

| REVISIONS |                                                                                                                                                                                             |                 |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| LTR       | DESCRIPTION                                                                                                                                                                                 | DATE (YR-MO-DA) | APPROVED        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| A         | Delete vendor CAGE 27014. Change vendor CAGE 18714 to 34371. Add vendor CAGE code 01295. Change drawing CAGE code to 67268. Changes to table II and figure 4. Editorial changes throughout. | 1990 SEP 14     | <i>M. O. L.</i> |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|           |                                                                                                                                                                                             |                 |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

CURRENT CAGE CODE 67268

|                         |       |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |
|-------------------------|-------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|--|
| REV                     |       |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |
| SHEET                   |       |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |
| REV                     |       |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |
| SHEET                   |       |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |
| REV STATUS<br>OF SHEETS | REV   | A | A | A | A | A | A | A | A | A | A  | A  | A  | A  | A  | A  | A  | A  | A  |  |
| SHEET                   | SHEET | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |  |

|                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |           |  |   |       |            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------|--|---|-------|------------|
| PMIC N/A<br><br><div style="text-align: center; font-weight: bold;">STANDARDIZED<br/>MILITARY<br/>DRAWING</div> <p style="font-size: 0.8em;">THIS DRAWING IS AVAILABLE<br/>FOR USE BY ALL DEPARTMENTS<br/>AND AGENCIES OF THE<br/>DEPARTMENT OF DEFENSE</p> <p style="font-weight: bold; font-size: 0.8em;">AMSC N/A</p> | PREPARED BY<br><i>Marcia B Kelleher</i><br>CHECKED BY<br><i>Thomas J. Riccio</i><br>APPROVED BY<br><i>[Signature]</i><br>DRAWING APPROVAL DATE<br>14 APRIL 1987<br>REVISION LEVEL<br>A | DEFENSE ELECTRONICS SUPPLY CENTER<br>DAYTON, OHIO 45444<br><br>MICROCIRCUITS, DIGITAL, HIGH-SPEED CMOS,<br>BUS TRANSCEIVER, MONOLITHIC SILICON<br><br><table style="width: 100%;"> <tr> <td style="width: 10%;">SIZE</td> <td style="width: 20%;">CAGE CODE</td> <td style="width: 70%;"></td> </tr> <tr> <td style="text-align: center; font-weight: bold;">A</td> <td style="text-align: center; font-weight: bold;">14933</td> <td style="text-align: center; font-weight: bold;">5962-87809</td> </tr> </table> | SIZE | CAGE CODE |  | A | 14933 | 5962-87809 |
| SIZE                                                                                                                                                                                                                                                                                                                     | CAGE CODE                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |           |  |   |       |            |
| A                                                                                                                                                                                                                                                                                                                        | 14933                                                                                                                                                                                  | 5962-87809                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |           |  |   |       |            |
|                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                        | SHEET    1    OF    12    1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |      |           |  |   |       |            |

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5962-E1759

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

# 1. SCOPE

1.1 Scope. This drawing describes device requirements for class B microcircuits in accordance with 1.2.1 of MIL-STD-883, "Provisions for the use of MIL-STD-883 in conjunction with compliant non-JAN devices".

1.2 Part number. The complete part number shall be as shown in the following example:

|                |                        |                         |                                |
|----------------|------------------------|-------------------------|--------------------------------|
| 5962-87809     | 01                     | R                       | X                              |
|                |                        |                         |                                |
|                |                        |                         |                                |
|                |                        |                         |                                |
|                |                        |                         |                                |
| Drawing number | Device type<br>(1.2.1) | Case outline<br>(1.2.2) | Lead finish per<br>MIL-M-38510 |

1.2.1 Device type. The device type shall identify the circuit function as follows:

| Device type | Generic number | Circuit function                               |
|-------------|----------------|------------------------------------------------|
| 01          | 54HC640        | Octal three-state inverting<br>bus transceiver |

1.2.2 Case outlines. The case outlines shall be as designated in appendix C of MIL-M-38510, and as follows:

| Outline letter | Case outline                                                             |
|----------------|--------------------------------------------------------------------------|
| R              | D-8 (20-lead, 1.060" x .310" x .200"), dual-in-line package              |
| 2              | C-2 (20-terminal, .358" x .358" x .100"), square chip<br>carrier package |

