

INCH-POUND

MIL-M-38510/506A
17 October 2005
SUPERSEDING
MIL-M-38510/506
31 March 1987

MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, BIPOLAR, PROGRAMMABLE LOGIC, MONOLITHIC SILICON

Inactive for new design after 28 July 1995

This specification is approved for use by all Departments
and Agencies of the Department of Defense.

The requirements for acquiring the product herein shall consist of this specification sheet and MIL-PRF 38535

1. SCOPE

1.1 Scope. This specification covers the detail requirements for monolithic silicon, bipolar, programmable logic microcircuits which employ titanium tungsten (Ti-W) as the fusible link or programming element. A choice of case outlines and lead materials and finishes are provided for each type and are reflected in the complete part number. For this product, the requirements of MIL-M-38510 have been superseded by MIL-PRF-38535, (see 6.4).

1.2 Part or Identifying Number (PIN). The PIN is in accordance with MIL-PRF-38535.

1.2.1 Device types. The device types are as follows:

<u>Device type</u>	<u>Circuit</u>
01	16-input 8-output and/or invert gate array.
02	16-input 8-output registered and/or gate array.
03	16-input 6-output registered and/or gate array.
04	16-input 4-output registered and/or gate array.
05	16-input 8-output and/or invert gate array.
06	16-input 8-output registered and/or gate array.
07	16-input 6-output registered and/or gate array.
08	16-input 4-output registered and/or gate array.
09	16-input 8-output and/or invert gate array.
10	16-input 8-output registered and/or gate array.
11	16-input 6-output registered and/or gate array.
12	16-input 4-output registered and/or gate array.

1.2.2 Device class. The device class is the product assurance level as defined in MIL-PRF-38535.

1.2.3 Case outlines. The case outlines are as designated in MIL-STD-1835 and as follows:

<u>Outline letter</u>	<u>Descriptive designator</u>	<u>Terminals</u>	<u>Package style</u>
R	GDIP1-T20 or CDIP2-T20	20	Dual-in-line
2	CQCC1-N20	20	Square chip carrier

Comments, suggestions, or questions on this document should be addressed to: Commander, Defense Supply Center Columbus, ATTN: DSCC-VAS, P. O. Box 3990, Columbus, OH 43218-3990, or emailed to memory@dsc.dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <http://assist.daps.dla.mil>

1.3 Absolute maximum ratings.

Supply voltage range	-0.5 V dc to +10.75 V
Input voltage range	-1.5 V dc to +10.75 V
Storage temperature range	-65° to +150°C
Lead temperature (soldering, 10 seconds)	+260°C
Thermal resistance, junction to case (θ_{JC}): <u>1/</u> <u>2/</u>	See MIL-STD-1835
Output voltage applied	-1.5 V to +10.75 V
Maximum power dissipation (P_D):	
Device types 01, 02, 03, 04	1.1 W
Device types 05, 06, 07, 08	0.6 W
Device types 09, 10, 11, 12	1.2 W
Maximum junction temperature (T_J)	175°C

1.4 Recommended operating conditions.

Supply voltage (V_{CC})	4.5 V minimum to 5.5 V maximum
Minimum high-level input voltage (V_{IH})	2.0 V dc
Maximum low-level input voltage (V_{IL})	0.8 V dc
Case operating temperature range (T_C)	-55 °C to +125 °C

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, or 5 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3, 4, or 5 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications and Standards. The following specifications and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATIONS

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

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-883 - Test Method Standard for Microelectronics.
MIL-STD-1835 - Interface Standard Electronic Component Case Outlines

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

1/ Heat sinking is recommended to reduce the junction temperature.

2/ Must withstand the added P_D due to short circuit test (e.g. I_{OS}).

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein (except for related specification sheets), the text of this specification takes precedence. Nothing in this specification, however supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Qualification. Microcircuits furnished under this specification shall be products that are manufactured by a manufacturer authorized by the qualifying activity for listing on the applicable qualified manufacturers list before contract award (see 4.3 and 6.3).

3.2 Item requirements. The individual item requirements shall be in accordance with MIL-PRF-38535 and as specified herein or as modified in the device manufacturer's Quality Management (QM) plan. The modification in the QM plan shall not affect the form, fit, or function as described herein.

3.3 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-PRF-38535 and herein.

3.3.1 Terminal connections. The terminal connections and logic diagrams shall be as specified on figure 1.

3.3.2 Truth table.

3.3.2.1 Unprogrammed devices. 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, B, or C (see 4.4), the devices shall be programmed by the manufacturer prior to test. A minimum of 50 percent of the total number of fuses shall be programmed or to any altered item drawing pattern which programs at least 25 percent of the total number of fuses.

3.3.2.2 Programmed devices The truth table for programmed devices shall be as specified by the altered item drawing.

3.3.3 Logic diagram. The logic diagram for unprogrammed devices shall be as specified on figure 3.

3.3.5 Case outlines. The case outlines shall be as specified in 1.2.3.

3.4 Lead material and finish. The lead material and finish shall be in accordance with MIL-PRF-38535 (see 6.6).

3.5 Electrical performance characteristics. The electrical performance characteristics are as specified in table I, and apply over the full recommended case temperature range, unless otherwise specified.

3.6 Electrical test requirements. The electrical test requirements shall be as specified in table II and (where applicable), the altered item drawing for the applicable device type and device class. The subgroups of table III which constitute the minimum electrical test requirements for screening, qualification, and quality conformance, by device class, are specified in table II.

3.7 Marking. Marking shall be in accordance with MIL-PRF-38535. For programmed devices, the altered item drawing number shall be added to the marking by the programming activity.

3.8 Processing options. 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.

3.8.1 Unprogrammed device delivered to the user. All testing shall be verified through group A testing as defined in 3.3.2.1, tables II and III. It is recommended that users perform subgroups 7 and 9 after programming to verify the specific program configuration.

3.8.2 Manufacturer-programmed device delivered to the user. 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.

3.9 Microcircuit group assignment. The devices covered by this specification shall be in microcircuit group number 14 (see MIL-PRF-38535.)

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TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions <u>1/</u> -55°C ≤ T _C ≤ +125°C unless otherwise specified		Device Type	Limits		Units
					Min	Max	
Input clamp voltage	V _{IC}	V _{CC} = 4.5 V, I _I = -18 mA		All		-1.5	V
High-level output voltage	V _{OH}	V _{CC} = 4.5 V V _{IL} = 0.0 V V _{IH} = 3.0 V, I _{OH} = -2 mA		All	2.4		V
Low-level output voltage	V _{OL}	V _{CC} = 4.5 V V _{IL} = 0.0 V V _{IH} = 3.0 V, I _{OL} = 12 mA		All		0.5	V
High level input current	I _{IH}	V _{CC} = 5.5 V <u>2/</u> V _I = 2.7 V	Pin 1, 11	All		50	μA
			All others	All		20	μA
Low level input current	I _{IL}	V _{CC} = 5.5 V V _I = 0.4 V <u>2/</u>		All		-.25	mA
Output short circuit current	I _O	V _{CC} = 5.5 V V _O = 2.25 V <u>3/</u>		All	-15	-125	mA
Input current	I _I	V _{CC} = 5.5 V, V _I = 5.5 V	V _{OH} = 1, 11	All		0.2	mA
			All others	All		0.1	mA
Off-state output current	I _{OZL}	V _{CC} = 5.5 V, V _{IL} = 0.0 V V _{IH} = 3.0 V, V _O = 0.4 V <u>2/</u>	Outputs	All		-20	μA
			I/O ports	All		-250	μA
Off-state ouput current	I _{OZH}	V _{CC} = 5.5 V, V _{IL} = 0.0 V V _{IH} = 3.0 V, V _O = 2.7 V	Outputs	All		20	μA
			I/O ports	All		100	μA
Supply current	I _{CC}	V _{CC} = 5.5 V V _I = 0.0 V	Outputs open	01, 02, 03, 04		190	mA
				05, 06, 07, 08		105	
				09, 10, 11, 12		220	
Propagation delay I, I/O, to 0, I/O	t _{PHL}	See figure 4 <u>4/</u>		01, 03, 04		20	ns
				05, 07, 08		30	
				09, 11, 12		15	
Propagation delay I, I/O, to 0, I/O	t _{PLH}			01, 03, 04		20	ns
				05, 07, 08		30	
				09, 11, 12		15	
Enable time I, I/O, to 0, I/O	t _{PZH}			01, 03, 04		20	ns
				05, 07, 08		30	
				09, 11, 12		15	
Enable time I, I/O, to 0, I/O	t _{PZL}			01, 03, 04		20	ns
				05, 07, 08		30	
				09, 11, 12		15	
Disable time I, I/O, to 0, I/O	t _{PHZ}			01, 03, 04		20	ns
				05, 07, 08		30	
				09, 11, 12		15	
Disable time I, I/O, to 0, I/O	t _{PLZ}			01, 03, 04		20	ns
				05, 07, 08		30	
				09, 11, 12		15	
Enable time /OE to Q	t _{PZH}	See figure 4 <u>5/</u>		02, 03, 04		15	ns
				06, 07, 08		25	
				10, 11, 12		12	
Enable time /OE to Q	t _{PZL}			02, 03, 04		15	ns
				06, 07, 08		25	
				10, 11, 12		12	

