust chroma input signal voltage to $1.2V_{p-p}$.

Note 6. With normal reference input signal voltage, adjust chroma input signal voltage until the B output voltage = $5V_{p-p}$. The chroma input voltage at this point should be equal or less than $700mV_{p-p}$.

Note 7. With normal reference input signal voltage, adjust the chroma input signal until the B output voltage = $5V_{p-p}$. At this point, the R and G voltages will fall within the specified limits. Luma voltage = $23V$.

Note 8. Tested with B output = $5V_{p-p}$, luma voltage = $23V$.

Note 9. No chroma input voltage and normal reference signal input voltage.

Note 10. Tested with input signal voltage, normal reference signal voltage and B output = $5V_{p-p}$.

Pin Connection Diagram