# 1.3 Absolute maximum ratings.

|                                                                  |                                  |
|------------------------------------------------------------------|----------------------------------|
| Supply voltage range - - - - -                                   | -0.5 Vdc to +7.0 V dc            |
| DC input voltage - - - - -                                       | -0.5 V dc to $V_{CC} + 0.5$ V dc |
| DC output voltage - - - - -                                      | -0.5 V dc to $V_{CC} + 0.5$ V dc |
| Clamp diode current - - - - -                                    | $\pm 20$ mA                      |
| DC output current (per pin) - - - - -                            | $\pm 35$ mA                      |
| DC $V_{CC}$ or GND current (per pin) - - - - -                   | $\pm 70$ mA                      |
| Storage temperature range - - - - -                              | -65°C to +150°C                  |
| Maximum power dissipation ( $P_D$ ) 2/ - - - - -                 | 500 mW                           |
| Lead temperature (soldering, 10 seconds) - - - - -               | +260°C                           |
| Thermal resistance, junction-to-case ( $\theta_{JC}$ ) - - - - - | See MIL-M-38510, appendix C      |
| Junction temperature ( $T_J$ ) - - - - -                         | +175°C                           |

1/ Unless otherwise specified, all voltages are referenced to ground.

2/ For  $T_J = +100^\circ\text{C}$  to  $+125^\circ\text{C}$ , derate linearly at 8 mW/°C.

|                                                                                                     |                  |                     |            |
|-----------------------------------------------------------------------------------------------------|------------------|---------------------|------------|
| <b>STANDARDIZED<br/>MILITARY DRAWING</b><br>DEFENSE ELECTRONICS SUPPLY CENTER<br>DAYTON, OHIO 45444 | SIZE<br><b>A</b> | 5962-87809          |            |
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#### 1.4 Recommended operating conditions.

|                                            |           |                        |
|--------------------------------------------|-----------|------------------------|
| Supply voltage ( $V_{CC}$ )                | - - - - - | +2.0 V dc to +6.0 V dc |
| Case operating temperature range ( $T_C$ ) | - - - - - | -55°C to +125°C        |
| Input voltage range ( $V_{IN}$ )           | - - - - - | 0.0 V to $V_{CC}$      |
| Output voltage range ( $V_{OUT}$ )         | - - - - - | 0.0 V to $V_{CC}$      |
| Input rise or fall time:                   |           |                        |
| $V_{CC} = 2.0$ V                           | - - - - - | 0 to 1,000 ns          |
| $V_{CC} = 4.5$ V                           | - - - - - | 0 to 500 ns            |
| $V_{CC} = 6.0$ V                           | - - - - - | 0 to 400 ns            |

#### 2. APPLICABLE DOCUMENTS

2.1 Government specification, standard, and bulletin. Unless otherwise specified, the following specification, standard, and bulletin of the issue listed in that issue of the Department of Defense Index of Specifications and Standards specified in the solicitation, form a part of this drawing to the extent specified herein.

##### SPECIFICATION

###### MILITARY

MIL-M-38510 - Microcircuits, General Specification for.

##### STANDARD

###### MILITARY

MIL-STD-883 - Test Methods and Procedures for Microelectronics.

##### BULLETIN

###### MILITARY

MIL-BUL-103 - List of Standardized Military Drawings (SMD's).

(Copies of the specification, standard, and bulletin required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Order of precedence. In the event of a conflict between the text of this drawing and the references cited herein, the text of this drawing shall take precedence.

#### 3. REQUIREMENTS

3.1 Item requirements. The individual item requirements shall be in accordance with 1.2.1 of MIL-STD-883, "Provisions for the use of MIL-STD-883 in conjunction with compliant non-JAN devices" and as specified herein.

3.2 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-M-38510 and herein.

