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NTE705A
Integrated Circuit
Chroma Demodulator

Description:

The NTE705A is a monolithic chroma demodulator constructed using the planar epitaxial process. This device demodulates the chroma subcarrier information contained in a color television video signal and provides color–difference signals at the outputs. The low voltage drift of the DC output insures excellent performance in direct–coupled chrominance output circuitry.

Features:

- Low Output Voltage Drift with Temperature
- Doubly Balanced Demodulation
- Internal Color–Difference Matrix for NTSC Color TV
- 10V Peak–to–Peak E_B–E_Y Output

Absolute Maximum Ratings:

Supply Voltage, ... 28V
Minimum Load Resistance 3kΩ
Peak–to–Peak Reference Input Voltage 5V
Peak–to–Peak Chroma Input Voltage 5V
Internal Power Dissipation 500mW
Operating Temperature Range, T_{opr} . . . . . 0° to +70°C
Storage Temperature Range, T_{stg} . . . . . –65° to +150°C
Lead Temperature (Soldering, 60 seconds) . . . . . 300°C

Electrical Characteristics: (T_A = +25°C, V+ = 24V, unless otherwise specifid)

Parameter	Test Conditions	Min	Typ	Max	Unit
Supply Current	e_C = 0, R_L = 1MΩ	5.5	9.0	12.5	mA
	e_C = 0, R_L = 1MΩ, T_A = +70°C	–	9.0	13.0	mA
	e_C = 0	16.5	22	25.5	mA
	e_C = 0, T_A = +70°C	–	22	–	mA
Internal Power Dissipation	e_C = 0	–	340	430	mW
	e_C = 0, T_A = +70°C	–	340	445	mW
DC Voltage at any Output Terminal	e_C = 0	13.2	14.5	15.8	V
	e_C = 0, T_A = +70°C	13.0	14.5	16.0	V
Temp. Coefficient of DC Voltage at any Output Terminal	e_C = 0	–5.0	–0.3	+5.0	mV/°C
Absolute Value of DC Difference Voltage between any Two Outputs	e_C = 0	–	0.15	0.6	V
DC Voltage at either Reference Terminal	e_A = e_B = e_C = 0	–	5.8	–	V

Electrical Characteristics (Cont'd): (T_A = +25°C, V+ = 24V, unless otherwise specifid)

Parameter	Test Conditions	Min	Typ	Max	Unit
DC Voltage at either Chroma Terminal	e_C = 0	–	3.2	–	V
Reference Input Resistance	e_C = 0	–	1.7	–	kΩ
Reference Input Capacitance	e_C = 0	–	6.0	–	pF
Chroma Input Resistance		–	0.8	–	kΩ
Chroma Input Capacitance		–	5.0	–	pF
Peak–to–Peak Chroma Input Voltage	$E_B - E_Y = 5V_{p-p}$	–	0.4	0.7	V
Peak–to–Peak E_R–E_Y Output Voltage	$E_B - E_Y = 5V_{p-p}$	3.5	3.8	4.2	V
Peak–to–Peak E_G–E_Y Output Voltage	$E_B - E_Y = 5V_{p-p}$	0.75	1.0	1.25	V
Max. Peak–to–Peak E_B–E_Y Output Voltage	$e_C = 1.5V_{p-p}$	8.0	10	–	V
E_B–E_Y Demodulation Angle	E_B–$E_Y = 5V_{p-p}$	–	3	–	Degrees
E_R–E_Y Demodulation Angle	E_B–$E_Y = 5V_{p-p}$	–	109	–	Degrees
E_G–E_Y Demodulation Angle	E_B–$E_Y = 5V_{p-p}$	–	259	–	Degrees
E_R–E_Y Demodulation Angle relative to E_B–E_Y Demodulation Angle	E_B–$E_Y = 5V_{p-p}$	101	106	111	Degrees
E_B–E_Y Demodulation Angle relative to E_G–E_Y Demodulation Angle	E_B–$E_Y = 5V_{p-p}$	96	104	112	Degrees
Highest AC Unbalance Voltage at any Ouput Terminal	e_C = 0	–	0.3	0.8	V_{p-p}

Pin Connection Diagram
(Top View)