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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<sub>pp</sub> Typical Blue Output Voltage
- Output Short-Circuit Protection

**Absolute Maximum Ratings:** (T<sub>A</sub> = +25°C unless otherwise noted)

Package Power Dissipation (Note 1), P<sub>D</sub> ..... 670mW  
 Operating Temperature Range, T<sub>opr</sub> ..... -20°C to +85°C  
 Storage Temperature Range, T<sub>stg</sub> ..... -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 <sub>CC</sub>	-	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<sub>A</sub> = +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