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions <u>1/</u> -55°C ≤ T _C ≤ +125°C unless otherwise specified	Device Type	Limits		Units
				Min	Max	
Disable time /OE to Q	t _{PHZ}	See figure 4 <u>5/</u>	02, 03, 04		15	ns
			06, 07, 08		25	
			10, 11, 12		12	
Disable time /OE to Q	t _{PLZ}		02, 03, 04		15	
			06, 07, 08		25	
			10, 11, 12		12	
Propagation delay clock to Q	t _{PCH}		02, 03, 04		15	ns
			06, 07, 08		20	
			10, 11, 12		12	
Propagation delay clock to Q	t _{PCL}		02, 03, 04		15	ns
			06, 07, 08		20	
			10, 11, 12		12	
Minimum clock pulse	t _{p(CL)}	02,03, 04	12		ns	
		06, 07, 08	20			
		10, 11, 12	10			
Minimum setup time	t _{SU}	02, 03, 04	20		ns	
		06, 07, 08	25			
		10, 11, 12	15			
Hold time	t _H	All	0		ns	
Maximum clock frequency I, I/O, to 0, I/O	f _{MAX}	02, 03, 04	40		MHz	
		06, 07, 08	25			
		10, 11, 12	50			

1/ Complete terminal conditions shall be specified in table III.

2/ I/O terminal leakage is the worst case I_{IX} or I_{OZH}

3/ The output conditions have been chosen to produce a current that closely approximates one half of the true short-circuit output current, I_O. Only one output tested at a time.

4/ Applies to non-registered output only, with internal output enables.

5/ Applies to registered outputs only, with external output enable (pin 11).

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

MIL-PRF-38535 test requirements	Subgroups (see table III)	
	Class B devices	Class S devices
Interim electrical parameters	1	1
Final electrical test parameters for unprogrammed devices	1*, 2, 3, 7*, 8	1*, 2, 3, 7*, 8
Final electrical test parameters for programmed devices	1*, 2, 3, 7*, 8, 9	1*, 2, 3, 7*, 8, 9, 10, 11
Group A test requirements	1, 2, 3, 7, 8, 9, 10, 11	1, 2, 3, 7, 8, 9, 10, 11
Group B end-point electrical parameters subgroup 5	N/A	1, 2, 3, 7, 8, 9, 10, 11
Group C end-point electrical parameters	1, 2, 3, 7, 8	1, 2, 3, 7, 8, 9, 10, 11
Group D end-point electrical parameters	1, 2, 3, 7, 8	1, 2, 3, 7, 8

1/ (*) indicates PDA applies to subgroups 1 and 7.

2/ Any or all subgroups may be combined when using high-speed testers.

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

4. VERIFICATION

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with MIL-PRF-38535 or as modified in the device manufacturer's Quality Management (QM) plan. The modification in the QM plan shall not effect the form, fit, or function as described herein.

4.2 Screening. Screening shall be in accordance with MIL-PRF-38535 and shall be conducted on all devices prior to qualification and quality conformance inspection. The following additional criteria shall apply:

- a. The burn-in test duration, test condition, and test temperature, or approved alternatives shall be as specified in the device manufacturer's QM plan in accordance with MIL-PRF-38535. The burn-in test circuit shall be maintained under document control by the device manufacturer's Technology Review Board (TRB) in accordance with MIL-PRF-38535 and shall be made available to the acquiring or preparing activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1015 of MIL-STD-883.
- b. Interim and final electrical test parameters shall be as specified in table II, except interim electrical parameters test prior to burn-in is optional at the discretion of the manufacturer.
- c. Additional screening for space level product shall be as specified in MIL-PRF-38535, appendix B.
- d. All devices processed by the manufacturer to an altered item drawing shall be programmed prior to burn-in.

4.3 Qualification inspection. Qualification inspection shall be in accordance with MIL-PRF-38535.

4.4 Technology Conformance inspection (TCI). Technology conformance inspection shall be in accordance with MIL-PRF-38535 and herein for groups A, B, C, and D inspections (see 4.4.1 through 4.4.4).

4.4.1 Group A inspection. Group A inspection shall be in accordance with table III of MIL-PRF-38535 and as follows:

- a. Tests shall be as specified in table II herein.
- b. Subgroups 4, 5, and 6 shall be omitted.
- c. For unprogrammed devices, a sample shall be selected to satisfy programmability requirements prior to performing subgroups 9, 10, and 11. Twelve devices shall be submitted to programming (see 3.3.2.1). If more than two devices fail to program, the lot shall be rejected. At the manufacturers option, the sample may be increased to 24 total devices with no more than four total device failures allowable.
- d. For unprogrammed devices, 10 devices from the programmability sample shall be submitted to the requirements of the specified tests of subgroups 1, 2, and 3 designated for programmed devices only. If any device fails, the lot shall be rejected. At the manufacturer s option, the sample may be increased to 20 total devices with no more than two total device failures allowable.
- e. For unprogrammed devices, 10 devices from the programmability sample shall be submitted to the requirements of group A, subgroups 9, 10, and 11. If more than two total devces fail the lot shall be rejected. At the manufacturers option, the sample may be increased to 20 total devices with no more than four total failures allowable.

4.4.2 Group B inspection. Group B inspection shall be in accordance with table II MIL-PRF-38535.

- a. Electrical parameters shall be as specified in table II herein.

4.4.3 Group C inspection. Group C inspection shall be in accordance with table IV of MIL-PRF-38535 and as follows:

- a. End-point electrical parameters shall be as specified in table II herein.
- b. The steady-state life test duration, test condition, and test temperature, or approved alternatives shall be as specified in the device manufacturer's QM plan in accordance with MIL-PRF-38535. The burn-in test circuit shall be maintained under document control by the device manufacturer's Technology Review Board (TRB) in accordance with MIL-PRF-38535 and shall be made available to the acquiring or preparing activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1005 of MIL-STD-883.
- c. For qualification, at least 50 percent of the sample selected for life testing shall be programmed (see 3.3.2). For quality conformance inspection, the programmability sample (see 4.4.1c) shall be included in the life test.

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Pin number	Device types 01, 05, and 09	Device types 01, 05, and 09
	CASES	
	R	2
1	I	I
2	I	I
3	I	I
4	I	I
5	I	I
6	I	I
7	I	I
8	I	I
9	I	I
10	GND	GND
11	I	I
12	O	O
13	I/O	I/O
14	I/O	I/O
15	I/O	I/O
16	I/O	I/O
17	I/O	I/O
18	I/O	I/O
19	O	O
20	V _{CC}	V _{CC}

FIGURE 2. Terminal connections.

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Pin number	Device types 02, 06, and 10	Device types 02, 06, and 10
	CASES	
	R	2
1	CLK	CLK
2	I	I
3	I	I
4	I	I
5	I	I
6	I	I
7	I	I
8	I	I
9	I	I
10	GND	GND
11	$\overline{\text{OE}}$	$\overline{\text{OE}}$
12	O	O
13	O	O
14	O	O
15	O	O
16	O	O
17	O	O
18	O	O
19	O	O
20	V _{CC}	V _{CC}

FIGURE 2. Terminal connections – Continued.

Pin number	Device types 03, 07, and 11	Device types 03, 07, and 11
	CASES	
	R	2
1	CLK	CLK
2	I	I
3	I	I
4	I	I
5	I	I
6	I	I
7	I	I
8	I	I
9	I	I
10	GND	GND
11	$\overline{\text{OE}}$	$\overline{\text{OE}}$
12	I/O	I/O
13	O	O
14	O	O
15	O	O
16	O	O
17	O	O
18	O	O
19	I/O	I/O
20	V _{CC}	V _{CC}

FIGURE 2. Terminal connections – Continued.

Pin number	Device types 04, 08, and 12	Device types 04, 08, and 12
	CASES	
	R	2
1	CLK	CLK
2	I	I
3	I	I
4	I	I
5	I	I
6	I	I
7	I	I
8	I	I
9	I	I
10	GND	GND
11	$\overline{\text{OE}}$	$\overline{\text{OE}}$
12	I/O	I/O
13	I/O	I/O
14	O	O
15	O	O
16	O	O
17	O	O
18	I/O	I/O
19	I/O	I/O
20	V _{CC}	V _{CC}

FIGURE 2. Terminal connections – Continued.

