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## NTE1428 Integrated Circuit Cylinder Servo Control Circuit for VCR

**Description:**

The NTE1428 is an integrated circuit designed for VTR's cylinder servo control.

**Features:**

- Sample Hold System Speed Control
- Incorporating Recording/Playback Switching Circuit
- 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, $P_D$ .....                 | 880mW         |
| Operation ambient temperature, $T_{opr}$ ..... | -20 to +70°C  |
| Storage temperature, $T_{stg}$ .....           | -40 to +150°C |

**Electrical Characteristics:** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

| Parameter                                    | Symbol           | Test Conditions                                           | Min                                   | Typ | Max | Unit        |             |
|----------------------------------------------|------------------|-----------------------------------------------------------|---------------------------------------|-----|-----|-------------|-------------|
| Circuit Current                              | $I_1$            | $V_{1-7} = 12V$                                           | 33                                    | -   | 65  | mA          |             |
| Sensitivity                                  | PG - Amp. In     | $V_{CC} = 12V, 30\text{Hz duty } 96\%$                    | 1                                     | -   | -   | $V_{o-p}$   |             |
|                                              | PG + Amp. In     |                                                           | $V_{CC} = 12V, 30\text{Hz duty } 4\%$ | 1   | -   | -           | $V_{o-p}$   |
|                                              | Cap PG Amp. In   |                                                           | $V_{CC} = 12V$                        | 50  | -   | -           | m $V_{o-p}$ |
|                                              | $V_{SS}$ Amp. In |                                                           |                                       | 2   | -   | -           | $V_{o-p}$   |
|                                              | REF Amp. In      |                                                           |                                       | 3   | -   | -           | $V_{o-p}$   |
|                                              | REC/P.B. Switch  |                                                           |                                       | 5   | -   | -           | V           |
| Ref. Voltage (phase trapezoidal wave)        | $V_{REF(1)}$     |                                                           | 2.7                                   | -   | 3.7 | V           |             |
| High-level output Voltage (Head-SW)          | $V_{OH(1)}$      | $V_{CC} = 12V, V_{I24} = 2V_{p-p}, 30\text{Hz duty } 4\%$ | 9                                     | -   | -   | V           |             |
| Low-level output Voltage (Head-SW)           | $V_{OL(2)}$      |                                                           | -                                     | -   | 600 | mV          |             |
| High-level output Voltage (REC CTL Amp)      | $V_{OH(2)}$      | $V_{CC} = 12V$                                            | 8                                     | -   | -   | V           |             |
| Low-level output Voltage (REC CTL Amp)       | $V_{OL(2)}$      |                                                           | -                                     | -   | 1   | V           |             |
| High-level output Voltage (S/H1)             | $V_{OH(3)}$      |                                                           | 9                                     | -   | -   | V           |             |
| Low-level output Voltage (S/H1)              | $V_{OL(3)}$      |                                                           | -                                     | -   | 600 | mV          |             |
| Voltage Gain (CTL Amp.)                      | $G_V$            |                                                           | 62                                    | -   | 70  | dB          |             |
| Sensitivity (FG Amp. In)                     | $S_{(7)}$        |                                                           | 100                                   | -   | -   | m $V_{p-p}$ |             |
| Ref. Voltage (speed system trapezoidal wave) | $V_{REF(2)}$     |                                                           | 2.7                                   | -   | 3.7 | V           |             |

**Electrical Characteristics (Cont'd):** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

| Parameter                          | Symbol      | Test Conditions       | Min | Typ | Max | Unit |
|------------------------------------|-------------|-----------------------|-----|-----|-----|------|
| High-level output Voltage (S/H2)   | $V_{OH(4)}$ | $V_{CC} = 12\text{V}$ | 10  | -   | -   | V    |
| Low-level output Voltage (S/H2)    | $V_{OL(4)}$ |                       | -   | -   | 1.8 | V    |
| High-level output Voltage (Cap PG) | $V_{OH(5)}$ |                       | 4.4 | -   | 6.6 | V    |
| Low-level output Voltage (Cap PG)  | $V_{OL(5)}$ |                       | -   | -   | 600 | mV   |

**Pin Connection Diagram**

