查询"5962-8689001CX"供应商

REVISIONS			
LTR	DESCRIPTION	DATE (YR-MO-DA)	APPROVED
A	Add case outlines D and 2 to device type 01. Add vendor CAGE 18324 to case outlines C, D, and 2. Editorial changes throughout. Change to current CAGE code. Change to table I, V_{OH}, V_{OL}, V_H, V_{T+}, and V_{T-}.	88 NOV 22	M.A. Frye
B	Delete vendor CAGE 18324. Change vendor CAGE 18714 to 34371. Inactivate case outlines D and 2 for new design. Editorial changes throughout.	90 OCT 11	M.A. Frye

CURRENT CAGE CODE 67268

REV																									
SHEET																									
REV																									
SHEET																									
REV STATUS OF SHEETS	REV	B	B	B	B	B	B	B	B	B															
	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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CHECKED BY: Ray Monnin

APPROVED BY: M.A. Frye

DRAWING APPROVAL DATE: 6 FEBUARY 1987

REVISION LEVEL: B

DEFENSE ELECTRONICS SUPPLY CENTER
DAYTON, OHIO 45444

MICROCIRCUIT, DIGITAL, HIGH SPEED CMOS, HEX SCHMITT TRIGGER TTL-COMPATIBLE INPUTS, MONOLITHIC SILICON

SIZE	CAGE CODE	
A	14933	5962-86890

SHEET 1

DESC FORM 193-1
SEP 87

* U.S. GOVERNMENT PRINTING OFFICE: 1987 — 748-129/60912

5962-E1757

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 or Identifying Number (PIN). The complete PIN shall be as shown in the following example:

5962-86890	01	C	X
Drawing number	Device type (1.2.1)	Case outline (1.2.2)	Lead finish per MIL-M-38510

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

Device type	Generic number	Circuit function
01	54HCT14	Hex inverting Schmitt trigger with TTL-compatible inputs

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

Outline letter	Case outline
C	D-1 (14-lead, .785" x .310" x .200"), dual-in-line package
D	F-2 (14-lead, .390" x .260" x .085"), flat package
2	C-2 (20-terminal, .358" x .358" x .100"), square chip carrier package

1.3 Absolute maximum ratings. 1/

Supply voltage range	-0.5 V dc 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	±20 mA
DC output current (per pin)	±25 mA
DC V_{CC} or GND current (per pin)	±50 mA
Storage temperature range	-65°C to +150°C
Maximum power dissipation (P_D)	500 mW 2/
Lead temperature (soldering, 10 seconds)	+260°C
Thermal resistance, junction-to-case (θ_{JC}):	See MIL-M-38510, appendix C
Junction temperature (T_J)	+175°C

1.4 Recommended operating conditions.

Supply voltage range	+4.5 V dc minimum to +5.5 V dc maximum
Input voltage range (V_{IN})	0.0 V dc to V_{CC}
Output voltage range (V_{OUT})	0.0 V dc to V_{CC}
Case operating temperature range (T_C)	-55°C to +125°C
Input rise or fall time:	
V_{CC} = 4.5 V	0 to 500 ns

1/ Unless otherwise specified all voltages are referenced to ground.
2/ For T_A = +100°C to +125°C, derate linearly at 12 mW/°C.

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 Case outline(s). The case outline(s) shall be in accordance with 1.2.2 herein.

3.2.2 Terminal connections and logic diagram. The terminal connections and logic diagram shall be as specified on figure 1.

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

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 PIN listed in 1.2 herein. In addition, the manufacturer's PIN may also be marked as listed in MIL-BUL-103 (see 6.6 herein).

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions 1/ $-55°C < T_C < +125°C$ unless otherwise specified		Group A subgroups	Limits		Unit
					Min	Max	
High level output voltage	V_{OH}	V_{CC} = 4.5 V $V_{IN} = V_{T+}$ or V_{T-}	$\|I_O\|$ = 20 µA	1,2,3	4.4		V
			$\|I_O\|$ = 4.0 mA		3.7		
Low level output voltage	V_{OL}	V_{CC} = 4.5 V $V_{IN} = V_{T+}$ or V_{T-}	$\|I_O\|$ = 20 µA			0.1	
			$\|I_O\|$ = 4.0 mA			0.4	
Hysteresis voltage 2/	V_H	V_{CC} = 4.5 V			0.4	1.4	
Positive-going threshold voltage 2/	V_{T+}				1.20	1.9	
Negative-going threshold voltage 2/	V_{T-}				0.5	1.2	
Input capacitance	C_{IN}	V_{CC} = GND T_C = +25°C See 4.3.1c		4		10	pF
Quiescent current	I_{CC}	V_{CC} = 5.5 V $V_{IN} = V_{CC}$ or GND		1,2,3		40	µA
Additional quiescent current 3/	ΔI_{CC}	I_O = 0, V_{IN} = 2.4 V, any one input; $V_{IN} = V_{CC}$ or GND, all other inputs				3	mA
Input leakage current	I_{IN}	V_{CC} = 5.5 V $V_{IN} = V_{CC}$ or GND				±1	µA
Functional test		See 4.3.1d		7,8			

See footnotes at end of table.

