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## **NTE1673**

### **Integrated Circuit**

### **Video Chroma Processor**

**Description:**

The NTE1673 is a multifunctional integrated circuit in a 28-Lead DIP type package where an APC chroma circuit is formed so compactly as to use only 16 pins with the characteristic requirements remaining fulfilled and the rest of pins are used for video circuits. It contains a double differential circuit enabling soft video tone, a color temperature control circuit enabling reproduction of beautiful bright white color and true color, and a high level contrast circuit eliminating brightness drop at the time of contrast adjustment, thereby allowing a wider design margin for television set design engineers.

**Functions:**

- Band-Pass Amp
- Voltage Controlled Oscillation
- Peak Clip
- Color Saturation Control
- Double Differential
- Killer
- Contrast Amp
- Color Temperature Control
- Tint Control
- DC Restoration
- Automatic Saturation Control
- Automatic Phase Control
- Blanking
- Chroma Demodulation
- Bright Control

**Functions:**

- High level contrast system eliminating brightness drop at the time of contrast adjustment.
- Double differential circuit enabling soft video tone.
- Color temperature control function enabling reproduction of beautiful bright white color and true color
- Capable of being connected to IC for VIR.
- Only one adjustment: APC adjustment
- Minimum number of external parts required.

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

Maximum Supply Voltage, $V_{CCmax}$ .....	14.5V
Allowable Power Dissipation ( $T_A \leq +65^\circ\text{C}$ ), $P_{Dmax}$ .....	875mW
Operating Temperature Range, $T_{opr}$ .....	$-20^\circ$ to $+70^\circ\text{C}$
Storage Temperature Range, $T_{stg}$ .....	$-40^\circ$ to $+125^\circ\text{C}$

**Electrical Characteristics:** ( $T_A = +25^\circ\text{C}$ ,  $V_{CC} = 12\text{V}$ , 0dB input: burst  $100\text{mV}_{p-p}$ , chroma  $200\text{mV}_{p-p}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Chroma Characteristics</b>						
ACC Amplitude Characteristic	$G_A$	+6dB	-7	0	$\pm 3$	dB
		-20dB	-	-3	+2	dB
ACC Phase Characteristic	$\phi_A$	+6dB	-	0	$\pm 3$	deg
		-20dB	-	$\pm 3$	$\pm 7$	deg
Killer Operating Point	$V_{i(K)}$		-55	-47	-40	dB
Maximum B-Y Demodulation	$\Theta_{OBM}$		4.5	5.5	-	$V_{p-p}$
Tint Change Range	$\Delta T(T_{max} - T_{min})$		-	120	-	deg
Static Phase Error	$\phi_\Theta$	$\Delta f = \pm 100\text{Hz}$	$\pm 1.5$	$\pm 5$	-	deg
APC Pull-in Range	$f_p$		$\pm 350$	$\pm 500$	-	Hz
Demodulation Output DC Voltage	$V_{12}, V_{13}, V_{14}$		6.7	7.2	7.7	V
Demodulation Output DC	$V_{12} - V_{13}$		-	300	-	mV
<b>Video Characteristics</b>						
Video Tone Control	$G_{p \max}$		7.0	9.5	12.0	dB
	$G_{p \min}$		-5.0	-2.5	-1.0	dB
Video Gain	$G_v$		10	12.5	15.0	dB
Contrast Variable Range	$\Delta G_C$		8	10	12	dB
Frequency Characteristic	$\Delta G_v$	$f = 5\text{MHz}$	-3	-	-	dB

### Pin Connection Diagram

Video Input	<b>1</b>	<b>28</b>	Video Tone Control
Color Control	<b>2</b>	<b>27</b>	Sharp Video Tone Network
ACC Detector	<b>3</b>	<b>26</b>	Sharp Video Tone Network
$V_{CC}$	<b>4</b>	<b>25</b>	Soft Video Tone Network
Killer RC Network	<b>5</b>	<b>24</b>	Contrast Control
GND	<b>6</b>	<b>23</b>	High Level Contrast Control
Tint Control	<b>7</b>	<b>22</b>	DC Restorer Network
X'tal	<b>8</b>	<b>21</b>	Brightness Control
Tint Network	<b>9</b>	<b>20</b>	Horiz Sync Output
Demod Network	<b>10</b>	<b>19</b>	Brightness Sample
APC Control	<b>11</b>	<b>18</b>	Horiz Blank Pulse
R - Y Demodulation	<b>12</b>	<b>17</b>	Color Temp Control
G - Y Matrix	<b>13</b>	<b>16</b>	Horiz Sync Input
B - Y Demodulation	<b>14</b>	<b>15</b>	Video Output Driver

