查询"5962-88727012A"供应商

| REVISIONS | | | |
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| LTR | DESCRIPTION | DATE (YR-MO-DA) | APPROVED |
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| REV | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET | | | | | | | | | | | | | | | | | | | | | | | | | |
| REV | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET | | | | | | | | | | | | | | | | | | | | | | | | | |
| REV STATUS OF SHEETS | REV | | | | | | | | | | | | | | | | | | | | | | | | |
| | SHEET | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | | | | | | | | | | | | | | |

PMIC N/A

**STANDARDIZED MILITARY DRAWING**

THIS DRAWING IS AVAILABLE FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE

AMSC N/A

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DRAWING APPROVAL DATE
06 SEPTEMBER 1988

REVISION LEVEL

DEFENSE ELECTRONICS SUPPLY CENTER
DAYTON, OHIO 45444

MICROCIRCUIT, DIGITAL, BIPOLAR, ADVANCED LOW POWER SCHOTTKY, OCTAL BUS TRANSCEIVERS, MONOLITHIC SILICON

| SIZE | CAGE CODE | 5962-88727 |
|---|---|---|
| A | 67268 | |

SHEET 1 OF 9

DESC FORM 193
SEP 87

* U.S. GOVERNMENT PRINTING OFFICE: 1987 — 748-129/60911

5962-E1045

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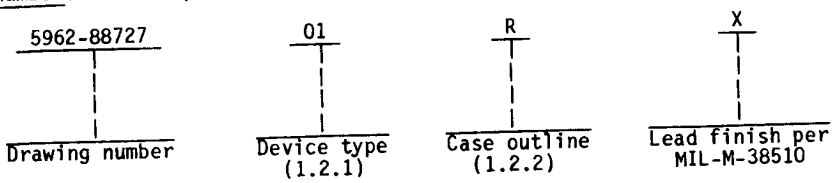
1. SCOPE

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:




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

| Device type | Generic number | Circuit function |
|---|---|---|
| 01 | 54ALS640 | Octal bus transceivers, inverting, with 3-state outputs |

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 |
| S | F-9 (20-lead, .540" x .300" x .100"), flat package |
| 2 | C-2 (20-terminal, .358" x .358" x .100"), square chip carrier package |

1.3 Absolute maximum ratings.

| | |
|---|---|
| Supply voltage range | -0.5 V dc minimum to +7.0 V dc maximum |
| Input voltage range: | |
| All inputs | -1.5 V dc to +7.0 V dc |
| I/O ports | -1.5 V dc to +5.5 V dc |
| Continuous power dissipation ($P_D$) 1/ | +264 mW |
| Storage temperature range | -65°C to +150°C |
| Lead temperature (soldering, 10 seconds) | +300°C |
| Thermal resistance, junction to case ($\theta_{JC}$) | See MIL-M-38510, appendix C |
| Junction temperature ($T_J$) | +175°C |

1.4 Recommended operating conditions.

| | |
|---|---|
| Supply voltage range ($V_{CC}$) | +4.5 V dc minimum to +5.5 V dc maximum |
| Minimum high level input voltage ($V_{IH}$) | 2.0 V dc |
| Maximum low level input voltage ($V_{IL}$) | 0.7 V dc |
| Maximum high level output current ($I_{OH}$) | -12 mA |
| Maximum low level output current ($I_{OL}$) | 12 mA |
| Case operating temperature range ($T_C$) | -55°C to +125°C |

1/ Maximum power dissipation is defined as $V_{CC}$ x $I_{CC}$, and must withstand the added $P_D$ due to output current test; e.g., $I_O$.



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2. APPLICABLE DOCUMENTS

2.1 Government specification and standard. Unless otherwise specified, the following specification and standard, 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.

(Copies of the specification and standard 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 Test circuit and switching waveforms. The test circuit and switching waveforms shall be as specified on figure 3.

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

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

3.4 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 6.4 herein.