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions 1/ $-55°C \le T_C \le +125°C$ unless otherwise specified		Group A subgroups	Limits		Unit
					Min	Max	
Propagation delay time	t_{PHL} t_{PLH}	T_C = +25°C, C_L = 50 pF See figure 3	V_{CC} = 4.5 V	9		38	ns
		T_C = -55°C, +125°C C_L = 50 pF See figure 3		10,11		57	
Transition time 4/	t_{THL} t_{TLH}	T_C = +25°C, C_L = 50 pF See figure 3		9		15	
		T_C = -55°C, +125°C C_L = 50 pF See figure 3		10,11		22	

1/ For a power supply of 5 V ±10 percent the worst case output voltages (V_{OH} and V_{OL}) occur for HCT at 4.5 V. Thus the 4.5 V values should be used when designing with this supply. Worst case V_{IH} and V_{IL} occur at V_{CC} = 5.5 V and 4.5 V respectively.

2/ V_T+, V_T-, and V_H tests are not required if applied as forcing functions for V_{OH} or V_{OL} tests

3/ Guaranteed, if not tested, to the specified limits.

4/ Transition time (t_{TLH}, t_{THL}), if not tested, shall be guaranteed to the specified limits.

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).

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Device type	01	
Case outlines	E, F	2
Terminal number	Terminal	symbol
1	1A	NC
2	1Y	1A
3	2A	1Y
4	2Y	2A
5	3A	NC
6	3Y	2Y
7	GND	NC
8	4Y	3A
9	4A	3Y
10	5Y	GND
11	5A	NC
12	6Y	4Y
13	6A	4A
14	V_{CC}	5Y
15	---	NC
16	---	5A
17	---	NC
18	---	6Y
19	---	6A
20	---	V_{CC}

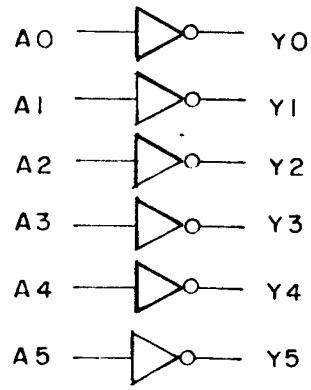

FIGURE 1. Terminal connections and logic diagram.

Truth table each gate	
Input	Output
A	Y
L	H
H	L

Positive logic Y = $\overline{A}$

FIGURE 2. Truth table.

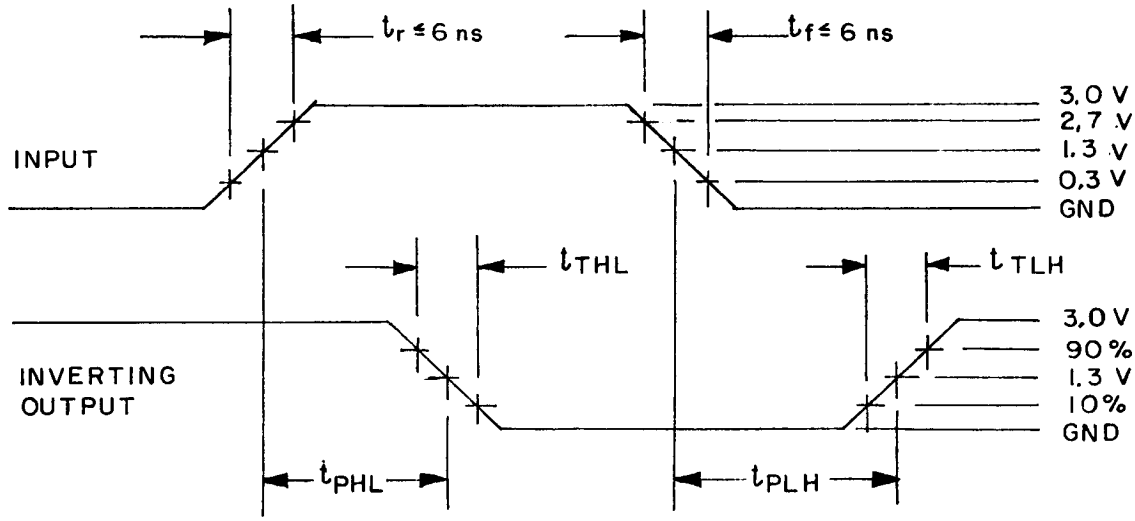

FIGURE 3. Switching waveforms.

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°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.

4.3.1 Group A inspection.

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

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

c. Subgroup 4 (C_{IN} measurement) 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 5 devices with no failures.

d. Subgroup 7 and 8 tests shall include verification of the truth table.

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

(2) T_A = +125°C, minimum.

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

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TABLE II. Electrical test requirements.

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

* PDA applies to subgroup 1.

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

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. The 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. 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.

STANDARDIZED MILITARY DRAWING SOURCE APPROVAL BULLETIN

DATE: 11 OCT 1990

Approved sources of supply for SMD 5962-86890 are listed below for immediate acquisition only and shall be added to MIL-BUL-103 during the next revision. MIL-BUL-103 will be revised to include the addition or deletion of sources. The vendors listed below have agreed to this drawing and a certificate of compliance has been submitted to and accepted by DESC-ECS. This bulletin is superseded by the next dated revision of MIL-BUL-103.

Military drawing PIN	Vendor CAGE number	Vendor part PIN 1/	Replacement military specification PIN
5962-8689001CX	34371	CD54HCT14F/3A	M38510/65752BCX
5962-8689001DX	2/	54HCT14/BDA	M38510/65752BDX
5962-86890012X	2/	54HCT14/B2A	M38510/65752B2X

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

2/ Inactivate for new design, not available from an approved source of supply.

Vendor CAGE number	Vendor name and address
34371	Harris Semiconductor P.O. Box 883 Melbourne, FL 32901