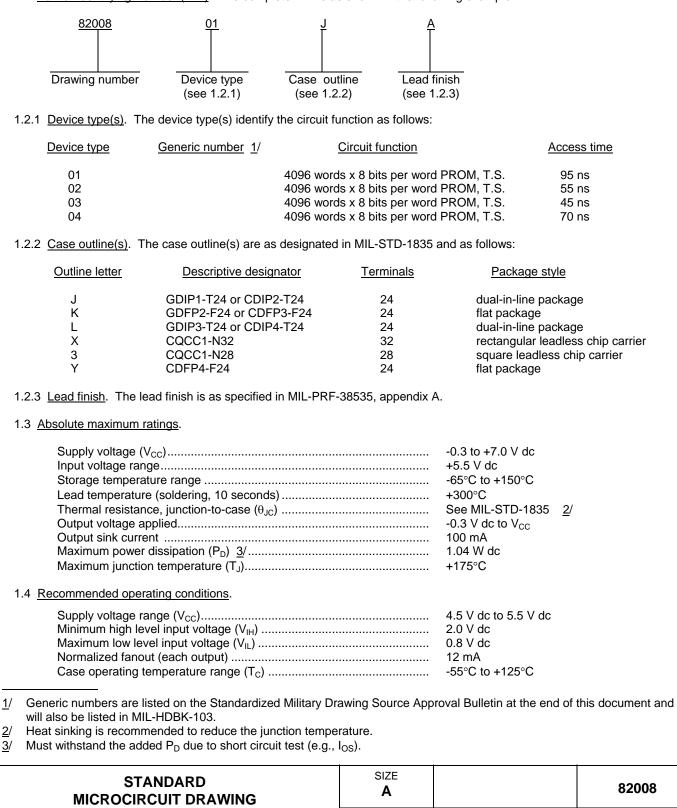
						R	EVISI	ONS										
LTR			Γ	DESCR	RIPTIO	N					DA	TE (YI	R-MO-	DA)		APPR	OVED)
F	Change 18324 to device o	s to table o device design for e 5, and	or similar pa e I paramete types 03 an r device 04 f programmin	rs t _{EA} a d 04 as for ven	and C _C s a sou dor CA	_{DUT} . Adurce of AGE 0	dd ven [:] suppl 7933.	idor C/ y. Ado Remo	AGE d new oved ta		91-10-30				M. A. Frye			
G	Change	s in acco	ordance with	NOR :	5962-F	R010-9	93				93-02-12				M. A. Frye			
Н	Change	s in acco	ordance with	NOR	5962-F	R205-9	93				93-0	8-10			M. A	. Frye	1	
J												Raymond Monnin						
К	Boilerplate update, part of 5 year review. ksr 05-00											6-30			Ray	mond	Monni	n
L	Boilerplate update, part of 5 year review. ksr										10-1	1-10			Cha	rles F.	Saffle	1
CURRENT THE ORIGINA REV SHEET REV SHEET REV STATUS OF SHEETS	AL FIRST			AWIN	G HAS	S BEE	N REF	PLACE	D L 5	L 6	L 7	L 8	L 9	L 10	L 11	L 12	L 13	
PMIC N/A			PREPARE	DBY		I	I		L		I				L	I		
PREPARED BY Darrell Hill STANDARD MICROCIRCUIT DRAWING						DLA LAND AND MARITIME COLUMBUS, OHIO 43218-3990 http://www.dscc.dla.mil												
THIS DRAWING IS AVAILABLE APPROVED BY FOR USE BY ALL N. A. Hauck DEPARTMENTS DEPARTMENT OF DEFENSE DEPARTMENT OF DEFENSE DRAWING APPROVAL DATE 82-09-01 82-09-01							MICROCIRCUIT, MEMORY, DIGITAL, SCHOTTKY BIPOLAR 32K PROGRAMMABLE READ ONLY MEMORY (PROM), MONOLITHIC SILICON											
AM	SC N/A		REVISION					-	ZE		GE CC				074		,	
				I	L				4 		493	3			02	800		
								SHEET 1 OF 13										

1.	SCOPE
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1.1 <u>Scope</u>. This drawing describes device requirements for MIL-STD-883 compliant, non-JAN class level B microcircuits in accordance with MIL-PRF-38535, appendix A.