Device types 01, 05, and 09

Truth table																	
Inputs										Outputs							
I ₉	I ₈	I ₇	I ₆	I ₅	I ₄	I ₃	I ₂	I ₁	I ₀	D ₇	I/D ₆	I/D ₅	I/D ₄	I/D ₃	I/D ₂	I/D ₁	D ₀
X	X	X	X	X	X	X	X	X	X	Z	Z	Z	Z	Z	Z	Z	Z

Device types 02, 06, and 10

Truth table																	
Inputs										Outputs							
OE	I ₇	I ₆	I ₅	I ₄	I ₃	I ₂	I ₁	I ₀	CLK	D ₇	D ₆	D ₅	D ₄	D ₃	D ₂	D ₁	D ₀
H	X	X	X	X	X	X	X	X	CLK	Z	Z	Z	Z	Z	Z	Z	Z
L	X	X	X	X	X	X	X	X	CLK	H	H	H	H	H	H	H	H

Device types 03, 07, and 11

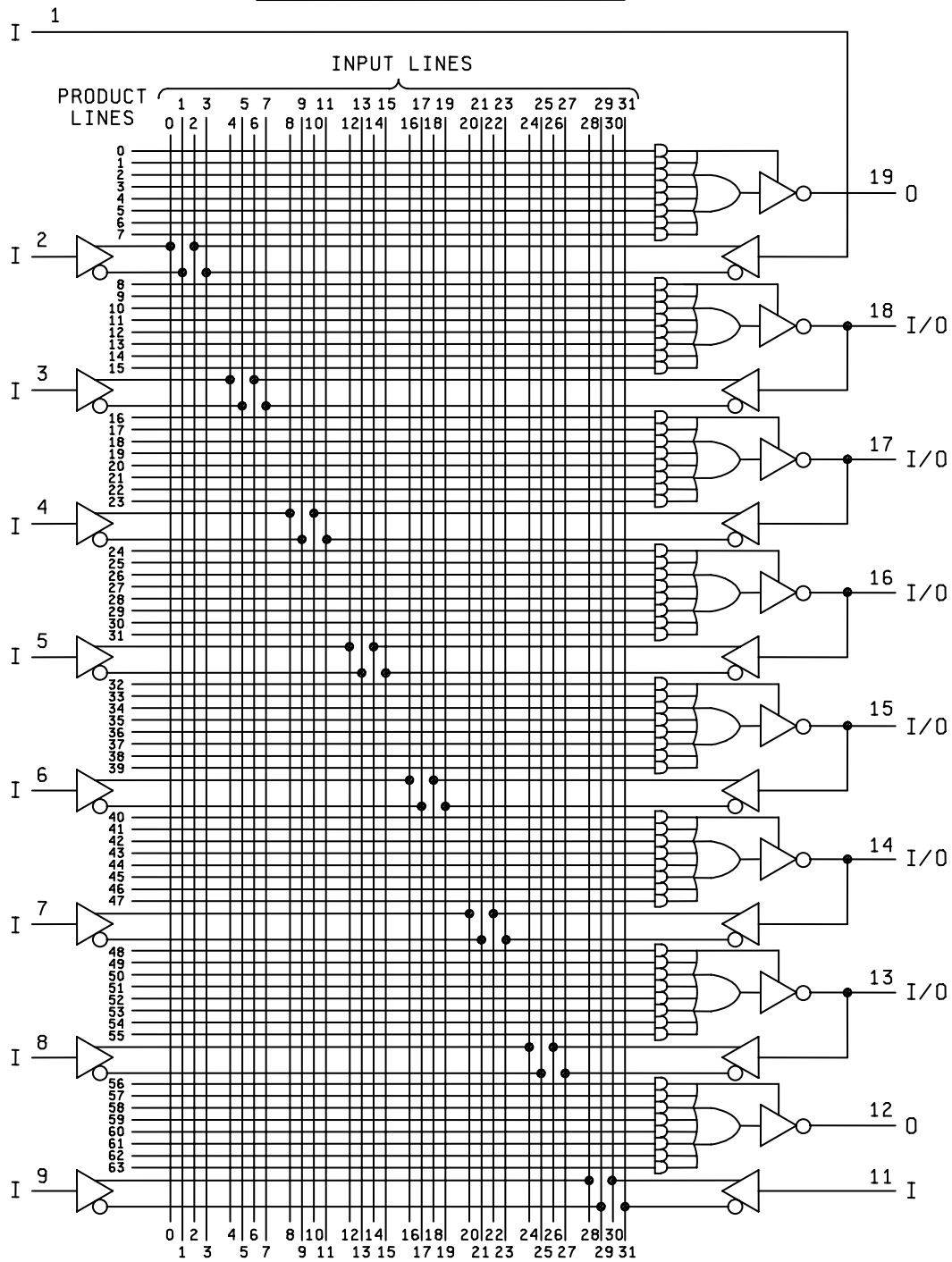
Truth table																	
Inputs										Outputs							
OE	I ₇	I ₆	I ₅	I ₄	I ₃	I ₂	I ₁	I ₀	CLK	I/D ₇	D ₆	D ₅	D ₄	D ₃	D ₂	D ₁	I/D ₀
H	X	X	X	X	X	X	X	X	CLK	Z	Z	Z	Z	Z	Z	Z	Z
L	X	X	X	X	X	X	X	X	CLK	Z	H	H	H	H	H	H	Z

Device types 04, 08, and 12

Truth table																	
Inputs										Outputs							
OE	I ₇	I ₆	I ₅	I ₄	I ₃	I ₂	I ₁	I ₀	CLK	I/D ₇	I/D ₆	D ₅	D ₄	D ₃	D ₂	I/D ₁	I/D ₀
H	X	X	X	X	X	X	X	X	CLK	Z	Z	Z	Z	Z	Z	Z	Z
L	X	X	X	X	X	X	X	X	CLK	Z	Z	H	H	H	H	Z	Z

FIGURE 2. Truth table (unprogrammed).

DEVICE TYPES 01,05 AND 09

FIGURE 3. Logic diagrams (unprogrammed).

DEVICE TYPES 02,06 AND 10

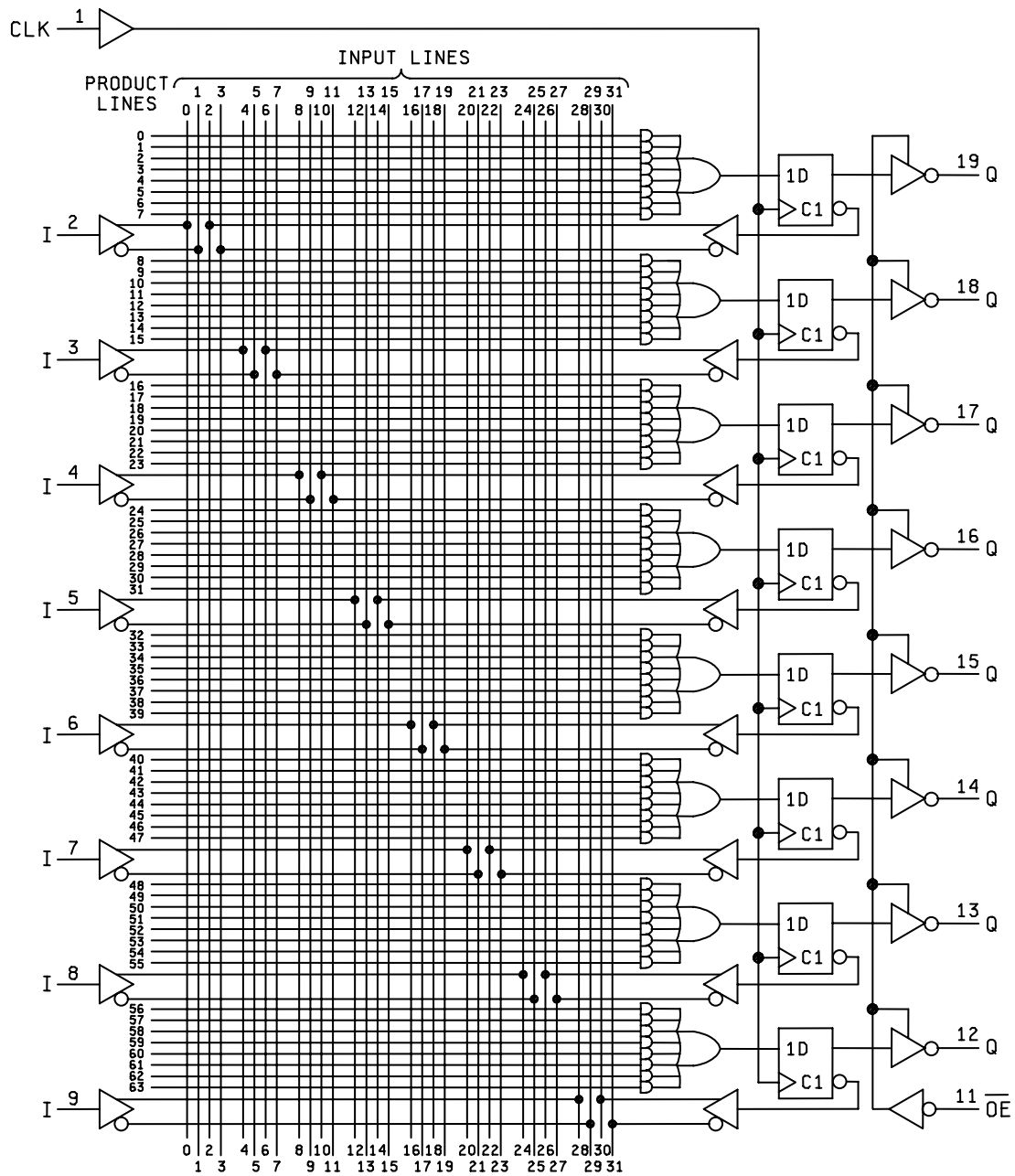


FIGURE 3. Logic diagrams (unprogrammed) – Continued.

