

NTE738 Integrated Circuit Color TV Processing Circuit

Description:

The NTE738 is a chroma IF amplifier with automatic chroma control, color killer, dc chroma control, and injection lock reference system followed by dc hue control.

Features:

- Minimum Number of External Components required
- DC Control of both Chroma Amplitude and Hue Shift
- Crystal-Controlled Internal Feedback Oscillator
- Built-in Noise Immunity
- Schmitt Trigger Color Killer
- Automatic Chroma Control
- Internal Burst Gate and Gate Pulse Shaping Circuit
- High Oscillator Lock-in Sensitivity
- Built-in Supply Regulation

Absolute Maximum Ratings: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Power Supply Current	35mA
Horizontal Pulse Input Current	250 μ A Peak
Power Dissipation (Package Limitation), P_D	625mW
Derate above $T_A = +25^\circ\text{C}$	5.0mW/ $^\circ\text{C}$
Operating Temperature Range (Ambient), T_{opr}	-20° to $+75^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65° to $+150^\circ\text{C}$

Electrical Characteristics: ($V_{CC} = +20\text{V}$, $R_S = 390\Omega$, $T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Test Conditions	Min	Typ	Max	Unit
Regulated Voltage	$I_S = 35\text{mA}$	9.0	9.6	11.5	V
	$I_S = 27\text{mA}$	—	9.2	—	V
Maximum Undistorted Chroma Output	$E_{(Pin3)} = E_{(Pin14)}$, Note 1	34	40	—	dB
Maximum Chroma Gain	$E_{(Pin3)} = E_{(Pin14)}$, Note 1	34	40	—	dB
Automatic Chroma Control Range (ACC)	–3dB Down from Maximum Undistorted Output, Note 1	—	19	—	dB
Chroma Burst Level to Kill	Note 1	—	1.4	—	mV _{P-P}
Manual Chroma Gain Control Range	$\Delta V_{(Pin3)} V_{(Pin14)}$ to 0V	50	60	—	dB

Note 1. With 5.0mV_(P-P) burst input at pin 5 set $E_{(pin 10)}$ to just “unkill”.

Electrical Characteristics (Cont'd): ($V_{CC} = +20V$, $R_S = 390\Omega$, $T_A = +25^{\circ}C$ unless otherwise specified)

Parameter	Test Conditions	Min	Typ	Max	Unit
Chroma Input Resistance		–	2.3	–	k Ω
Chroma Input Capacitance		–	13	–	pF
Chroma Output Impedance		–	15	–	Ω
Horizontal Input Pulse		2.2	3.0	4.0	V _P
Oscillator Output		100	–	–	mV _(RMS)
Oscillator Output Impedance		–	15	–	Ω
Hue Control Range	$\Delta V_{(Pin12)} V_{(Pin14)}$ to 4.3V	100	126	–	degrees
Oscillator Pull-In Range		1200	–	–	Hz
Oscillator Noise Bandwidth (f_N)		–	900	–	Hz
Static Phase Error with Oscillator Detuning	25mV _{P-P} Burst Amplitude	–	0.20	–	deg/Hz
	2.0mV _{P-P} Burst Amplitude	–	0.25	–	deg/Hz

Pin Connection Diagram