1.2 <u>Part or Identifying Number (PIN)</u>. The complete PIN is as shown in the following example:



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2. APPLICABLE DOCUMENTS

2.1 <u>Government specification, standards, and handbooks</u>. The following specification, standards, and handbooks form a part of this drawing to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATION

MIL-PRF-38535 - Integrated Circuits, Manufacturing, General Specification for.

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-883	-	Test Method Standard Microcircuits.	

MIL-STD-1835 - Interface Standard Electronic Component Case Outlines.

DEPARTMENT OF DEFENSE HANDBOOKS

MIL-HDBK-103 - List of Standard Microcircuit Drawings.

MIL-HDBK-780 - Standard Microcircuit Drawings.

(Copies of these documents are available online at https://assist.daps.dla.mil/quicksearch/ or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2 <u>Order of precedence</u>. In the event of a conflict between the text of this drawing and the references cited herein, the text of this drawing takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 <u>Item requirements</u>. The individual item requirements shall be in accordance with MIL-PRF-38535, appendix A for non-JAN class level B devices and as specified herein. Product built to this drawing that is produced by a Qualified Manufacturer Listing (QML) certified and qualified manufacturer or a manufacturer who has been granted transitional certification to MIL-PRF-38535 may be processed as QML product in accordance with the manufacturers approved program plan and qualifying activity approval in accordance with MIL-PRF-38535. This QML flow as documented in the Quality Management (QM) plan may make modifications to the requirements herein. These modifications shall not affect form, fit, or function of the device. These modifications shall not affect the PIN as described herein. A "Q" or "QML" certification mark in accordance with MIL-PRF-38535 is required to identify when the QML flow option is used.

3.2 <u>Design, construction, and physical dimensions</u>. The design, construction, and physical dimensions shall be as specified in MIL-PRF-38535, appendix A and herein.

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

3.2.2 <u>Terminal connections</u>. The terminal connections shall be as specified on figure 1.

3.2.3 <u>Truth table(s)</u>. The truth table(s) shall be as specified on figure 2.

3.2.3.1 <u>Unprogrammed devices</u>. The truth table for unprogrammed devices for contracts involving no altered item drawing shall be as specified on figure 2. When required in groups A or C (see 4.3), the devices shall be programmed by the manufacturer prior to test in a checkerboard pattern (a minimum of 50 percent of the total number of bits programmed).

3.2.3.2 Programmed devices. The requirements for supplying programmed devices are not part of this drawing.

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Test	Symbol	Conditions	Device	Group A	Lin	nits	Unit
		$\begin{array}{l} -55^\circ C \leq T_C \leq +125^\circ C \\ V_{CC} = 4.5 \ V \ to \ 5.5 \ V \\ unless \ otherwise \ specified \end{array}$	type	subgroups	Min	Max	
High level output voltage	V _{OH}	V_{CC} = minimum, I _{OH} = -1.6 mA	All	1, 2, 3	2.4		V
Low level output voltage	V _{OL}	V _{CC} = minimum, I _{OL} = 16mA	All	1, 2, 3		0.5	V
Input clamp voltage	V _{IC}	I _{IN} = -18 mA	All	1, 2, 3		-1.5	V
High impedance	I _{OHZ}	$V_{CC} = V_{CC}$ maximum	01	1, 2, 3		100	μΑ
(Off-state) output high current		$V_0 = 2.4 V$	02,03,04			40	
High impedance	I _{OLZ}	$V_{CC} = V_{CC}$ maximum	01	1, 2, 3		-100	μΑ
(Off-state) output low current		$V_0 = 0.4 V$	02,03,04			-40	
High level input current	I _{IH}	$V_{IH} = V_{CC}$ maximum	All	1, 2, 3		40	μA
Low level input current	I _{IL}	$V_{IL} = 0.4 V$ $V_{CC} = V_{CC}$ maximum	All	1, 2, 3		-250	μA
Short circuit output current	I _{OS}	V _{OUT} = 0.2 V <u>1</u> /	All	1, 2, 3	-15	-100	mA
Supply current	I _{CC}	$V_{CC} = V_{CC}$ maximum, all inputs grounded	All	1, 2, 3		190	mA
Input capacitance	C _{IN}	$V_{CC} = 5 V, f = 1 MHz,$ $V_{IN} = 2.0 V, see 4.3.1c$	All	4		15	pF
Output capacitance	C _{OUT}	V _{CC} = 5 V, f = 1 MHz,	01, 02, 04	4		20	pF
		$V_{OUT} = 2.0 V$, see 4.3.1c	03			12	
Address access	t _{AA}	V_{CC} = 4.5 V and 5.5 V,	01			95	
time		see figure 4	02			55	ns
			03 04	9, 10, 11		45 70	-
Chip enable access	t _{EA}		01, 04			45	ns
time			02, 03			35	110
Chip disable access time $\frac{2}{3}$	t _{DA}		01			45	ns
			02, 03, 04			35	
$\underline{2}/C_L \ge 5 \text{ pF}.$	-	all be grounded at one time, fo anteed to the limits specified i		of 1 second.			
MICRO			SIZE A			82	2008