3.2.1 Terminal connections. The terminal connections shall be as specified on figure 1.

3.2.2 Truth table. The truth table shall be as specified on figure 2.

3.2.3 Logic diagram. The logic diagram shall be as specified on figure 3.

3.2.4 Case outlines. The case outlines shall be in accordance with 1.2.2 herein.

|                                                                                                     |                  |                            |                   |
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| TABLE I. Electrical performance characteristics.                                                    |                 |                                                                                                      |                                                                               |                      |                    |                   |      |
|-----------------------------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------|--------------------|-------------------|------|
| Test                                                                                                | Symbol          | Conditions<br>-55°C < T <sub>C</sub> < +125°C 1/<br>unless otherwise specified                       |                                                                               | Group A<br>subgroups | Limits             |                   | Unit |
|                                                                                                     |                 |                                                                                                      |                                                                               |                      | Min                | Max               |      |
| High level output<br>voltage                                                                        | V <sub>OH</sub> | V <sub>IN</sub> = V <sub>IH</sub> minimum<br>or V <sub>IL</sub> maximum<br> I <sub>O</sub>   ≤ 20 μA | V <sub>CC</sub> = 2.0 V<br>V <sub>CC</sub> = 4.5 V<br>V <sub>CC</sub> = 6.0 V | 1,2,3                | 1.9<br>4.4<br>5.9  |                   | V    |
|                                                                                                     |                 | I <sub>O</sub>   ≤ 6.0 mA                                                                            | V <sub>CC</sub> = 4.5 V                                                       |                      | 3.7                |                   |      |
|                                                                                                     |                 | I <sub>O</sub>   ≤ 7.8 mA                                                                            | V <sub>CC</sub> = 6.0 V                                                       |                      | 5.2                |                   |      |
| Low level output<br>voltage                                                                         | V <sub>OL</sub> | V <sub>IN</sub> = V <sub>IH</sub> minimum<br>or V <sub>IL</sub> maximum<br> I <sub>O</sub>   ≤ 20 μA | V <sub>CC</sub> = 2.0 V<br>V <sub>CC</sub> = 4.5 V<br>V <sub>CC</sub> = 6.0 V | 1,2,3                |                    | 0.1<br>0.1<br>0.1 | V    |
|                                                                                                     |                 | I <sub>O</sub>   ≤ 6.0 mA                                                                            | V <sub>CC</sub> = 4.5 V                                                       |                      |                    | 0.4               |      |
|                                                                                                     |                 | I <sub>O</sub>   ≤ 7.8 mA                                                                            | V <sub>CC</sub> = 6.0 V                                                       |                      |                    | 0.4               |      |
| High level input<br>voltage                                                                         | V <sub>IH</sub> | 2/                                                                                                   | V <sub>CC</sub> = 2.0 V<br>V <sub>CC</sub> = 4.5 V<br>V <sub>CC</sub> = 6.0 V | 1,2,3                | 1.5<br>3.15<br>4.2 |                   | V    |
| Low level input<br>voltage                                                                          | V <sub>IL</sub> | 2/                                                                                                   | V <sub>CC</sub> = 2.0 V<br>V <sub>CC</sub> = 4.5 V<br>V <sub>CC</sub> = 6.0 V | 1,2,3                |                    | 0.3<br>0.9<br>1.2 | V    |
| Input capacitance                                                                                   | C <sub>IN</sub> | V <sub>CC</sub> = GND, T <sub>C</sub> = +25°C<br>See 4.3.1c                                          |                                                                               | 4                    |                    | 10                | pF   |
| I/O capacitance                                                                                     | C <sub>IO</sub> | V <sub>CC</sub> = 6 V, T <sub>C</sub> = +25°C 3/<br>See 4.3.1c                                       |                                                                               | 4                    |                    | 20                | pF   |
| Quiescent current                                                                                   | I <sub>CC</sub> | V <sub>CC</sub> = 6.0 V, V <sub>IN</sub> = V <sub>CC</sub> or GND                                    |                                                                               | 1,2,3                |                    | 160               | μA   |
| Input leakage<br>current                                                                            | I <sub>IN</sub> | V <sub>CC</sub> = 6.0 V, V <sub>IN</sub> = V <sub>CC</sub> or GND                                    |                                                                               | 1,2,3                |                    | ±1                | μA   |
| Three-state output<br>current                                                                       | I <sub>OZ</sub> | V <sub>CC</sub> = 6.0 V, V <sub>O</sub> = V <sub>CC</sub> or GND<br>G = V <sub>IH</sub>              |                                                                               | 1,2,3                |                    | ±10               | μA   |
| Functional tests                                                                                    |                 | See 4.3.1d                                                                                           |                                                                               | 7,8                  |                    |                   |      |
| See footnotes at end of table.                                                                      |                 |                                                                                                      |                                                                               |                      |                    |                   |      |
| <b>STANDARDIZED<br/>MILITARY DRAWING</b><br>DEFENSE ELECTRONICS SUPPLY CENTER<br>DAYTON, OHIO 45444 |                 |                                                                                                      | SIZE<br><b>A</b>                                                              |                      | 5962-87809         |                   |      |
|                                                                                                     |                 |                                                                                                      |                                                                               | REVISION LEVEL<br>A  | SHEET<br>4         |                   |      |

