

## NTE747 Integrated Circuit Low Level Video Detector

**Description:**

The NTE747 is a low level video detector in an 8-Lead DIP type package featuring very linear video characteristics and bandwidth. Designed for color and monochrome television receivers, replacing the third IF, detector, video buffer, and the AFC buffer.

**Features:**

- Conversion Gain: 34dB Typ
- Video Frequency Response @ 6MHz < 1dB
- Input of 36mV Produces 3V<sub>P-P</sub> Output
- High Video Output: 7.7V<sub>P-P</sub>
- Fully Balanced Detector
- High Rejection of IF Carrier
- Low Radiation of Spurious Frequencies

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

Power Supply Voltage .....	24V
Supply Current .....	26mA
Input Voltage .....	1V <sub>RMS</sub>
Power Dissipation .....	625mW
Derate Above 25°C .....	5mW/°C
Operating Ambient Temperature Range .....	0° to +75°C
Storage Temperature Range .....	-65° to +150°C

**Electrical Characteristics:** (T<sub>A</sub> = +25°C, V<sub>+</sub> = 20V, Q = 30, f<sub>C</sub> = 45MHz unless otherwise specified)

Parameter	Pin	Test Conditions	Min	Typ	Max	Unit
Supply Voltage Range	6		12	20	24	V
Supply Current	5, 6		–	15	–	mA
Zero Signal DC Output Voltage	4		6.8	7.7	8.3	V
Maximum Signal DC Output Voltage	4		–	0	–	V
Input Signal Voltage	7	3V <sub>P-P</sub> Video Output, 90% Modulation	–	36	–	mV <sub>RMS</sub>

**Electrical Characteristics:** ( $T_A = +25^\circ\text{C}$ ,  $V_+ = 20\text{V}$ ,  $Q = 30$ ,  $f_C = 45\text{MHz}$  unless otherwise specified)

Parameter	Pin	Test Conditions	Min	Typ	Max	Unit
Maximum Output Voltage Swing	4		–	7.7	–	$V_{P-P}$
Carrier Rejection at Output	4		42	60	–	dB
Carrier Output Voltage		$3V_{P-P}$ Output, $f_{out} = f_C$	–	1	–	$mV_{P-P}$
		$3V_{P-P}$ Output, $f_{out} = 2f_C$	–	3	–	$mV_{P-P}$
3dB bandwidth of IF carrier	7		–	80	–	MHz
3dB Bandwidth of Video Output	4		–	12.3	–	MHz
Input Resistance	7		–	3.5	–	$k\Omega$
Input Capacitance	7		–	3.0	–	pF
Internal Resistance	2, 3	Across Tuned Circuit	–	4.4	–	$k\Omega$
Internal Capacitance	2, 3		–	1.0	–	pF
AFT Buffer Output	1	At Carrier Frequency, Note 1	–	350	–	$mV_{P-P}$
AFT Buffer DC Level	1		–	6.5	–	V

Note 1. Measured with 10 times probe.