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Device Types		All							
Case Outlines	J, K, Y, L	Х	3						
Terminal Number	Terminal Symbol								
$ \begin{array}{c} 1\\ 2\\ 3\\ 4\\ 5\\ 6\\ 7\\ 8\\ 9\\ 10\\ 11\\ 12\\ 13\\ 14\\ 15\\ 16\\ 17\\ 18\\ 19\\ 20\\ 21\\ 22\\ 23\\ 24\\ 25\\ 26\\ 27\\ 28\\ 29\\ 30\\ 31\\ 32\\ \end{array} $	$\begin{array}{c} A_7 \\ A_6 \\ A_5 \\ A_4 \\ A_3 \\ A_2 \\ A_1 \\ A_0 \\ O_1 \\ O_2 \\ O_3 \\ GND \\ O_4 \\ O_5 \\ O_6 \\ O_7 \\ O_8 \\ CE_2 \\ A_{11} \\ \overline{CE}_1 \\ A_{10} \\ A_9 \\ A_8 \\ V_{CC} \\ \cdots \\ $	$\begin{array}{c} NC \\ NC \\ A_7 \\ A_6 \\ A_5 \\ A_4 \\ A_3 \\ A_2 \\ A_1 \\ A_0 \\ NC \\ O_1 \\ O_2 \\ O_3 \\ NC \\ O_2 \\ O_3 \\ NC \\ O_5 \\ O_6 \\ O_7 \\ O_8 \\ NC \\ CE_2 \\ A_{11} \\ \overline{CE}_1 \\ NC \\ A_{10} \\ A_9 \\ A_8 \\ NC \\ V_{CC} \\ \end{array}$	$\begin{array}{c} NC \\ A_7 \\ A_6 \\ A_5 \\ A_4 \\ A_3 \\ A_2 \\ A_1 \\ A_0 \\ C \\ O \\ O$						

FIGURE 1. Terminal connections.

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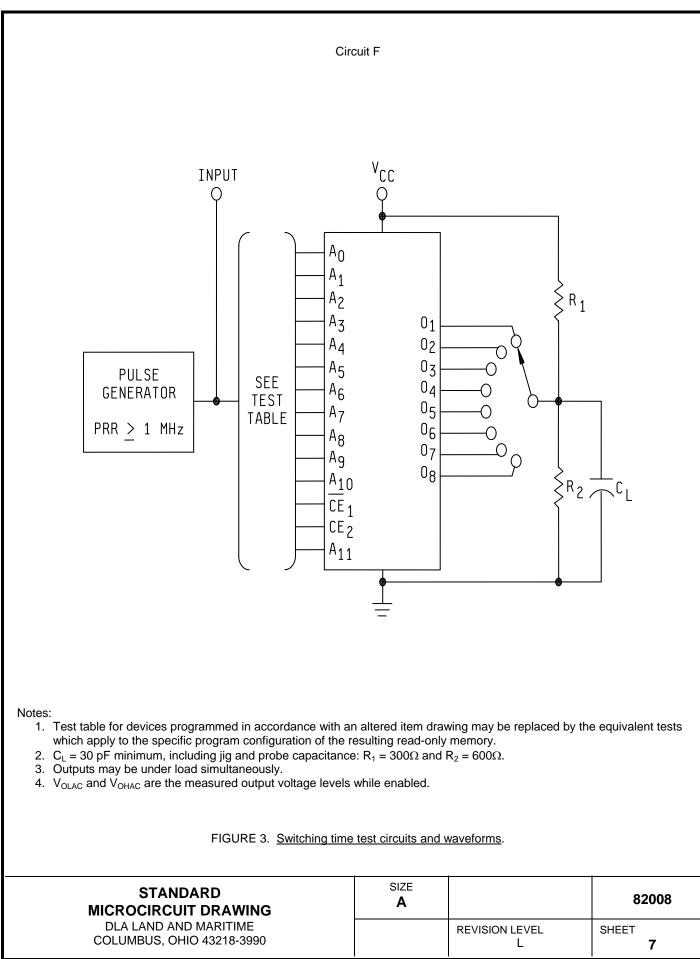
Word			Address								Data											
number																						
	CE 1	CE_2	A ₁₁	A ₁₀	A ₉	A ₈	A ₇	A ₆	A_5	A ₄	A_3	A_2	A ₁	A ₀	O ₈	O ₇	O ₆	O ₅	O ₄	O ₃	O ₂	O ₁
NA	L	н	х	х	х	х	х	х	х	х	х	х	х	х	See note 5							
	н	L	х	х	х	х	х	х	х	х	х	х	х	х	00 00 00 00 00 00 00 00				ос			

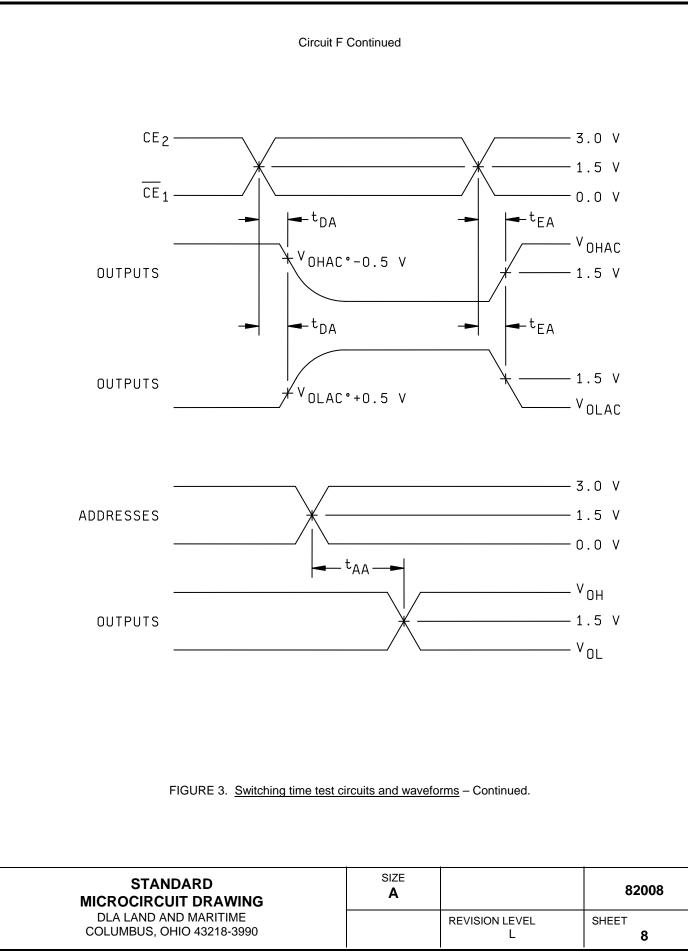
Notes:

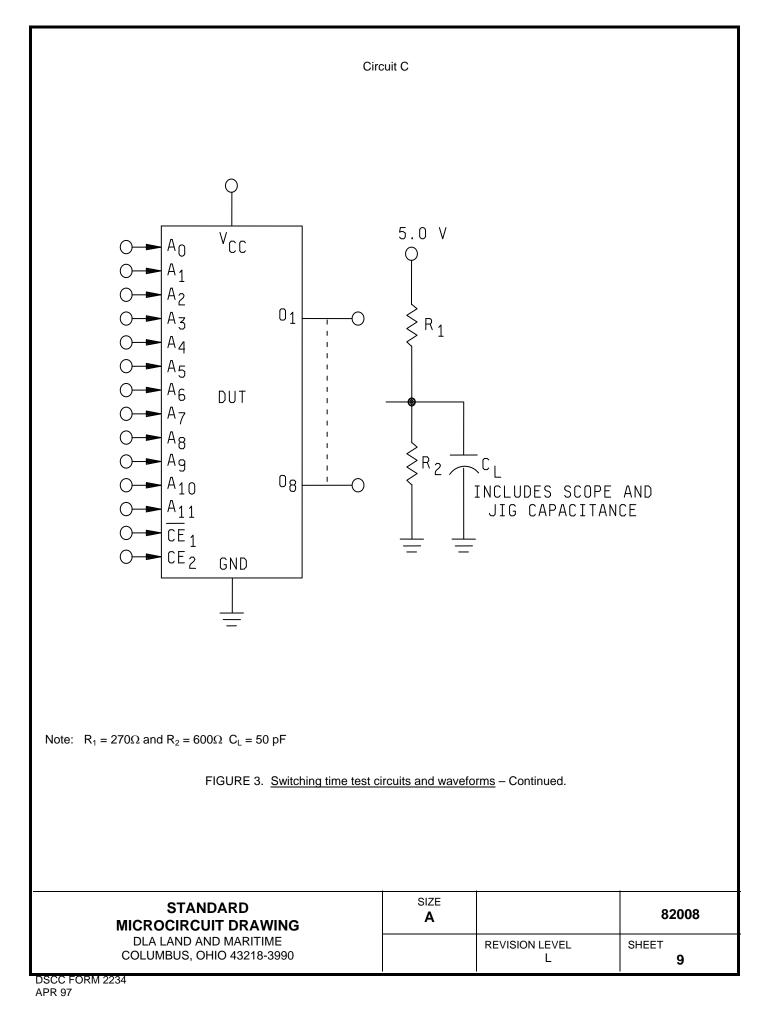
- 1. NA = Not applicable.
- X = Input may be high level, low level, or open circuit.
 OC = Open circuit (high resistance output).
- 4. Program readout can only be accomplished with enable input at low level.
- 5. The outputs for an unprogrammed device shall be high for circuits C and F.

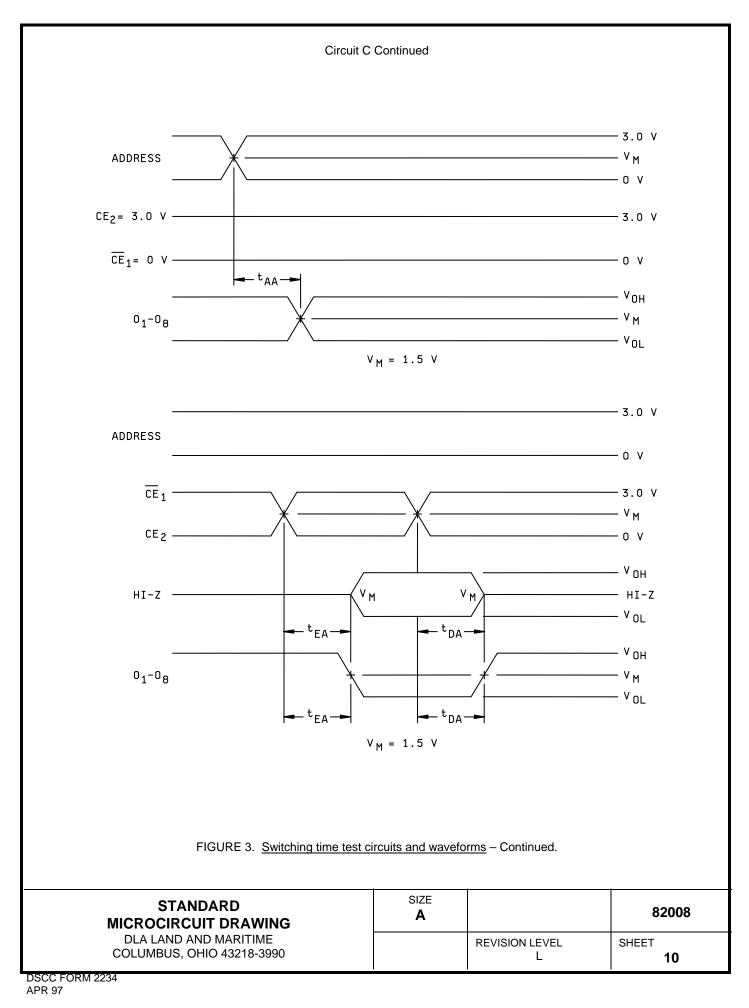
FIGURE 2. Truth table (unprogrammed).

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3.3 <u>Electrical performance characteristics</u>. 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 <u>Electrical test requirements</u>. 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 <u>Marking</u>. Marking shall be in accordance with MIL-PRF-38535, appendix A. The part shall be marked with the PIN listed in 1.2 herein. In addition, the manufacturer's PIN may also be marked.

3.5.1 <u>Certification/compliance mark</u>. A compliance indicator "C" shall be marked on all non-JAN devices built in compliance to MIL-PRF-38535, appendix A. The compliance indicator "C" shall be replaced with a "Q" or "QML" certification mark in accordance with MIL-PRF-38535 to identify when the QML flow option is used.

3.6 <u>Certificate of compliance</u>. A certificate of compliance shall be required from a manufacturer in order to be listed as an approved source of supply in MIL-HDBK-103 (see 6.6 herein). The certificate of compliance submitted to DLA Land and Maritime-VA prior to listing as an approved source of supply shall affirm that the manufacturer's product meets the requirements of MIL-PRF-38535, appendix A and the requirements herein.

3.7 <u>Certificate of conformance</u>. A certificate of conformance as required in MIL-PRF-38535, appendix A shall be provided with each lot of microcircuits delivered to this drawing.

3.8 <u>Notification of change</u>. Notification of change to DLA Land and Maritime-VA shall be required for any change that affects this drawing.

3.9 <u>Verification and review</u>. DLA Land and Maritime, DLA Land and Maritime'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.

3.10. <u>Processing options</u>. Since the device is capable of being programmed by either the manufacturer or the user to result in a wide variety of configurations; two processing options are provided for selection in the contract, using an altered item drawing.

3.10.1 <u>Unprogrammed device delivered to the user</u>. All testing shall be verified through group A testing as defined in 3.2.3.1 and table II. It is recommended that users perform subgroups 7 and 9 after programming to verify the specific program configuration.

3.10.2 <u>Manufacturer-programmed device delivered to the user</u>. All testing requirements and quality assurance provisions herein, including the requirements of the altered item drawing, shall be satisfied by the manufacturer prior to delivery.

4. VERIFICATION

4.1 <u>Sampling and inspection</u>. Sampling and inspection procedures shall be in accordance with MIL-PRF-38535, appendix A.

4.2 <u>Screening</u>. 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, C, D, or E. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to the preparing or acquiring activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in method 1015 of MIL-STD-883.
 - (2) $T_A = +125^{\circ}C$, 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.
- c. All devices processed to an altered item drawing may be programmed either before or after burn-in at the manufacturer's discretion. The required electrical testing shall include, as a minimum, the final electrical tests for programmed devices as specified in table II herein.

