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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°C unless otherwise specified)

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

Electrical Characteristics: (V_{CC} = +20V, R_S = 390Ω, T_A = +25°C unless otherwise specified)

Parameter	Test Conditions	Min	Typ	Max	Unit
Regulated Voltage	I_S = 35mA	9.0	9.6	11.5	V
	I_S = 27mA	–	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 = 390Ω, T_A = +25°C unless otherwise specified)

Parameter	Test Conditions	Min	Typ	Max	Unit
Chroma Input Resistance		–	2.3	–	kΩ
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