



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 ( $T_A \geq 25^\circ\text{C}$ ),  $K_\theta$  ..... 14mW/ $^\circ\text{C}$   
 Operating Temperature Range,  $T_{opg}$  .....  $-20^\circ$  to  $+75^\circ\text{C}$   
 Storage Temperature Range,  $T_{stg}$  .....  $-40^\circ$  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	$\pm 400$	-	-	Hz
Output Voltage	$E_{ODC}$	Off	6	6	6.6	7.0	7.4	$V_{DC}$
Output Offset Voltage	$\Delta E_{ODC}$	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	$\theta_{R-Y}$	0	5.5	6	-	106	-	Deg.
	$\theta_{B-Y}$	0	5.5	6	-	259	-	Deg.

Note \*. Color Input signal consists of  $50\text{mV}_{p-p}$  burst portion and  $100\text{mV}_{p-p}$  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