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TABLE 1. Electrical performance characteristics - Continued.

| Test                                                                | Symbol                                 | Conditions<br>-55°C < T <sub>C</sub> < +125°C 1/<br>unless otherwise specified         |                                                                               | Group A<br>subgroups | Limits |                 | Unit |
|---------------------------------------------------------------------|----------------------------------------|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------|--------|-----------------|------|
|                                                                     |                                        |                                                                                        |                                                                               |                      | Min    | Max             |      |
| Propagation delay<br>time, data to<br>output 4/<br><br>See figure 4 | t <sub>pHL</sub> ,<br>t <sub>pLH</sub> | T <sub>C</sub> = +25°C<br>C <sub>L</sub> = 50 pF ±10%                                  | V <sub>CC</sub> = 2.0 V<br>V <sub>CC</sub> = 4.5 V<br>V <sub>CC</sub> = 6.0 V | 9                    |        | 105<br>21<br>18 | ns   |
|                                                                     |                                        | T <sub>C</sub> = -55°C, +125°C<br>C <sub>L</sub> = 50 pF ±10%                          | V <sub>CC</sub> = 2.0 V<br>V <sub>CC</sub> = 4.5 V<br>V <sub>CC</sub> = 6.0 V | 10,11                |        | 160<br>32<br>27 | ns   |
| Output enable time,<br>G to output 4/<br><br>See figure 4           | t <sub>pZH</sub> ,<br>t <sub>pZL</sub> | T <sub>C</sub> = +25°C<br>C <sub>L</sub> = 50 pF ±10%<br>R <sub>L</sub> = 1 kΩ         | V <sub>CC</sub> = 2.0 V<br>V <sub>CC</sub> = 4.5 V<br>V <sub>CC</sub> = 6.0 V | 9                    |        | 230<br>46<br>41 | ns   |
|                                                                     |                                        | T <sub>C</sub> = -55°C, +125°C<br>C <sub>L</sub> = 50 pF ±10%<br>R <sub>L</sub> = 1 kΩ | V <sub>CC</sub> = 2.0 V<br>V <sub>CC</sub> = 4.5 V<br>V <sub>CC</sub> = 6.0 V | 10,11                |        | 340<br>68<br>58 | ns   |
| Output disable<br>time, G to output 4/<br><br>See figure 4          | t <sub>pHZ</sub> ,<br>t <sub>pLZ</sub> | T <sub>C</sub> = +25°C<br>C <sub>L</sub> = 50 pF ±10%<br>R <sub>L</sub> = 1 kΩ         | V <sub>CC</sub> = 2.0 V<br>V <sub>CC</sub> = 4.5 V<br>V <sub>CC</sub> = 6.0 V | 9                    |        | 172<br>43<br>41 | ns   |
|                                                                     |                                        | T <sub>C</sub> = -55°C, +125°C<br>C <sub>L</sub> = 50 pF ±10%<br>R <sub>L</sub> = 1 kΩ | V <sub>CC</sub> = 2.0 V<br>V <sub>CC</sub> = 4.5 V<br>V <sub>CC</sub> = 6.0 V | 10,11                |        | 255<br>56<br>54 | ns   |
| Transition time<br>5/<br><br>See figure 4                           | t <sub>THL</sub> ,<br>t <sub>TLH</sub> | T <sub>C</sub> = +25°C<br>C <sub>L</sub> = 50 pF ±10%                                  | V <sub>CC</sub> = 2.0 V<br>V <sub>CC</sub> = 4.5 V<br>V <sub>CC</sub> = 6.0 V | 9                    |        | 60<br>12<br>10  | ns   |
|                                                                     |                                        | T <sub>C</sub> = -55°C, +125°C<br>C <sub>L</sub> = 50 pF ±10%                          | V <sub>CC</sub> = 2.0 V<br>V <sub>CC</sub> = 4.5 V<br>V <sub>CC</sub> = 6.0 V | 10,11                |        | 90<br>18<br>15  | ns   |

- 1/ For a power supply of 5 V ±10 percent, the worst case output voltages (V<sub>OH</sub> and V<sub>OL</sub>) occur for HC at 4.5 V. Thus, the 4.5 V values should be used when designing with this supply. Worst cases V<sub>IH</sub> and V<sub>IL</sub> occur at V<sub>CC</sub> = 5.5 V and 4.5 V respectively. (The V<sub>IH</sub> value at 5.5 V is 3.85 V.) The worst case leakage current (I<sub>IN</sub>, I<sub>CC</sub>, and I<sub>OZ</sub>) occur for CMOS at the higher voltage, so the 6.0 V values should be used. Power dissipation capacitance (C<sub>PD</sub>), typically 100 pF, determines the no load dynamic power consumption, P<sub>D</sub> = C<sub>PD</sub> V<sub>CC</sub>² f + I<sub>CC</sub> V<sub>CC</sub>, and the no load dynamic current consumption, I<sub>S</sub> = C<sub>PD</sub> V<sub>CC</sub> f + I<sub>CC</sub>.
- 2/ V<sub>IH</sub> and V<sub>IL</sub> tests are not required if applied as forcing functions for V<sub>OH</sub> or V<sub>OL</sub> tests.
- 3/ Set the output enable control pin to V<sub>CC</sub> or GND, as applicable, to disable the outputs of the device.
- 4/ AC testing at V<sub>CC</sub> = 2.0 V and V<sub>CC</sub> = 6.0 V shall be guaranteed, if not tested, to the specified parameters.
- 5/ Transition times (t<sub>TLH</sub>, t<sub>THL</sub>), if not tested, shall be guaranteed to the specified parameters.

|                                                                                                     |                  |                     |            |
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3.3 Electrical performance characteristics. Unless otherwise specified herein, the electrical performance characteristics are as specified in table I and shall apply over the full case operating temperature range.

3.4 Electrical test requirements. The electrical test requirements shall be the subgroups specified in table II. The electrical tests for each subgroup are described in table I.

3.5 Marking. Marking shall be in accordance with MIL-STD-883 (see 3.1 herein). The part shall be marked with the part number listed in 1.2 herein. In addition, the manufacturer's part number may also be marked as listed in MIL-BUL-103 (see 6.6 herein).

3.6 Certificate of compliance. A certificate of compliance shall be required from a manufacturer in order to be listed as an approved source of supply in MIL-BUL-103 (see 6.6 herein). The certificate of compliance submitted to DESC-ECS prior to listing as an approved source of supply shall affirm that the manufacturer's product meets the requirements of MIL-STD-883 (see 3.1 herein) and the requirements herein.

3.7 Certificate of conformance. A certificate of conformance as required in MIL-STD-883 (see 3.1 herein) shall be provided with each lot of microcircuits delivered to this drawing.

3.8 Notification of change. Notification of change to DESC-ECS shall be required in accordance with MIL-STD-883 (see 3.1 herein).

3.9 Verification and review. DESC, DESC's agent, and the acquiring activity retain the option to review the manufacturer's facility and applicable required documentation. Offshore documentation shall be made available onshore at the option of the reviewer.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with section 4 of MIL-M-38510 to the extent specified in MIL-STD-883 (see 3.1 herein).

4.2 Screening. Screening shall be in accordance with method 5004 of MIL-STD-883, and shall be conducted on all devices prior to quality conformance inspection. The following additional criteria shall apply:

a. Burn-in test, method 1015 of MIL-STD-883.