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 DEVICE TYPE 03,07 AND 11

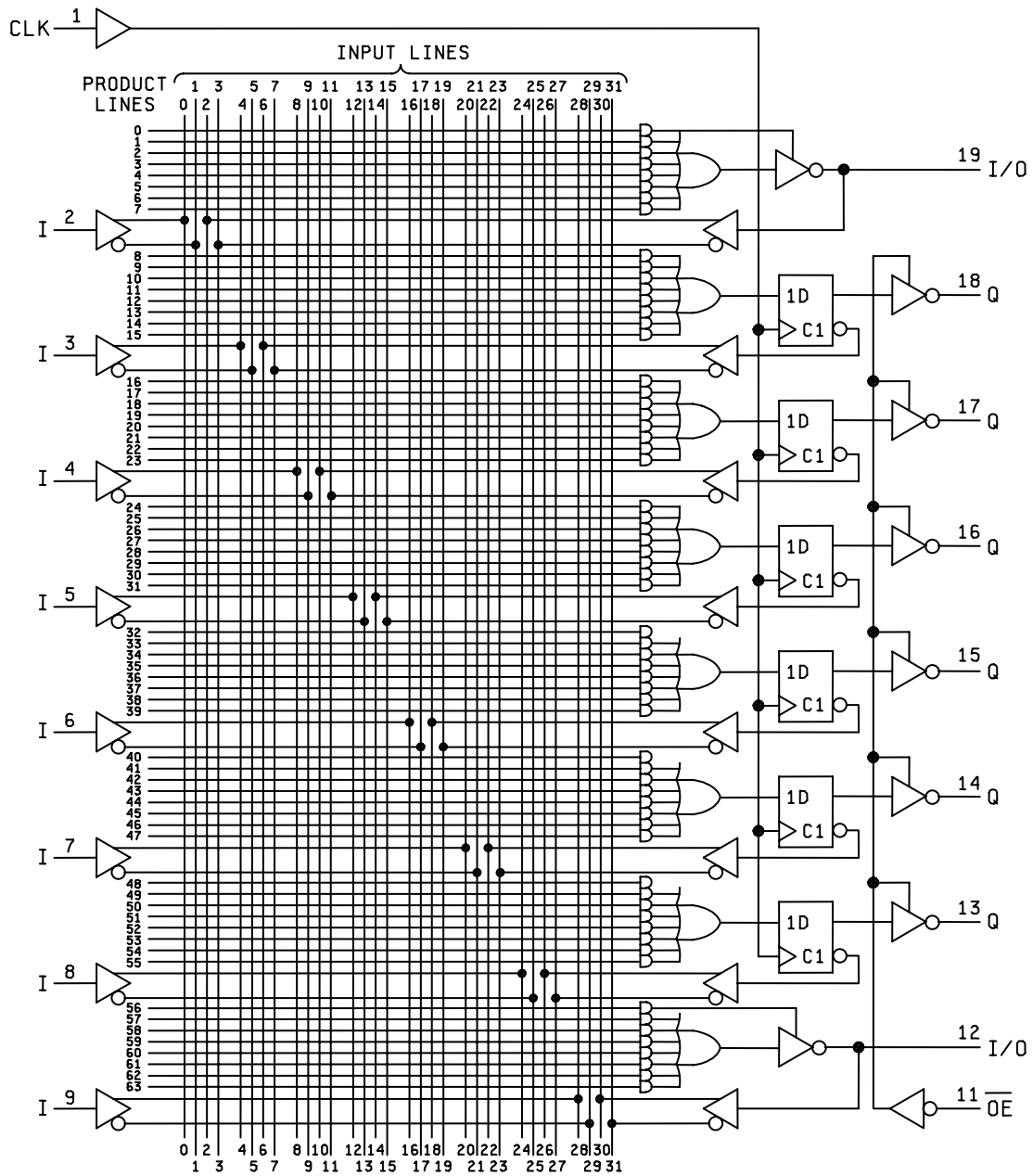


FIGURE 3. Logic diagrams (unprogrammed) – Continued.

DEVICE TYPES 04,08 AND 12

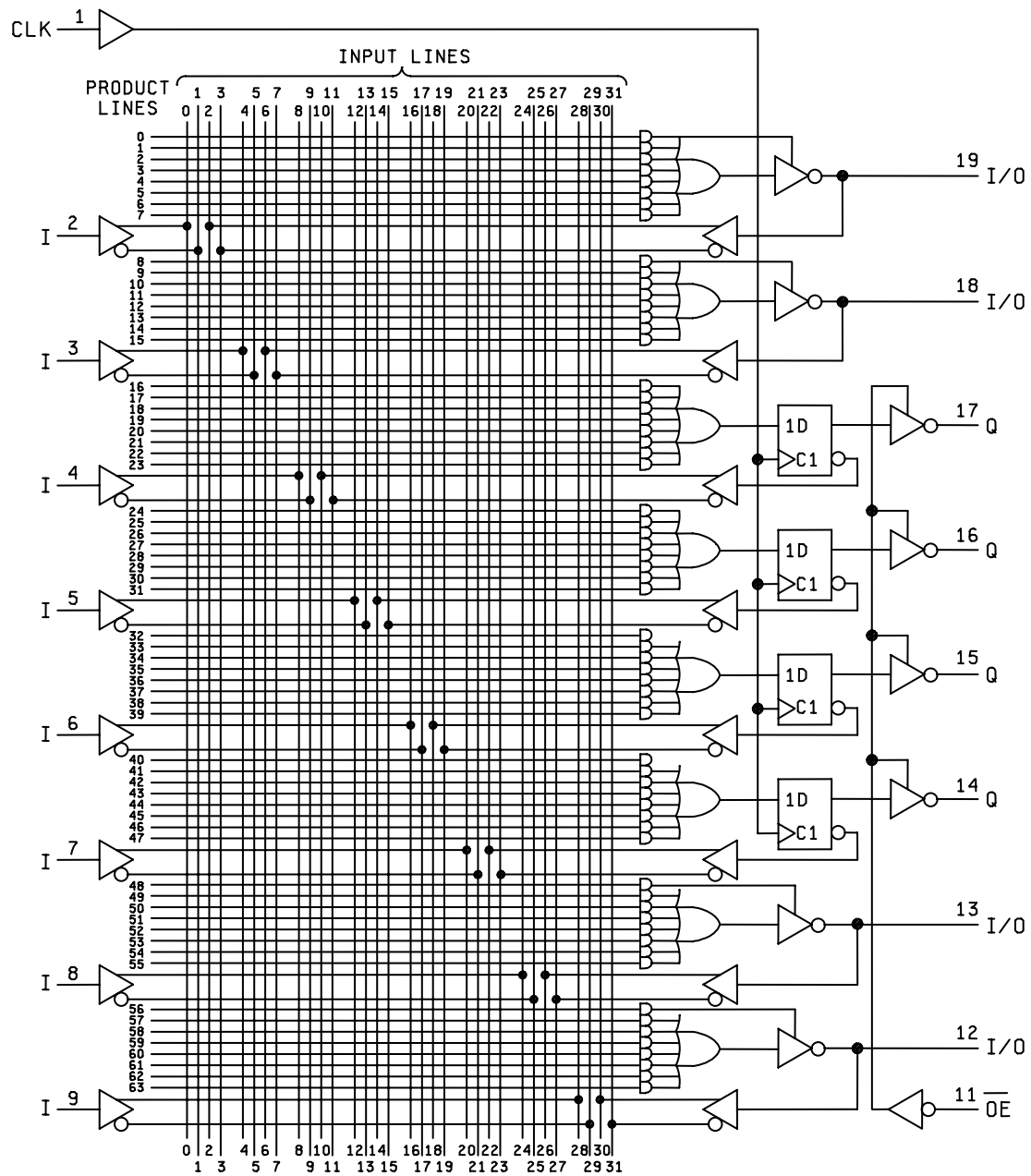


FIGURE 3. Logic diagrams (unprogrammed) – Continued.

