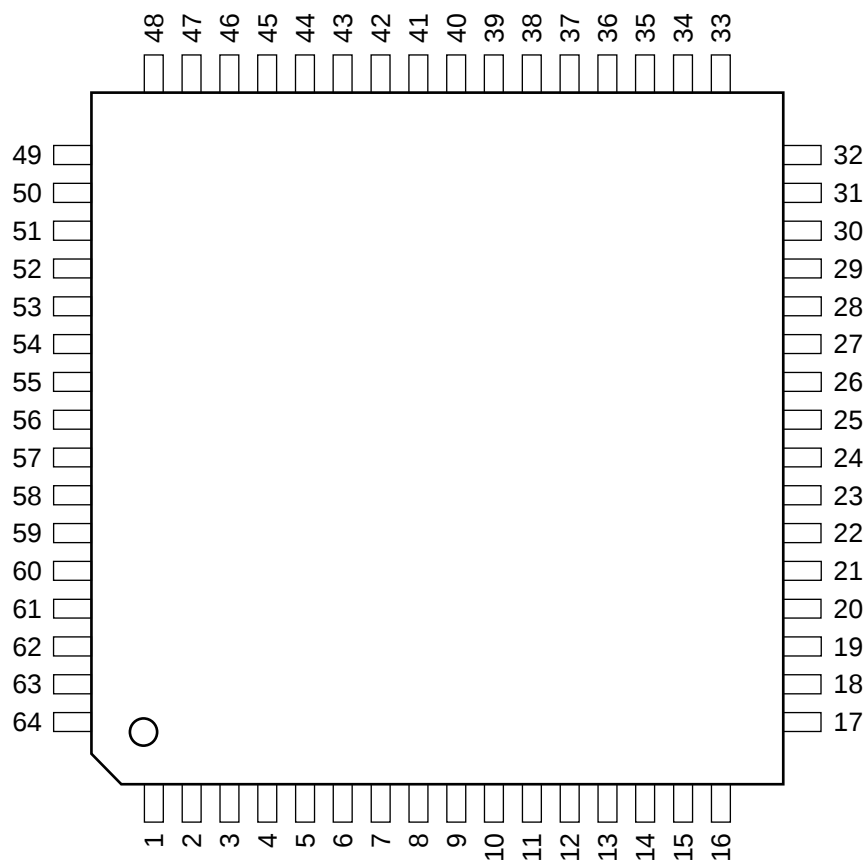


## TIMING PULSE GENERATOR FOR CCD CAMERA

—TOP VIEW—



| PIN NO. | I/O | SIGNAL           | PIN NO. | I/O | SIGNAL           | PIN NO. | I/O | SIGNAL               | PIN NO. | I/O | SIGNAL          |
|---------|-----|------------------|---------|-----|------------------|---------|-----|----------------------|---------|-----|-----------------|
| 1       | O   | OSCO             | 17      | O   | A3               | 33      | O   | $\overline{V3}$      | 49      | I/O | CLP2            |
| 2       | I   | OSCI             | 18      | O   | A0               | 34      | O   | $\overline{SG2}$     | 50      | I/O | CLP3            |
| 3       | I   | EF               | 19      | O   | A1               | 35      | O   | $\overline{V4}$      | 51      | O   | CLP4            |
| 4       | I   | ED0              | 20      | O   | A2               | 36      | I   | TEST2                | 52      | O   | PBLK            |
| 5       | I   | ED1              | 21      | —   | GND              | 37      | O   | MCK                  | 53      | O   | ID              |
| 6       | I   | ED2              | 22      | O   | RG               | 38      | O   | $\overline{SHP}$     | 54      | O   | WEN             |
| 7       | I   | SMD1             | 23      | —   | NC               | 39      | O   | $\overline{SHD}$     | 55      | I   | GM              |
| 8       | —   | GND              | 24      | —   | Vcc              | 40      | —   | GND                  | 56      | —   | Vcc             |
| 9       | I   | SMD2             | 25      | —   | Vcc              | 41      | O   | $\overline{SP1}$     | 57      | O   | CL              |
| 10      | O   | $\overline{VCT}$ | 26      | O   | H1               | 42      | O   | $\overline{SP2}$     | 58      | I   | PS              |
| 11      | I   | D1               | 27      | O   | H2               | 43      | O   | $\overline{SH1/SHP}$ | 59      | I   | HD              |
| 12      | I   | D2               | 28      | —   | GND              | 44      | O   | $\overline{SH2/SHD}$ | 60      | I   | VD              |
| 13      | I   | D3               | 29      | O   | $\overline{SUB}$ | 45      | O   | $\overline{DL1}$     | 61      | I   | HTSG            |
| 14      | I   | D4               | 30      | O   | $\overline{V2}$  | 46      | O   | $\overline{DL2}$     | 62      | I   | TEST            |
| 15      | O   | A5               | 31      | O   | $\overline{V1}$  | 47      | O   | BFG                  | 63      | O   | $\overline{CK}$ |
| 16      | O   | A4               | 32      | O   | $\overline{SG1}$ | 48      | O   | CLP1                 | 64      | I   | CK              |

**INPUTS**

|             |                                                   |
|-------------|---------------------------------------------------|
| CK          | : NTSC (1820 fH)/PAL (1816 fH) CLOCK              |
| D1          | : <u>NORMALLY FIX TO "LOW" LEVEL</u>              |
| D2          | : <u>COLOR/BW SELECT</u>                          |
| D3          | : <u>FIELD/FRAME SELECT</u>                       |
| D4          | : <u>NTSC (EIA) /PAL (CCIR) SELECT</u>            |
| ED0 - ED2   | : SHUTTER SPEED SETTING                           |
| EF          | : <u>(NOT IN USE)</u>                             |
| GM          | : <u>ANALOG PROCESSING/DIGITAL PROCESSING</u>     |
| HD          | : HORIZONTAL SYNC                                 |
| HTSG        | : XSG1, XSG2 CONTROL                              |
| OSCI        | : INVERTER FOR OSCILLATOR                         |
| PS          | : SHUTTER SPEED SELECT ( <u>SERIAL/PARALLEL</u> ) |
| SMD1, SMD2  | : SHUTTER MODE SETTING                            |
| TEST, TEST2 | : TEST                                            |
| VD          | : VERTICAL SYNC                                   |

**OUTPUTS**

|                 |                                       |
|-----------------|---------------------------------------|
| A0 - A5         | : (NOT IN USE)                        |
| BFG             | : ENCODER/CHROMA MODULATOR PULSE      |
| <u>CK</u>       | : NTSC (1820 fH)/PAL (1816 fH) CLOCK  |
| CL              | : NTSC (910 fH)/PAL (908 fH) CLOCK    |
| CLP1, CLP4      | : CLAMP PULSE                         |
| <u>DL1, DL2</u> | : CLOCK FOR DELAY LINE                |
| H1, H2          | : CCD HORIZONTAL REGISTER DRIVE CLOCK |
| ID              | : LINE IDENTIFICATION                 |
| MCK             | : NTSC (910 fH)/PAL (908 fH) CLOCK    |
| OSCO            | : INVERTER FOR OSCILLATOR             |
| PBLK            | : BLANKING CLEANING PULSE             |
| RG              | : RESET GATE PULSE                    |
| <u>SG1, SG2</u> | : CCD ELECTRIC CHARGE READ OUT PULSE  |
| <u>SH1, SH2</u> | : SELECTION                           |
| <u>SHD, SHD</u> | : DATA S/H PULSE                      |
| <u>SHP, SHP</u> | : PRE-CHARGE LEVEL S/H PULSE          |
| <u>SP1, SP2</u> | : COLOR SEPARATION S/H PULSE          |
| <u>SUB</u>      | : CCD ELECTRIC CHARGE SUBSTRATE PULSE |
| <u>V1 - V4</u>  | : CCD VERTICAL REGISTER DRIVE CLOCK   |
| <u>VCT</u>      | : (NOT IN USE)                        |
| WEN             | : WRITE ENABLE                        |

**INPUT/OUTPUT**

|            |               |
|------------|---------------|
| CLP2, CLP3 | : CLAMP PULSE |
|------------|---------------|

**OTHER**

|    |                 |
|----|-----------------|
| NC | : NO CONNECTION |
|----|-----------------|