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TABLE I. Electrical performance characteristics.

| Test | Symbol | Conditions $-55°C < T_C < +125°C$ unless otherwise specified | | Group A subgroups | Limits Min | Limits Max | Unit |
|---|---|---|---|---|---|---|---|
| High level output voltage | $V_{OH}$ | $V_{CC}$ = 4.5 V, $V_{IH}$ = 2.0 V, $V_{IL}$ = 0.7 V | $I_{OH}$ = -0.4 mA | 1,2,3 | 2.5 | | V |
| | | | $I_{OH}$ = -3.0 mA | | 2.4 | | |
| | | | $I_{OH}$ = -12 mA | | 2.0 | | |
| Low level output voltage | $V_{OL}$ | $V_{CC}$ = 4.5 V, $V_{IH}$ = 2.0 V, $V_{IL}$ = 0.7 V | $I_{OL}$ = 12 mA | 1,2,3 | | 0.4 | V |
| Input clamp voltage | $V_{IC}$ | $V_{CC}$ = 4.5 V | $I_{IN}$ = -18 mA | 1,2,3 | | -1.5 | V |
| High level input current | $I_{IH1}$ | $V_{CC}$ = 5.5 V, $V_{IN}$ = 2.7 V | Control inputs | 1,2,3 | | 20 | µA |
| | | | A or B ports 1/ | | | 20 | |
| | $I_{IH2}$ | $V_{CC}$ = 5.5 V | A or B ports, $V_{IN}$ = 5.5 V | 1,2,3 | | 0.1 | mA |
| | | | Control inputs, $V_{IN}$ = 7.0 V | | | 0.1 | |
| Low level input current | $I_{IL}$ | $V_{CC}$ = 5.5 V, $V_{IN}$ = 0.4 V | Control inputs | 1,2,3 | | -0.1 | mA |
| | | | A or B ports 1/ | | | -0.1 | |
| Output current | $I_O$ | $V_{CC}$ = 5.5 V | $V_{OUT}$ = 2.25 V 2/ | 1,2,3 | -30 | -112 | mA |
| Supply current | $I_{CC}$ | $V_{CC}$ = 5.5 V | Outputs high | 1,2,3 | | 35 | mA |
| | | | Outputs low | | | 45 | |
| | | | Outputs disabled | | | 48 | |
| Functional tests | | See paragraph 4.3.1c | | 7,8 | | | |
| Propagation delay time, A or B to B or A | $t_{PLH}$ | $V_{CC}$ = 4.5 V to 5.5 V, $C_L$ = 50 pF, $R_1$ = 500Ω, $R_2$ = 500Ω, See figure 3 | | 9,10,11 | 2 | 18 | ns |
| | $t_{PHL}$ | | | | 2 | 15 | |

See footnotes at end of table.



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TABLF I. Electrical performance characterisics - Continued.

| Test | Symbol | Conditions $-55°C \le T_C \le +125°C$ unless otherwise specified | Group A subgroups | Limits | | Unit |
|---|---|---|---|---|---|---|
| | | | | Min | Max | |
| Output enable time, $\overline{G}$ to A or B | $t_{PZH}$ | $V_{CC}$ = 4.5 V to 5.5 V<br>$C_L$ = 50 pF<br>$R_1$ = 500Ω<br>$R_2$ = 500Ω<br>See figure 3 | 9,10,11 | 5 | 29 | ns |
| | $t_{PZL}$ | | | 8 | 27 | |
| Output disable time, $\overline{G}$ to A or B | $t_{PHZ}$ | | 9,10,11 | 2 | 12 | ns |
| | $t_{PLZ}$ | | | 3 | 20 | |

1/ For I/O ports, the parameters $I_{IH}$ and $I_{IL}$ include the off state output current.

2/ The output conditions have been chosen to produce a current that closely approximates one-half of the true short circuit output current, $I_{OS}$. Not more than one output shall be tested at one time and the duration of the short circuit condition shall not exceed 1 second.

3.5 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 6.4. The certificate of compliance submitted to DESC-ECS prior to listing as an approved source of supply shall state that the manufacturer's product meets the requirements of MIL-STD-883 (see 3.1 herein) and the requirements herein.

3.6 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.

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

3.8 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 or D using the circuit submitted with the certificate of compliance (see 3.5 herein).

(2) $T_A$ = +125°C, minimum.



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| Case outlines | R, S | 2 |
|---|---|---|
| Terminal number | Terminal connections | |
| 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 | $\overline{G}$ | |
| 20 | $V_{CC}$ | |

Figure 1. Terminal connections.

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

H = High voltage level
L = Low voltage level
X = Irrelevant

Figure 2. Truth table.