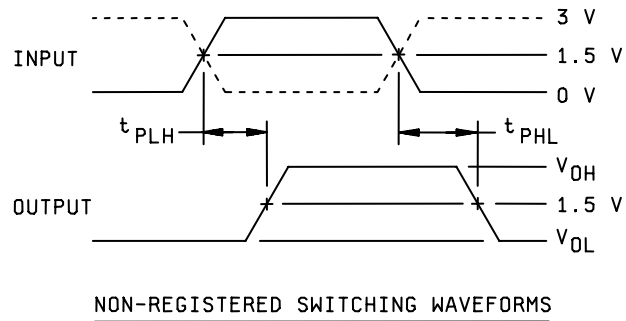
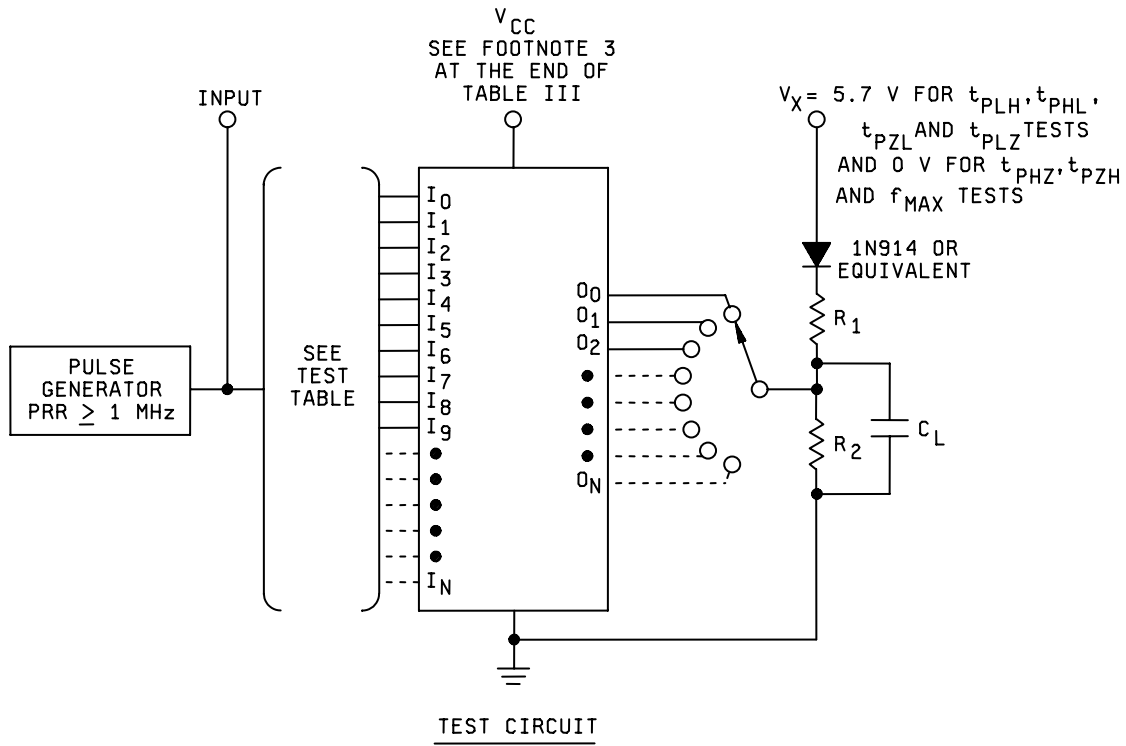
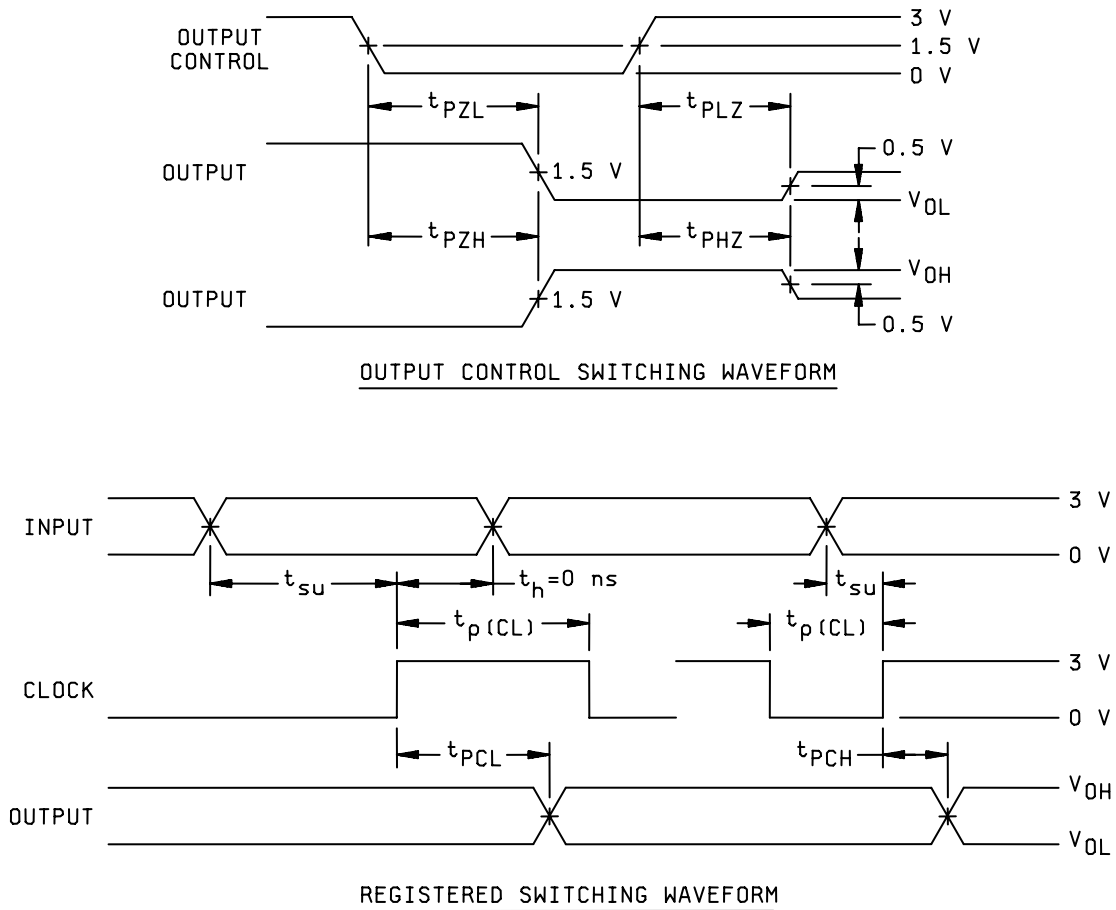


FIGURE 4. Switching waveforms.



NOTES:

1. Test table for devices programmed in accordance with an altered item drawing may be replaced by the equivalent tests which apply to the specific program configuration for the resulting PAL.
2. CL = 50 pF minimum, including jig and probe capacitance; R1 = $365\Omega \pm 2\%$; R2 = $715\Omega \pm 2\%$.
3. Outputs may be under load simultaneously.
4. Verification of limit conditions $t_P(CL)$, t_{SU} , and $t_H = 0$ ns may be conducted by simultaneously setting the conditions to the specified limit values of table III and observing for proper output state change.

FIGURE 4. Switching waveforms – Continued.

TABLE III. Group A inspection for device type 01.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2 Test No.	1 I_0	2 I_1	3 I_2	4 I_3	5 I_4	6 I_5	7 I_6	8 I_7	9 I_8	10 GND	11 I_9	12 O_0	13 I/O_1	14 I/O_2	Meas. terminal	Test limits						Unit
																		Subgroup 1 $T_C = +25^{\circ}\text{C}$		Subgroup 2 $T_C = +125^{\circ}\text{C}$		Subgroup 3 $T_C = -55^{\circ}\text{C}$		
																		Min	Max	Min	Max	Min	Max	
V_{IC}		1	-18 mA									ss					I_0		-1.5		-1.5		-1.5	V
		2		-18 mA								ss					I_1		ss		ss		ss	ss
		3			-18 mA							ss					I_2		ss		ss		ss	ss
		4				-18 mA						ss					I_3		ss		ss		ss	ss
		5					-18 mA					ss					I_4		ss		ss		ss	ss
		6						-18 mA				ss					I_5		ss		ss		ss	ss
		7							-18 mA			ss					I_6		ss		ss		ss	ss
		8								-18 mA		ss					I_7		ss		ss		ss	ss
		9									-18 mA	ss					I_8		ss		ss		ss	ss
		10										ss	-18 mA				I_9		ss		ss		ss	ss
		11													-18 mA		I/O_1		ss		ss		ss	ss
		12														-18 mA	I/O_2		ss		ss		ss	ss
		13															I/O_3		ss		ss		ss	ss
		14															I/O_4		ss		ss		ss	ss
		15															I/O_5		ss		ss		ss	ss
		16															I/O_6		ss		ss		ss	ss
V_{OL}	3007	17	1/	1/	1/	1/	1/	1/	1/	1/	1/	ss	1/	12 mA			O_0		0.5		0.5		0.5	ss
		18	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss		12 mA		I/O_1		ss		ss		ss	ss
		19	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss			12 mA	I/O_2		ss		ss		ss	ss
		20	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss				I/O_3		ss		ss		ss	ss
		21	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss				I/O_4		ss		ss		ss	ss
		22	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss				I/O_5		ss		ss		ss	ss
		23	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss				I/O_6		ss		ss		ss	ss
		24	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss				O_7		ss		ss		ss	ss
V_{OH}	3006	25	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss	-2 mA			O_0	2.4		2.4		2.4		ss
		26	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss		-2 mA		I/O_1		ss		ss		ss	ss
		27	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss			-2 mA	I/O_2		ss		ss		ss	ss
		28	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss				I/O_3		ss		ss		ss	ss
		29	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss				I/O_4		ss		ss		ss	ss
		30	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss				I/O_5		ss		ss		ss	ss
		31	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss				I/O_6		ss		ss		ss	ss
		32	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss				O_7		ss		ss		ss	ss
I_{IL}	3009	33	0.4 V									ss					I_0		-0.25		-0.25		-0.25	mA
		34		0.4 V								ss					I_1		ss		ss		ss	ss
		35			0.4 V							ss					I_2		ss		ss		ss	ss
		36				0.4 V						ss					I_3		ss		ss		ss	ss
		37					0.4 V					ss					I_4		ss		ss		ss	ss
		38						0.4 V				ss					I_5		ss		ss		ss	ss
		39							0.4 V			ss					I_6		ss		ss		ss	ss
		40								0.4 V		ss					I_7		ss		ss		ss	ss
		41									0.4 V	ss					I_8		ss		ss		ss	ss
		42										ss	0.4 V				I_9		ss		ss		ss	ss
		43												0.4 V			I/O_1		ss		ss		ss	ss
		44													0.4 V		I/O_2		ss		ss		ss	ss
		45														0.4 V	I/O_3		ss		ss		ss	ss
		46															I/O_4		ss		ss		ss	ss
		47															I/O_5		ss		ss		ss	ss
		48															I/O_6		ss		ss		ss	ss

See footnotes at end of table.

