



ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748-5089
<http://www.nteinc.com>

NTE1297 Integrated Circuit TV Color Signal Processor/Demodulator

Description:

The NTE1297 is an integrated circuit consisting of an NTSC color signal processor and demodulator circuit. APC color synchronization and DC color-phase control is employed to ensure stability.

Features:

- Peak-type ACC Detector
- Internal Setting of ACC and Color Killer Levels
- APC System uses Sample and Hold for Color Synchronization
- Detector Circuit has Output Temperature Characteristics

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

Supply Voltage, V_{CC} 16V
Power Dissipation, P_D 1.4W
Derating ($T_A \geq 25^\circ\text{C}$), K_θ 14mW/ $^\circ\text{C}$
Operating Temperature Range, T_{opg} -20° to $+75^\circ\text{C}$
Storage Temperature Range, T_{stg} -40° to $+125^\circ\text{C}$

Electrical Characteristics: ($T_A = +25^\circ\text{C}$, $V_{CC} = 12\text{V}$ unless otherwise specified)

Parameter	Symbol	Test Conditions			Min	Typ	Max	Unit
		Color Signal Input (dB)	Pin 2 Voltage (V)	Pin 8 Voltage (V)				
Circuit Current	I_{CC}	Off	6	6	27	38	49	mA
Color Signal Max. Gain	G_c	-22	8	6	36	42	47	dB
Color Signal Max. Output	V_{cmax}	0	8	6	0.9	1.25	1.6	V_{p-p}
ACC Control Range (Note 1)	R_{ACC}	-	6	6	-18	-	-	dB

Electrical Characteristics (Cont'd): ($T_A = +25^{\circ}\text{C}$, $V_{CC} = 12\text{V}$ unless otherwise specified)

Parameter	Symbol	Test Conditions			Min	Typ	Max	Unit
		Color Signal Input (dB)	Pin 2 Voltage (V)	Pin 8 Voltage (V)				
Killer Operational Input Level	$V_{I(K)}$	–	6	6	–46	–37	–28	dB
Color Saturation Characteristics	C	0	4 to 8	6	40	–	–	dB
Color Phase Characteristics	T	0	5.5	4 to 8	–	90	–	Deg.
APC Pull-In Range	F_p	0	6	6	± 400	–	–	Hz
Output Voltage	E_{ODC}	Off	6	6	6.6	7.0	7.4	V_{DC}
Output Offset Voltage	ΔE_{ODC}	Off	6	6	–	–	0.3	V_{DC}
Output Voltage Temp. Coefficient	$\delta E_{ODC}/\delta T$	Off	6	6	–2	0	2	mV/ $^{\circ}\text{C}$
Max. Demodulation Output Voltage (Note 2)	E_{omax}	0	8	6	4	–	–	V_{p-p}
B–Y Demodulation Sensitivity (Note 2,3)	E_{CO}	0	–	6	3	4	5	V_{p-p}
Demodulated Output Voltage Ratio (Note 2,4)	$\frac{E_{o(R-Y)}}{E_{o(B-Y)}}$	0	–	6	–	0.81	–	
	$\frac{E_{o(G-Y)}}{E_{o(B-Y)}}$	0	–	6	–	0.32	–	
Demodulated Phase Angle	θ_{R-Y}	0	5.5	6	–	106	–	Deg.
	θ_{B-Y}	0	5.5	6	–	259	–	Deg.

Note *. Color Input signal consists of 50mV_{p-p} burst portion and 100mV_{p-p} color portion, treated as 0dB levels (frequency = $3.579545\text{MHz} \pm 5\text{Hz}$)

Note 1. ACC control range is the input level when color output voltage is decreased by 3dB, compared with color output voltage which occurs with a 0dB color input signal.

Note 2. Color portion frequency = 3.50MHz.

Note 3. For color signal output voltage of $0.5V_{p-p}$

Note 4. For color signal output voltage of $0.3V_{p-p}$

Pin Connection Diagram

GND	1	22	Color Signal Input
Color Saturation Control	2	21	Bypass
Burst Gate Pulse Input	3	20	ACC Filter
APC Filter	4	19	Killer Filter
APC Filter	5	18	Color Signal Output
Quartz Control	6	17	B – Y Signal Input
Quartz Control	7	16	R – Y Signal Input
Color Phase Control	8	15	V _{CC}
Color Subcarrier Output	9	14	B – Y Output
B – Y Subcarrier Input	10	13	R – Y Output
R – Y Subcarrier Input	11	12	G – Y Output

