

## NTE1812 Integrated Circuit Capstan Interface Circuit for VCR

### **Description:**

The NTE1812 is an integrated circuit in a 20-Lead DIP type package designed for VCR capstan interface.

### **Features:**

- The Functions Consist of:
  - FG Amplifier
  - 2H/4H/6H Automatic Detector
  - FG Divider
  - Gain Automatic Change Circuit
- Supply Voltage: 5V

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

Supply Voltage,  $V_{CC}$  ..... 6.0V  
 Power dissipation ( $T_A = +70^\circ\text{C}$ ),  $P_D$  ..... 100mW  
 Operating Ambient Temperature Range,  $T_{opr}$  .....  $-20^\circ$  to  $+70^\circ\text{C}$   
 Storage Temperature Range,  $T_{stg}$  .....  $-55^\circ$  to  $+150^\circ\text{C}$

### **Electrical Characteristics:** ( $V_{CC} = 5V$ , $T_A = +25^\circ\text{C} \pm 2^\circ\text{C}$ unless otherwise specified)

| Parameter                                                         | Symbol           | Test Conditions  | Min | Typ | Max | Unit |
|-------------------------------------------------------------------|------------------|------------------|-----|-----|-----|------|
| Circuit Current                                                   | $I_{18}$         | $V_{REF} = 2.5V$ | 7   | —   | 14  | mA   |
| FG Amp Input Sensitivity                                          | $S_{19}$         |                  | 30  | —   | —   | mV   |
| FG High-Level Frequency Dividing Output                           | $V_{OH17}$       |                  | 4.6 | —   | —   | V    |
| FG Low-Level Frequency Dividing Output                            | $V_{OL17}$       |                  | —   | —   | 4.0 | V    |
| A/B High-Level Output                                             | $V_{OHA, B}$     | $-I = 2mA$       | 3.3 | —   | —   | V    |
| A/B Low-Level Output                                              | $V_{OLA, B}$     |                  | —   | —   | 0.4 | V    |
| Playback CTL Input Sensitivity                                    | $S_{16}$         |                  | 3.0 | —   | —   | V    |
| Mode Select Sensitivity<br>Record/Playback PAL/MTSCX 1/2, C, A, B | $S_{(MODE)}$     |                  | 3.0 | —   | —   | V    |
| OP Amp. 3 High-Level Output                                       | $V_{OH11}$       |                  | 3.8 | —   | —   | V    |
| OP Amp. 3 Low-Level Output                                        | $V_{OL11}$       |                  | —   | —   | 1.1 | V    |
| Total Offset OP. Amp. NTSC 2H                                     | $V_{O(offset)2}$ |                  | —   | —   | 30  | mV   |
| Total Offset OP. Amp NTSC 6H                                      | $V_{O(offset)6}$ |                  | —   | —   | 30  | mV   |
| OP. Amp. 2 Gain                                                   | $G_{V2}$         |                  | -4  | —   | +2  | dB   |

Note 1. Operating Supply Range  $V_{CC(opr)} = 4.5V$  to  $5.5V$

# Pin Connection Diagram

|                   |           |           |                   |
|-------------------|-----------|-----------|-------------------|
| Mode Select B     | <b>1</b>  | <b>20</b> | Mode Select A     |
| GND               | <b>2</b>  | <b>19</b> | Cap FG Input      |
| Mode Select C     | <b>3</b>  | <b>18</b> | V <sub>CC</sub>   |
| Mode Select x 1/2 | <b>4</b>  | <b>17</b> | Cap FG Output     |
| PAL/NTSC Select   | <b>5</b>  | <b>16</b> | PB Control Input  |
| B Output          | <b>6</b>  | <b>15</b> | FG Divide Select  |
| A Output          | <b>7</b>  | <b>14</b> | Memory            |
| Cap Error Input   | <b>8</b>  | <b>13</b> | Rec 2/4/6H Select |
| Reference Input   | <b>9</b>  | <b>12</b> | Rec/PB Select     |
| OP Amp Input      | <b>10</b> | <b>11</b> | Cap Error Output  |