TABLE III. Group A inspection for device type 01 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit
		Test No.	I/O ₃	I/O ₄	I/O ₅	I/O ₆	O ₇	V _{CC}		Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
V _{IC}		1						4.5 V	I ₀		-1.5		-1.5		-1.5	V
		2							I ₁							
		3							I ₂							
		4							I ₃							
		5							I ₄							
		6							I ₅							
		7							I ₆							
		8							I ₇							
		9							I ₈							
		10							I ₉							
		11							I/O ₁							
		12							I/O ₂							
		13	-18 mA						I/O ₃							
		14		-18 mA					I/O ₄							
		15			-18 mA				I/O ₅							
		16				-18 mA			I/O ₆							
V _{OL}	3007	17							O ₀	0.5		0.5		0.5		
		18							I/O ₁							
		19							I/O ₂							
		20	12 mA						I/O ₃							
		21		12 mA					I/O ₄							
		22			12 mA				I/O ₅							
		23				12 mA			I/O ₆							
		24					12 mA		O ₇							
V _{OH}	3006	25							O ₀	2.4		2.4		2.4		
		26							I/O ₁							
		27							I/O ₂							
		28	-2 mA						I/O ₃							
		29		-2 mA					I/O ₄							
		30			-2 mA				I/O ₅							
		31				-2 mA			I/O ₆							
		32					-2 mA		O ₇							
I _{IL}	3009	33						5.5 V	I ₀	-0.25		-0.25		-0.25	mA	
		34							I ₁							
		35							I ₂							
		36							I ₃							
		37							I ₄							
		38							I ₅							
		39							I ₆							
		40							I ₇							
		41							I ₈							
		42							I ₉							
		43							I/O ₁							
		44							I/O ₂							
		45	0.4 V						I/O ₃							
		46		0.4 V					I/O ₄							
		47			0.4 V				I/O ₅							
		48				0.4 V			I/O ₆							

See footnotes at end of table.

TABLE III. Group A inspection for device type 01 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2 Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit
			I_0	I_1	I_2	I_3	I_4	I_5	I_6	I_7	I_8	GND	I_9	O_0	I/O_1	I/O_2		Subgroup 1 $T_C = +25^{\circ}\text{C}$		Subgroup 2 $T_C = +125^{\circ}\text{C}$		Subgroup 3 $T_C = -55^{\circ}\text{C}$		
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max												
I_{IH}	3010	49	2.7 V									"					I_0		50		50		50	μA
		50		2.7 V								"					I_1		20		20		20	"
		51			2.7 V							"					I_2		"		"		"	"
		52				2.7 V						"					I_3		"		"		"	"
		53					2.7 V					"					I_4		"		"		"	"
		54						2.7 V				"					I_5		"		"		"	"
		55							2.7 V			"					I_6		"		"		"	"
		56								2.7 V			"				I_7		"		"		"	"
		57									2.7 V		"				I_8		"		"		"	"
I_I		58										"	2.7 V				I_9		50		50		50	"
		59	5.5 V									"					I_0		0.2		0.2		0.2	mA
		60		5.5 V								"					I_1		0.1		0.1		0.1	"
		61			5.5 V							"					I_2		"		"		"	"
		62				5.5 V						"					I_3		"		"		"	"
		63					5.5 V					"					I_4		"		"		"	"
		64						5.5 V				"					I_5		"		"		"	"
		65							5.5 V			"					I_6		"		"		"	"
		66								5.5 V			"				I_7		"		"		"	"
		67									5.5 V		"				I_8		"		"		"	"
		68										"	5.5 V				I_9		0.2		0.2		0.2	"
		69										"			5.5 V		I/O_1		0.1		0.1		0.1	"
		70										"				5.5 V	I/O_2		"		"		"	"
		71										"					I/O_3		"		"		"	"
		72										"					I/O_4		"		"		"	"
		73										"					I/O_5		"		"		"	"
74										"					I/O_6		"		"		"	"		
I_O 11/		75	1/	1/	1/	1/	1/	1/	1/	1/	1/	"	1/	2.25 V			O_0	-15	-125	-15	-125	-15	-125	"
		76	"	"	"	"	"	"	"	"	"	"	"		2.25 V		I/O_1	"	"	"	"	"	"	"
		77	"	"	"	"	"	"	"	"	"	"	"			2.25 V	I/O_2	"	"	"	"	"	"	"
		78	"	"	"	"	"	"	"	"	"	"	"				I/O_3	"	"	"	"	"	"	"
		79	"	"	"	"	"	"	"	"	"	"	"				I/O_4	"	"	"	"	"	"	"
		80	"	"	"	"	"	"	"	"	"	"	"				I/O_5	"	"	"	"	"	"	"
		81	"	"	"	"	"	"	"	"	"	"	"				I/O_6	"	"	"	"	"	"	"
		82	"	"	"	"	"	"	"	"	"	"	"				O_7	"	"	"	"	"	"	"
I_{OZH}		83	"	"	"	"	"	"	"	"	"	"	"	2.7 V			O_0		20		20		20	μA
		84	"	"	"	"	"	"	"	"	"	"	"		2.7 V		I/O_1		100		100		100	"
		85	"	"	"	"	"	"	"	"	"	"	"			2.7 V	I/O_2		"		"		"	"
		86	"	"	"	"	"	"	"	"	"	"	"				I/O_3		"		"		"	"
		87	"	"	"	"	"	"	"	"	"	"	"				I/O_4		"		"		"	"
		88	"	"	"	"	"	"	"	"	"	"	"				I/O_5		"		"		"	"
		89	"	"	"	"	"	"	"	"	"	"	"				I/O_6		"		"		"	"
		90	"	"	"	"	"	"	"	"	"	"	"				O_7		20		20		20	"
I_{OZL}		91	"	"	"	"	"	"	"	"	"	"	"	0.4 V			O_0		-20		-20		-20	"
		92	"	"	"	"	"	"	"	"	"	"	"				O_7		-20		-20		-20	"
I_{CC}	3005	93										"				V_{CC}		190		190		190	mA	

See footnotes at end of table.

TABLE III. Group A inspection for device type 01 - Continued
 Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit	
		Test No.	I/O ₃	I/O ₄	I/O ₅	I/O ₆	O ₇	V _{CC}		Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C			
										Min	Max	Min	Max	Min	Max		
I _{IH}	3010	49						5.5 V	I ₀		50		50		50	μA	
		50							I ₁		20		20		20	"	
		51								I ₂						"	
		52								I ₃						"	
		53								I ₄						"	
		54								I ₅						"	
		55								I ₆						"	
		56								I ₇						"	
		57								I ₈						"	
I _I		58							I ₉		50		50		50	"	
		59								I ₀		0.2		0.2		0.2	mA
		60								I ₁		0.1		0.1		0.1	"
		61								I ₂						"	
		62								I ₃						"	
		63								I ₄						"	
		64								I ₅						"	
		65								I ₆						"	
		66								I ₇						"	
		67								I ₈						"	
		68								I ₉		0.2		0.2		0.2	"
		69								I/O ₁		0.1		0.1		0.1	"
		70								I/O ₂						"	
		71	5.5 V							I/O ₃						"	
		72		5.5 V						I/O ₄						"	
		73				5.5 V				I/O ₅						"	
74					5.5 V			I/O ₆						"			
I _O 11/		75							O ₀	-15	-125	-15	-125	-15	-125	"	
		76								I/O ₁						"	
		77								I/O ₂						"	
		78	2.25 V							I/O ₃						"	
		79		2.25 V						I/O ₄						"	
		80			2.25 V					I/O ₅						"	
		81				2.25 V				I/O ₆						"	
		82					2.25 V			O ₇						"	
I _{OZH}		83							O ₀		20		20		20	μA	
		84								I/O ₁		100		100		100	"
		85								I/O ₂						"	
		86	2.7 V							I/O ₃						"	
		87		2.7 V						I/O ₄						"	
		88			2.7 V					I/O ₅						"	
		89				2.7 V				I/O ₆						"	
		90					2.7 V			O ₇		20		20		20	"
I _{OZL}		91						O ₀		-20		-20		-20	"		
92							0.4 V	O ₇		-20		-20		-20	"		
I _{CC}	3005	93						V _{CC}		190		190		190	mA		

See footnotes at end of table.