(1) Test condition A, B, C, or D using the circuit submitted with the certificate of compliance (see 3.6 herein).

(2)  $T_A = +125^\circ\text{C}$ , minimum.

b. Interim and final electrical test parameters shall be as specified in table II herein, except interim electrical parameter tests prior to burn-in are optional at the discretion of the manufacturer.

4.3 Quality conformance inspection. Quality conformance inspection shall be in accordance with method 5005 of MIL-STD-883 including groups A, B, C, and D inspections. The following additional criteria shall apply.

|                                                                                                     |                  |                     |            |
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| Device type     | 01               |
|-----------------|------------------|
| Case outlines   | R and 2          |
| Terminal number | Terminal symbol  |
| 1               | DIR              |
| 2               | A1               |
| 3               | A2               |
| 4               | A3               |
| 5               | A4               |
| 6               | A5               |
| 7               | A6               |
| 8               | A7               |
| 9               | A8               |
| 10              | GND              |
| 11              | B8               |
| 12              | B7               |
| 13              | B6               |
| 14              | B5               |
| 15              | B4               |
| 16              | B3               |
| 17              | B2               |
| 18              | B1               |
| 19              | ENABLE $\bar{G}$ |
| 20              | VCC              |

FIGURE 1. Terminal connections.

|                                                                                                     |                  |                     |            |
|-----------------------------------------------------------------------------------------------------|------------------|---------------------|------------|
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| Control inputs   |     | Operation               |
|------------------|-----|-------------------------|
| ENABLE $\bar{G}$ | DIR |                         |
| L                | L   | $\bar{B}$ data to A bus |
| L                | H   | $\bar{A}$ data to B bus |
| H                | X   | Isolation               |

H = High level

L = Low level

X = Irrelevant

FIGURE 2. Truth table.

|                                                                                                     |                  |                     |            |
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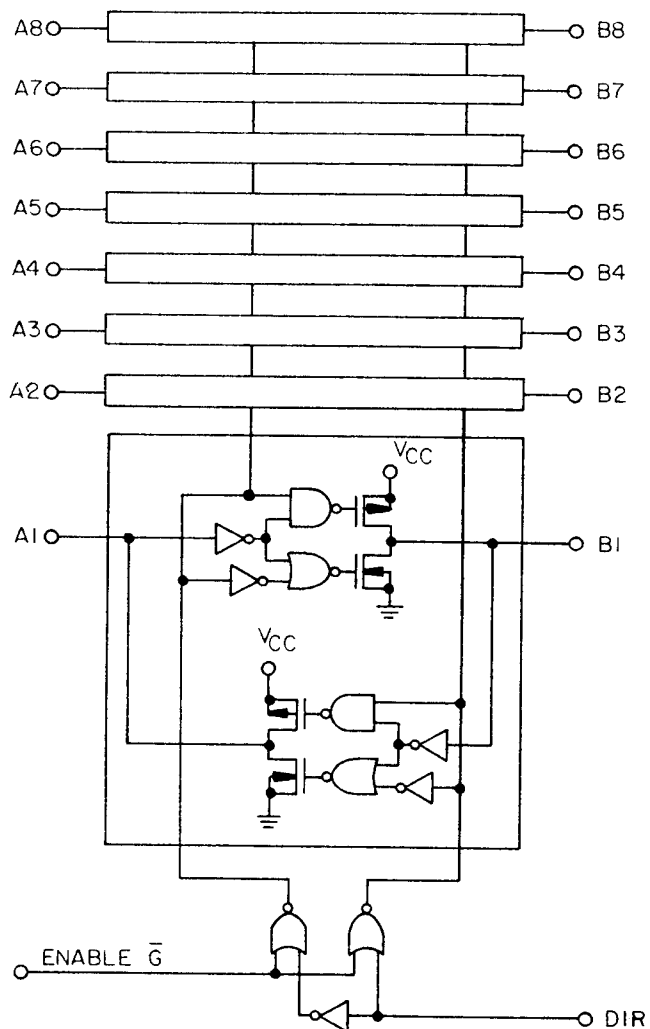


FIGURE 3. Logic diagram.

|                                                                                                     |                         |                       |                   |
|-----------------------------------------------------------------------------------------------------|-------------------------|-----------------------|-------------------|
| <b>STANDARDIZED<br/>MILITARY DRAWING</b><br>DEFENSE ELECTRONICS SUPPLY CENTER<br>DAYTON, OHIO 45444 | <b>SIZE</b><br><b>A</b> |                       | 5962-87809        |
|                                                                                                     |                         | <b>REVISION LEVEL</b> | <b>SHEET</b><br>9 |

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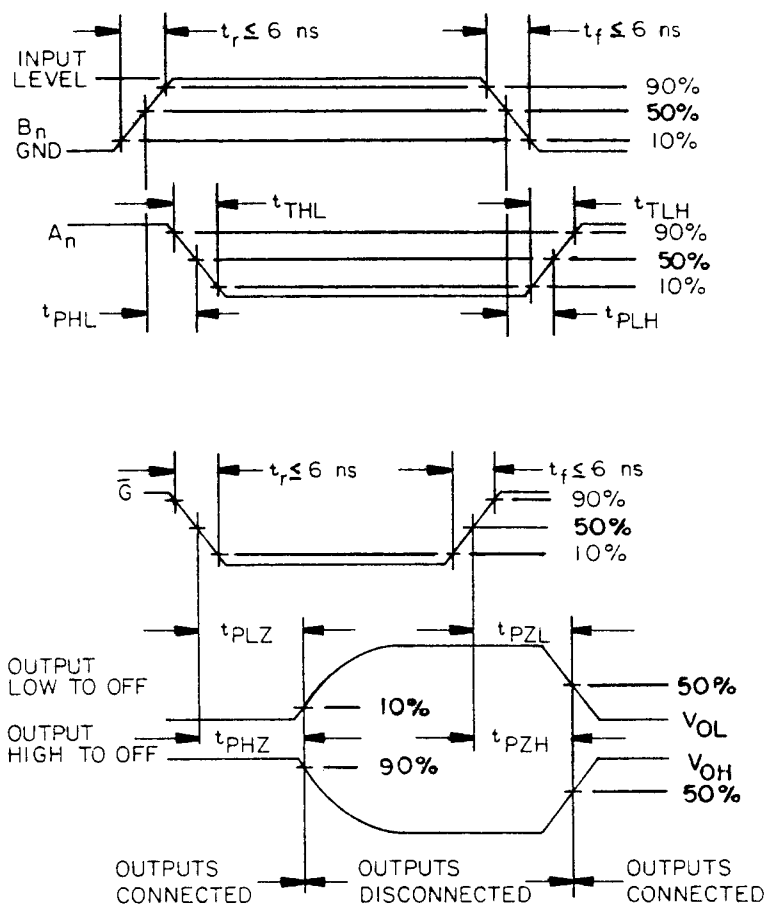
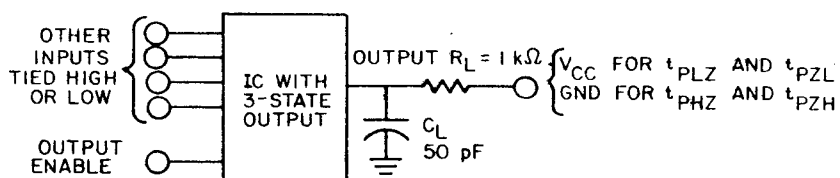


FIGURE 4. Test circuit and switching waveforms.

|                                                                                                     |                         |                            |                    |
|-----------------------------------------------------------------------------------------------------|-------------------------|----------------------------|--------------------|
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TABLE II. Electrical test requirements.

| MIL-STD-883 test requirements                                | Subgroups<br>(per method<br>5005, table I) |
|--------------------------------------------------------------|--------------------------------------------|
| Interim electrical parameters<br>(method 5004)               |                                            |
| Final electrical test parameters<br>(method 5004)            | 1*, 2, 3, 9                                |
| Group A test requirements<br>(method 5005)                   | 1, 2, 3, 4, 7,<br>8, 9, 10, 11             |
| Groups C and D end-point electrical parameters (method 5005) | 1, 2, 3                                    |

\*PDA applies to subgroup 1.

4.3.1 Group A inspection.

- Tests shall be as specified in table II herein.
- Subgroups 5 and 6 in table I, method 5005 of MIL-STD-883 shall be omitted.
- Subgroup 4 ( $C_{IN}$  and  $C_{IO}$  measurements) shall be measured only for the initial test and after process or design changes which may affect capacitance. Capacitance shall be measured between the designated terminal and GND at a frequency of 1 MHz. Test all applicable pins on five devices with zero failures.
- Subgroups 7 and 8 tests shall verify the truth table as specified on figure 2 herein.

4.3.2 Groups C and D inspections.

- End-point electrical parameters shall be as specified in table II herein.
- Steady-state life test conditions, method 1005 of MIL-STD-883:
  - Test condition A, B, C, or D using the circuit submitted with the certificate of compliance (see 3.6 herein).
  - $T_A = +125^\circ\text{C}$ , minimum.
  - Test duration: 1,000 hours, except as permitted by method 1005 of MIL-STD-883.

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-M-38510.

6. NOTES

6.1 Intended use. Microcircuits conforming to this drawing are intended for use when military specifications do not exist and qualified military devices that will perform the required function are not available for OEM application. When a military specification exists and the product covered by this drawing has been qualified for listing on QPL-38510, the device specified herein will be inactivated and will not be used for new design. The QPL-38510 product shall be the preferred item for all applications.

|                                                                                                     |                  |                            |                    |
|-----------------------------------------------------------------------------------------------------|------------------|----------------------------|--------------------|
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6.2 Replaceability. When a QPL source is established, the part numbered device specified in this drawing will be replaced by the microcircuit identified as part number M38510/65506B--.

6.3 Configuration control of SMD's. All proposed changes to existing SMD's will be coordinated with the users of record for the individual documents. This coordination will be accomplished in accordance with MIL-STD-481 using DD Form 1693, Engineering Change Proposal (Short Form).

6.4 Record of users. Military and industrial users shall inform Defense Electronics Supply Center when a system application requires configuration control and the applicable SMD. DESC will maintain a record of users and this list will be used for coordination and distribution of changes to the drawings. Users of drawings covering microelectronics devices (FSC 5962) should contact DESC-ECS, telephone (513) 296-6022.

6.5 Comments. Comments on this drawing should be directed to DESC-ECS, Dayton, Ohio 45444, or telephone (513) 296-5375.

6.6 Approved sources of supply. Approved sources of supply are listed in MIL-BUL-103. Additional sources will be added to MIL-BUL-103 as they become available. The vendors listed in MIL-BUL-103 have agreed to this drawing and a certificate of compliance (see 3.6 herein) has been submitted to and accepted by DESC-ECS. The approved sources of supply listed below are for information purposes only and are current only to the date of the last action of this document.

| Military drawing part number | Vendor CAGE number | Vendor similar part 1/ number | Replacement military specification part number |
|------------------------------|--------------------|-------------------------------|------------------------------------------------|
| 5962-8780901RX               | 01295<br>34371     | SNJ54HC640J<br>CD54HC640FBA   | M38510/65506BRX                                |
| 5962-87809012X               | 01295              | SNJ54HC640FK                  | M38510/65506B2X                                |

1/ Caution. Do not use this number for item acquisition. Items acquired to this number may not satisfy the performance requirements of this drawing.

Vendor CAGE number

Vendor name and address

01295

Texas Instruments, Incorporated  
13500 North Central Expressway  
P.O. Box 655303  
Dallas, TX 75265  
Point of contact: I-20 at FM 1788  
Midland, TX 79711-0448

34371

Harris Semiconductor  
P.O. Box 883  
Melbourne, FL 32901

|                                                                                                     |                  |                     |             |
|-----------------------------------------------------------------------------------------------------|------------------|---------------------|-------------|
| <b>STANDARDIZED<br/>MILITARY DRAWING</b><br>DEFENSE ELECTRONICS SUPPLY CENTER<br>DAYTON, OHIO 45444 | SIZE<br><b>A</b> | 5962-87809          |             |
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