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

TABLE II. Electrical test requirements. 1/2/3/

1/ * Indicates PDA applies to subgroups 1 and 7.

 $\frac{2}{2}$ Any or all subgroups may be combined when using high-speed testers.

3/ Subgroups 7 and 8 shall consist of verifying the pattern specified.

4.3 <u>Quality conformance inspection</u>. 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} and C_{OUT} measurements) shall be measured only for the initial test and after process or design changes which may affect input or output capacitance. Sample size is 15 devices with no failures, and all input and output terminals tested.
 - d. Unprogrammed devices shall be tested for programmability and ac performance compliance to the requirements of group A, subgroup 9,10,11. Either of two techniques is acceptable:
 - (1) Testing the entire lot using additional built-in test circuitry which allows the manufacturer to verify programmability and ac performance without programming the user array. If this is done, the resulting test patterns shall be verified on all devices during subgroup 9,10,11 group A testing in accordance with the sampling plan specified in MIL-STD-883, method 5005.
 - (2) If such compliance cannot be tested on an unprogrammed device, a sample shall be selected to satisfy programmability requirements prior to performing subgroup 9,10,11. Twelve devices shall be submitted to programming (see 3.2.2.1). If more than two devices fail to program, the lot shall be rejected. At the manufacturer's option, the sample may be increased to 24 total devices with no more than four total device failures allowable.

Ten devices from the programmability sample shall be submitted to the requirements of group A, subgroup 9,10,11. If more than two total devices fail, the lot shall be rejected. At the manufacturer's option, the sample may be increased to 20 total devices with no more than four total device failures allowable.

e. Subgroups 7 and 8 shall include verification of the truth table.

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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, C, D, or E. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to the preparing or acquiring activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in method 1005 of MIL-STD-883.
 - (2) $T_A = +125^{\circ}C$, minimum.
 - (3) Test duration: 1,000 hours, except as permitted by method 1005 of MIL-STD-883.

4.4 <u>Programming procedures</u>. The programming procedures shall be as specified by the device manufacturer.

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-PRF-38535, appendix A.

6. NOTES

6.1 <u>Intended use</u>. Microcircuits conforming to this drawing are intended for use for Government microcircuit applications (original equipment), design applications, and logistics purposes.

6.2 <u>Replaceability</u>. Microcircuits covered by this drawing will replace the same generic device covered by a contractorprepared specification or drawing.

6.3 <u>Configuration control of SMD's</u>. All proposed changes to existing SMD's will be coordinated with the users of record for the individual documents. This coordination will be accomplished using DD Form 1692, Engineering Change Proposal.

6.4 <u>Record of users</u>. Military and industrial users shall inform DLA Land and Maritime when a system application requires configuration control and the applicable SMD. DLA Land and Maritime 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 DLA Land and Maritime-VA, telephone (614) 692-0544.

6.5 <u>Comments</u>. Comments on this drawing should be directed to DLA Land and Maritime-VA, Columbus, Ohio 43218-3990, or telephone (614) 692-0540.

6.6 <u>Approved sources of supply</u>. Approved sources of supply are listed in MIL-HDBK-103. The vendors listed in MIL-HDBK-103 have agreed to this drawing and a certificate of compliance (see 3.6 herein) has been submitted to and accepted by DLA Land and Maritime-VA.

6.7 <u>Circuit designator</u>. For CAGE code and vendor association, see MIL-HDBK-103. Circuit C is 18324, and circuit F is 07933.

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		REVISION LEVEL L	SHEET 13

STANDARD MICROCIRCUIT DRAWING BULLETIN

DATE: 10-11-10

Approved sources of supply for SMD 82008are listed below for immediate acquisition information only and shall be added to MIL-HDBK-103 and QML-38535 during the next revision. MIL-HDBK-103 and QML-38535 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 DLA Land and Maritime-VA. This information bulletin is superseded by the next dated revision of MIL-HDBK-103 and QML-38535. DLA Land and Maritime maintains an online database of all current sources of supply at http://www.dscc.dla.mil/Programs/Smcr/.