TABLE III. Group A inspection for device type 01 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit
		Test No.	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	I ₈	GND	I ₉	O ₀	I/O ₁	I/O ₂		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C		
																		Min	Max	Min	Max	Min	Max	
Functional tests	3014	94	2/	2/	2/	2/	2/	2/	2/	2/	2/	GND	2/	2/	2/	2/	All outputs		2/		2/		2/	
																		Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C		
																		Min	Max	Min	Max	Min	Max	
t _{PHL}	3003	95	3/	3/	3/	3/	3/	3/	3/	3/	3/	GND	3/	4/ 5/	4/ 5/	4/ 5/	All outputs		20		20		20	ns
t _{PLH}		96	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"
t _{PZH}		97	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"
t _{PZL}		98	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"
t _{PHZ}		99	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"
t _{PLZ}		100	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"

See footnotes at end of table.

TABLE III. Group A inspection for device type 01 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminals	Test limits						Unit	
		Test No.	I/O ₃	I/O ₄	I/O ₅	I/O ₆	O ₇	V _{CC}		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C			
										Min	Max	Min	Max	Min	Max		
Functional tests	3014	94	2/	2/	2/	2/	2/	5.5 V	All outputs		2/		2/		2/		
										Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C			
										Min	Max	Min	Max	Min	Max		
t _{PHL}	3003	95	4/ 5/	4/ 5/	4/ 5/	4/ 5/	4/ 5/	4/ 5/	3/	All outputs		20		20		20	ns
t _{PLH}		96	"	"	"	"	"	"	"	"		"		"		"	"
t _{PZH}		97	"	"	"	"	"	"	"	"		"		"		"	"
t _{PZL}		98	"	"	"	"	"	"	"	"		"		"		"	"
t _{PHZ}		99	"	"	"	"	"	"	"	"		"		"		"	"
t _{PLZ}		100	"	"	"	"	"	"	"	"		"		"		"	"

See footnotes at end of table.

TABLE III. Group A inspection for device type 02.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
			Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	O ₀	O ₁		O ₂	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																			Min	Max	Min	Max	Min		Max
V _{IC}		1	-18 mA									GND					CLOCK		-1.5		-1.5		-1.5	V	
		2		-18 mA													I ₀								
		3			-18 mA												I ₁								
		4				-18 mA											I ₂								
		5					-18 mA										I ₃								
		6						-18 mA									I ₄								
		7							-18 mA								I ₅								
		8								-18 mA							I ₆								
		9									-18 mA						I ₇								
		10											-18 mA				$\overline{\text{OE}}$								
V _{OL}	3007	11	1/	1/	1/	1/	1/	1/	1/	1/	1/		1/ 6/	12 mA			O ₀		0.5		0.5		0.5		
		12													12 mA		O ₁								
		13														12 mA	O ₂								
		14															O ₃								
		15															O ₄								
		16															O ₅								
		17															O ₆								
		18															O ₇								
		19													-2 mA		O ₀	2.4		2.4		2.4			
V _{OH}	3006	20														-2 mA	O ₁								
		21															O ₂								
		22															O ₃								
		23															O ₄								
		24															O ₅								
		25															O ₆								
		26															O ₇								
		27	0.4 V														CLOCK		-0.25		-0.25		-0.25	mA	
I _{IL}	3009	28		0.4 V													I ₀								
		29			0.4 V												I ₁								
		30				0.4 V											I ₂								
		31					0.4 V										I ₃								
		32						0.4 V									I ₄								
		33							0.4 V								I ₅								
		34								0.4 V							I ₆								
		35									0.4 V						I ₇								
		36											0.4 V				$\overline{\text{OE}}$								

TABLE III. Group A inspection for device type 02 – Continued.
 Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit
		Test No.	O ₃	O ₄	O ₅	O ₆	O ₇	V _{CC}		Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
V _{IC}		1						4.5 V	CLOCK		-1.5		-1.5		-1.5	V
		2							I ₀							
		3							I ₁							
		4							I ₂							
		5							I ₃							
		6							I ₄							
		7							I ₅							
		8							I ₆							
		9							I ₇							
		10							OE							
V _{OL}	3007	11							O ₀		0.5		0.5		0.5	
		12							O ₁							
		13							O ₂							
		14	12 mA						O ₃							
		15		12 mA					O ₄							
		16			12 mA				O ₅							
		17				12 mA			O ₆							
		18					12 mA		O ₇							
V _{OH}	3006	19							O ₀		2.4		2.4		2.4	
		20							O ₁							
		21							O ₂							
		22	-2 mA						O ₃							
		23		-2 mA					O ₄							
		24			-2 mA				O ₅							
		25				-2 mA			O ₆							
		26					-2 mA		O ₇							
I _{IL}	3009	27						5.5 V	CLOCK		-0.25		-0.25		-0.25	mA
		28							I ₀							
		29							I ₁							
		30							I ₂							
		31							I ₃							
		32							I ₄							
		33							I ₅							
		34							I ₆							
		35							I ₇							
		36							OE							

See footnotes at end of table.

TABLE III. Group A inspection for device type 02 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit		
			Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	O ₀	O ₁		O ₂	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C			
																			Min	Max	Min	Max	Min		Max	
I _{IH}	3010	37	2.7 V									GND					CLOCK		50		50		50	μA		
		38		2.7 V								"					I ₀		20		20		20	"		
		39			2.7 V								"					I ₁		"		"		"	"	
		40				2.7 V							"					I ₂		"		"		"	"	
		41					2.7 V						"					I ₃		"		"		"	"	
		42						2.7 V					"					I ₄		"		"		"	"	
		43							2.7 V				"					I ₅		"		"		"	"	
		44								2.7 V			"					I ₆		"		"		"	"	
		45									2.7 V		"					I ₇		"		"		"	"	
46											"	2.7 V				$\overline{\text{OE}}$	50		50		50	"				
I _I		47	5.5 V									"					CLOCK		0.2		0.2		0.2	mA		
		48		5.5 V								"					I ₀		0.1		0.1		0.1	"		
		49			5.5 V							"					I ₁		"		"		"	"		
		50				5.5 V						"					I ₂		"		"		"	"		
		51					5.5 V					"					I ₃		"		"		"	"		
		52						5.5 V				"					I ₄		"		"		"	"		
		53							5.5 V			"					I ₅		"		"		"	"		
		54								5.5 V		"					I ₆		"		"		"	"		
		55									5.5 V	"					I ₇		"		"		"	"		
56										"	5.5 V				$\overline{\text{OE}}$	0.2		0.2		0.2	"					
I _O 11/		57	1/	1/	1/	1/	1/	1/	1/	1/	1/	"	1/ 6/	2.25 V			O ₀	-15	-125	-15	-125	-15	-125	"		
		58	"	"	"	"	"	"	"	"	"	"	"		2.25 V		O ₁	"	"	"	"	"	"	"		
		59	"	"	"	"	"	"	"	"	"	"	"			2.25 V	O ₂	"	"	"	"	"	"	"		
		60	"	"	"	"	"	"	"	"	"	"	"				O ₃	"	"	"	"	"	"	"		
		61	"	"	"	"	"	"	"	"	"	"	"				O ₄	"	"	"	"	"	"	"		
		62	"	"	"	"	"	"	"	"	"	"	"				O ₅	"	"	"	"	"	"	"		
		63	"	"	"	"	"	"	"	"	"	"	"				O ₆	"	"	"	"	"	"	"		
		64	"	"	"	"	"	"	"	"	"	"	"				O ₇	"	"	"	"	"	"	"		
		65	"	"	"	"	"	"	"	"	"	"	"	1/ 1/	2.7 V		O ₀		20		20		20	μA		
I _{OZH}		66	"	"	"	"	"	"	"	"	"	"	"		2.7 V		O ₁	"	"	"	"	"	"	"	"	
		67	"	"	"	"	"	"	"	"	"	"	"			2.7 V	O ₂	"	"	"	"	"	"	"		
		68	"	"	"	"	"	"	"	"	"	"	"				O ₃	"	"	"	"	"	"	"		
		69	"	"	"	"	"	"	"	"	"	"	"				O ₄	"	"	"	"	"	"	"		
		70	"	"	"	"	"	"	"	"	"	"	"				O ₅	"	"	"	"	"	"	"		
		71	"	"	"	"	"	"	"	"	"	"	"				O ₆	"	"	"	"	"	"	"		
		72	"	"	"	"	"	"	"	"	"	"	"				O ₇	"	"	"	"	"	"	"		
		I _{OZL}		73	"	"	"	"	"	"	"	"	"	"	"		0.4 V		O ₀		-20		-20		-20	"
				74	"	"	"	"	"	"	"	"	"	"	"			0.4 V	O ₁	"	"	"	"	"	"	"
75	"			"	"	"	"	"	"	"	"	"	"				O ₂	"	"	"	"	"	"	"		
76	"			"	"	"	"	"	"	"	"	"	"				O ₃	"	"	"	"	"	"	"		
77	"			"	"	"	"	"	"	"	"	"	"				O ₄	"	"	"	"	"	"	"		
78	"			"	"	"	"	"	"	"	"	"	"				O ₅	"	"	"	"	"	"	"		
79	"			"	"	"	"	"	"	"	"	"	"				O ₆	"	"	"	"	"	"	"		
80	"			"	"	"	"	"	"	"	"	"	"				O ₇	"	"	"	"	"	"	"		
I _{CC}	3005			81										"				V _{CC}		190		190		190	mA	

See footnotes at end of table.