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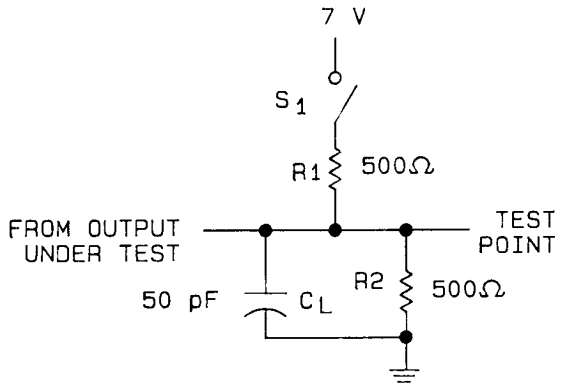
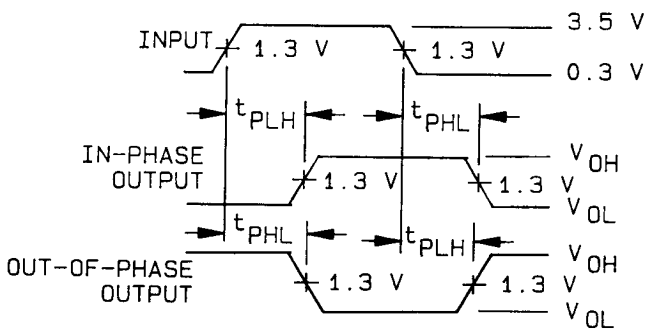
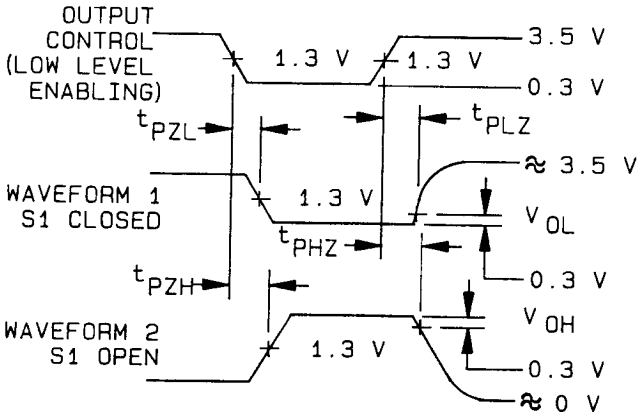



LOAD CIRCUIT FOR
THREE-STATE OUTPUTS




VOLTAGE WAVEFORMS
PROPAGATION DELAY TIMES




VOLTAGE WAVEFORMS
ENABLE AND DISABLE TIMES, THREE-STATE OUTPUTS

NOTES:
1. $C_L$ includes probe and jig capacitance.
2. All input pulses have the following characteristics: PRR ≤ 10 MHz, duty cycle = 50 percent, $t_r = t_f$ = 3.0 ns ±1.0 ns.
3. When measuring propagation delay items, switch S1 is open.
4. Waveform 1 is for an output with internal conditions such that the output is low except when disabled by the output control.
5. Waveform 2 is for an output with internal conditions such that the output is high except when disabled by the output control.
6. The outputs are measured one at a time with one input transition per measurement.

FIGURE 3. Test circuit and switching waveforms.



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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.

4.3.1 Group A inspection.

a. Tests shall be as specified in table II herein.

b. Subgroups 4, 5, and 6 in table I, method 5005 of MIL-STD-883 shall be omitted.

c. Subgroups 7 and 8 shall be sufficient to verify the truth table as specified on figure 2.

4.3.2 Groups C and D inspections.

a. End-point electrical parameters shall be as specified in table II herein.

b. Steady-state life test conditions, method 1005 of MIL-STD-883.

(1) Test condition A or D using the circuit submitted with the certificate of compliance (see 3.5 herein).

(2) $T_A$ = +125°C, minimum.

(3) Test duration: 1,000 hours, except as permitted by method 1005 of MIL-STD-883.

TABLE II. Electrical test requirements.

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

*PDA applies to subgroup 1.



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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.

6.2 Replaceability. Replaceability is determined as follows:

a. Microcircuits covered by this drawing will replace the same generic device covered by a contractor-prepared specification or drawing.

b. When a QPL source is established, the part numbered device specified in this drawing will be replaced by the microcircuit identified as part number M38510/38501B--.

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

6.4 Approved source of supply. An approved source of supply is listed herein. Additional sources will be added as they become available. The vendor listed herein has agreed to this drawing and a certificate of compliance (see 3.5 herein) has been submitted to DESC-ECS.

| Military drawing part number | Vendor CAGE number | Vendor similar part number 1/ | Replacement military specification part number |
|---|---|---|---|
| 5962-8872701RX | 01295 | SNJ54ALS640AJ | M38510/38501BRX |
| 5962-8872701SX | 01295 | SNJ54ALS640AW | M38510/38501BSX |
| 5962-88727012X | 01295 | SNJ54ALS640AFK | M38510/38501B2X |

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

01295

Vendor name and address

Texas Instruments, Incorporated
P.O. Box 6448
Midland, TX 79711



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