Standard	Vendor	Vendor
microcircuit drawing PIN <u>1</u> / <u>2</u> /	CAGE number	similar PIN 3/
8200801JA	<u>4/</u>	82HS321A/BJA
	<u>4</u> /	53S3281J/883B
	<u>4</u> /	AM27S43/BJA
	<u>4</u> /	R29771DM/883B
	58625	SL82HS321J1
	0C7V7	R29771
8200801KA	<u>4</u> /	82HS321A/BKA
	<u>4</u> /	53S3281W/883B
	<u>4</u> /	AM27S43/BKA
	58625	SL82HS321K1
8200801LA	<u>4</u> /	R29771SM/883B
	0C7V7	R29771
8200801XA	<u>4/</u>	AM27S43/BUA
	0C7V7	R29771
82008013A	<u>4/</u>	82HS321A/B3A
	<u>4</u> /	53S3281L/883B
	<u>4</u> /	AM27S43/B3A
	<u>4</u> /	R29771LM/883B
	58625	SL82HS32131
	0C7V7	R29771
8200802JA	<u>4</u> /	82HS321A/BJA
	<u>4</u> /	53S3281AJ/883B
	<u>4</u> /	AM27S43A/BJA
	<u>4</u> / 58625	82HS321A/BJA SL82HS321J1
8200802KA	<u>4/</u>	82HS321A/BKA 53S3281AW/883B
	<u>4</u> / <u>4</u> /	5353281AW/8836 АМ27S43A/ВКА
	<u>4/</u> 4/	82HS321A/BKA
	<u>-7</u> 58625	SL82HS321K1
8200802XA	<u>4</u> /	AM27S43A/BUA
82008023A	<u>4</u> /	82HS321A/B3A
	<u>4</u> /	53S3281AL/883B
	<u>4</u> /	AM27S43A/B3A
	<u>4</u> /	82HS321A/B3A
	58625	SL82HS32131

See footnotes at end of listing.

Standard microcircuit drawing PIN <u>1/ 2</u> /	Vendor CAGE number	Vendor similar PIN <u>3</u> /
8200803JA	<u>4</u> / <u>4</u> / 58625 <u>4</u> /	82HS321B/BJA 53S3281BJ/883B SL82HS321J1 82HS321A/BJA
8200803KA	<u>4/</u> <u>4/</u> 58625	82HS321B/BKA 53S3281BW/883B 82HS321A/BKA SL82HS321K1
82008033A	<u>4/</u> <u>4</u> / 58625	82HS321B/B3A 53S3281BL/883B SL82HS32131
8200804JA	<u>4</u> / 0C7V7	82HS321C/BJA R29771DM/883B
8200804KA	<u>4</u> / <u>4</u> /	82HS321C/BKA R29771FM/883B
8200804LA	0C7V7	R29771SM/883B
82008043A	0C7V7 <u>4</u> /	R29771LM/883B 82HS321C/B3A

STANDARD MICROCIRCUIT DRAWING BULLETIN - Continued.

<u>1</u>/ Military drawing and DSCC drawing PINs formerly had a programming procedure letter within the military drawing PIN: these parts are interchangeable with parts that are now marked without the programming procedure letter within the military drawing number, i.e. 82008C1JA is interchangeable with 8200801JA.

- 2/ The lead finish shown for each PIN representing a hermetic package is the most readily available from the manufacturer listed for that part. If the desired lead finish is not listed contact the vendor to determine its availability.
- 3/ <u>Caution</u>. Do not use this number for item acquisition. Items acquired to this number may not satisfy the performance requirements of this drawing.
- 4/ Not available from an approved source of supply.

Vendor CAGE	Vendor name	Fusible			
number	and address	link			
58625	Lansdale Semiconductor, Inc. 2412 W. Huntington Drive Tempe, AZ 85282-3132	anti-fuse			
0C7V7	QP Semiconductor 2945 Oakmead Village Court Santa Clara, CA 95051	NiCr or Zapped vertical emitter			
The information contained herein is disseminated for convenience only and the Government assumes no liability whatsoever for any inaccuracies in the information bulletin.					