TABLE III. Group A inspection for device type 02 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit	
			Test No.	O ₃	O ₄	O ₅	O ₆	O ₇		V _{CC}	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
											Min	Max	Min	Max	Min		Max
I _{IH}	3010	37						5.5 V	CLOCK		50		50		50	μA	
		38							I ₀		20		20		20	"	
		39							I ₁		"		"		"	"	
		40							I ₂		"		"		"	"	
		41							I ₃		"		"		"	"	
		42							I ₄		"		"		"	"	
		43							I ₅		"		"		"	"	
		44							I ₆		"		"		"	"	
		45							I ₇		"		"		"	"	
		46							OE		50		50		50	"	
I _I		47							CLOCK		0.2		0.2		0.2	mA	
		48							I ₀		0.1		0.1		0.1	"	
		49							I ₁		"		"		"	"	
		50							I ₂		"		"		"	"	
		51							I ₃		"		"		"	"	
		52							I ₄		"		"		"	"	
		53							I ₅		"		"		"	"	
		54							I ₆		"		"		"	"	
		55							I ₇		"		"		"	"	
		56							OE		0.2		0.2		0.2	"	
I _O 11/		57							O ₀	-15	-125	-15	-125	-15	-125	"	
		58							O ₁	"	"	"	"	"	"	"	
		59							O ₂	"	"	"	"	"	"	"	
		60	2.25 V						O ₃	"	"	"	"	"	"	"	
		61		2.25 V					O ₄	"	"	"	"	"	"	"	
		62			2.25 V				O ₅	"	"	"	"	"	"	"	
		63				2.25 V			O ₆	"	"	"	"	"	"	"	
		64					2.25 V		O ₇	"	"	"	"	"	"	"	
		65						2.25 V	O ₀		20		20		20	μA	
		66							O ₁		"		"		"	"	
I _{OZH}		67							O ₂		"		"		"	"	
		68	2.7 V						O ₃		"		"		"	"	
		69		2.7 V					O ₄		"		"		"	"	
		70			2.7 V				O ₅		"		"		"	"	
		71				2.7 V			O ₆		"		"		"	"	
		72					2.7 V		O ₇		"		"		"	"	
		73							O ₀		-20		-20		-20	"	
		74							O ₁		"		"		"	"	
I _{OZL}		75							O ₂		"		"		"	"	
		76	0.4 V						O ₃		"		"		"	"	
		77		0.4 V					O ₄		"		"		"	"	
		78			0.4 V				O ₅		"		"		"	"	
		79				0.4 V			O ₆		"		"		"	"	
		80					0.4 V		O ₇		"		"		"	"	
I _{CC}	3005	81						V _{CC}		190		190		190	mA		

See footnotes at end of table

TABLE III. Group A inspection for device type 02 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
		Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	O ₀	O ₁	O ₂		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C			
																		Min	Max	Min	Max	Min	Max		
Functional tests	3014	82	2/	2/	2/	2/	2/	2/	2/	2/	2/	GND	2/	2/	2/	2/	All outputs		2/		2/		2/		
																		Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C			
																		Min	Max	Min	Max	Min	Max		
t _{SU} 10/	3003	83	3/	3/	3/	3/	3/	3/	3/	3/	3/	GND	6/	4/ 8/	4/ 8/	4/ 8/	All 3/ register outputs		20		20		20	ns	
t _{P(CL)} 10/		84	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	12		12		12	"		
t _{PCH}		85	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		15		15		15	"	
t _{PCL}		86	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"	
t _{PZH}		87	"	"	"	"	"	"	"	"	"	"	"	3/	"	"	"	"		"		"		"	"
t _{PZL}		88	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"
t _{PHZ}		89	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"
t _{PLZ}		90	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"
f _{MAX}		91	9/	9/	9/	9/	9/	9/	9/	9/	9/	9/	"	6/	9/	9/	9/	"	40		40		40	MHz	

See footnotes at end of table.

TABLE III. Group A inspection for device type 02 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminals	Test limits						Unit	
		Test No.	O ₃	O ₄	O ₅	O ₆	O ₇	V _{CC}		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C			
										Min	Max	Min	Max	Min	Max		
Functional tests	3014	82	2/	2/	2/	2/	2/	2/	5.5 V	All outputs		2/		2/		2/	
										Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C			
										Min	Max	Min	Max	Min	Max		
t _{SIU} 10/	3003	83	4/ 8/	4/ 8/	4/ 8/	4/ 8/	4/ 8/	4/ 8/	All 3/ register outputs		20		20		20	ns	
t _{P(CL)} 10/		84	"	"	"	"	"	"	"	12		12		12		"	
t _{PCH}		85	"	"	"	"	"	"	"		15		15		15	"	
t _{PCL}		86	"	"	"	"	"	"	"		"		"		"	"	
t _{PZH}		87	"	"	"	"	"	"	"		"		"		"	"	
t _{PZL}		88	"	"	"	"	"	"	"		"		"		"	"	
t _{PHZ}		89	"	"	"	"	"	"	"		"		"		"	"	
t _{PLZ}		90	"	"	"	"	"	"	"		"		"		"	"	
f _{MAX}		91	9/	9/	9/	9/	9/	9/	4.5 V	"	40		40		40	MHz	

See footnotes at end of table.

TABLE III. Group A inspection for device type 03.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
			Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	I/O ₀	O ₁		O ₂	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																			Min	Max	Min	Max	Min		Max
V _{IC}		1	-18 mA									GND					CLOCK		-1.5		-1.5		-1.5	V	
		2		-18 mA													I ₀								
		3			-18 mA												I ₁								
		4				-18 mA											I ₂								
		5					-18 mA										I ₃								
		6						-18 mA									I ₄								
		7							-18 mA								I ₅								
		8								-18 mA							I ₆								
		9									-18 mA						I ₇								
		10												-18 mA			$\overline{\text{OE}}$								
		11													-18 mA		I/O ₀								
		12															I/O ₇								
V _{OL}	3007	13	1/	1/	1/	1/	1/	1/	1/	1/	1/		1/ 6/	12 mA			O ₁	0.5		0.5		0.5			
		14													12 mA		O ₂								
		15															O ₃								
		16															O ₄								
		17															O ₅								
		18															O ₆								
		19															I/O ₇								
		20															I/O ₀	2.4		2.4		2.4			
V _{OH}	3006	21												-2 mA			O ₁								
		22													-2 mA		O ₂								
		23														-2 mA	O ₃								
		24															O ₄								
		25															O ₅								
		26															O ₆								
		27															I/O ₇								
		28															I/O ₀								
I _{IL}	3009	29	0.4 V														CLOCK	-0.25		-0.25		-0.25	mA		
		30		0.4 V													I ₀								
		31			0.4 V												I ₁								
		32				0.4 V											I ₂								
		33					0.4 V										I ₃								
		34						0.4 V									I ₄								
		35							0.4 V								I ₅								
		36								0.4 V							I ₆								
		37									0.4 V						I ₇								
		38											0.4 V				$\overline{\text{OE}}$								
		39												0.4 V			I/O ₀								
		40															I/O ₇								

See footnotes at end of table.

TABLE III. Group A inspection for device type 03 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2 Test No.	15 O ₃	16 O ₄	17 O ₅	18 O ₆	19 I/O ₇	20 V _{CC}	Meas. terminal	Test limits						Unit
										Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
V _{IC}		1						4.5 V	CLOCK		-1.5		-1.5		-1.5	V
		2							I ₀							
		3							I ₁							
		4							I ₂							
		5							I ₃							
		6							I ₄							
		7							I ₅							
		8							I ₆							
		9							I ₇							
		10							OE							
		11							I/O ₀							
		12						-18 mA	I/O ₇							
V _{OL}	3007	13							I/O ₀		0.5		0.5		0.5	
		14							O ₁							
		15							O ₂							
		16	12 mA						O ₃							
		17		12 mA					O ₄							
		18			12 mA				O ₅							
		19				12 mA			O ₆							
		20					12 mA		I/O ₇							
		21							I/O ₀	2.4		2.4		2.4		
22							O ₁									
23							O ₂									
24	-2 mA						O ₃									
25		-2 mA					O ₄									
26			-2 mA				O ₅									
27				-2 mA			O ₆									
28					-2 mA		I/O ₇									
I _{IL}	3009	29						5.5 V	CLOCK		-0.25		-0.25		-0.25	mA
		30							I ₀							
		31							I ₁							
		32							I ₂							
		33							I ₃							
		34							I ₄							
		35							I ₅							
		36							I ₆							
		37							I ₇							
		38							OE							
		39							I/O ₀							
		40					0.4 V		I/O ₇							

See footnotes at end of table.

TABLE III. