



**ELECTRONICS, INC.**  
 44 FARRAND STREET  
 BLOOMFIELD, NJ 07003  
 (973) 748-5089

## NTE1701 Integrated Circuit VCR Cylinder Servo Control Circuit

**Features:**

- Phase Control Circuit
- Speed Control Circuit
- CTL Amplifier
- Capstan PG Amplifier
- Sample Hold Type Speed Control
- Supply Voltage Either 9V or 12V

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

Supply Voltage,  $V_{1-7}$  ..... 14.4V  
 Power Dissipation ( $T_A = +70^\circ\text{C}$ ),  $P_D$  ..... 880mW  
 Operating Ambient Temperature Range,  $T_{opr}$  .....  $-20^\circ$  to  $+70^\circ\text{C}$   
 Storage Temperature Range,  $T_{stg}$  .....  $-40^\circ$  to  $+150^\circ\text{C}$

**Electrical Characteristics:** ( $T_A = +25^\circ\text{C} \pm 2^\circ\text{C}$ ,  $V_{CC} = 12\text{V}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Circuit Current	$I_1$	$V_{1-7} = 12\text{V}$	33	–	65	mA
PG (–) Amp Input Sensitivity	$S_{24}$	$V_i$ Pin23 $1V_{O-P}$ , $V_i$ Pin24 30Hz, Duty 4%	1	–	–	$V_{O-P}$
PG (+) Amp Input Sensitivity	$S_{23}$		1	–	–	$V_{O-P}$
Cap PG Amp Input Sensitivity	$S_3$		50	–	–	$mV_{O-P}$
$V_{SS}$ Amp Input Sensitivity	$S_{25}$		2	–	–	$V_{O-P}$
REC/PB Select Sensitivity	$V_{28}$		5	–	–	V
Phase System Trapezoidal Wave Reference Voltage	$V_{17}$		2.7	–	3.7	V
Head SW Output Voltage, High	$V_{20-H}$	Pin24 $2V_{P-P}$ 30Hz, Duty 96%, Pin23 $2V_{P-P}$ 30Hz, Duty 4%	9	–	–	V
Head SW Output Voltage, Low	$V_{20-L}$		–	–	600	mV
REC CTL Amp Output Voltage, High	$V_{6-H}$		8	–	–	V
REC CTL Amp Output Voltage, Low	$V_{6-L}$		–	–	1	V
S/H 1 Output Voltage, High	$V_{15-H}$		9	–	–	V
S/H 1 Output Voltage, Low	$V_{15-L}$		–	–	600	mV

Note 1. Operating supply voltage range,  $V_{CC(opr)} = 8.8\text{V}$  to  $13\text{V}$ .

**Electrical Characteristics (Cont'd):** ( $T_A = +25^\circ\text{C} \pm 2^\circ\text{C}$ ,  $V_{CC} = 12\text{V}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
CTL Amp Gain	$B_2$		62	–	70	dB
FG Amp Input Sensitivity	$S_{14}$		100	–	–	mV <sub>P-P</sub>
Speed System Trapezoidal Reference Voltage	$V_{10}$		2.7	–	3.7	V
S/H 2 Output Voltage, High	$V_{8-H}$		10	–	–	V
S/H 2 Output Voltage, Low	$V_{8-L}$		–	–	1.8	V
Cap PG Output Voltage, High	$V_{2-H}$		44	–	6.6	V
Cap PG Output Voltage, Low	$V_{2-L}$		–	–	600	mV

Note 1. Operating supply voltage range,  $V_{CC(\text{opr})} = 8.8\text{V}$  to  $13\text{V}$ .

**Pin Connection Diagram**



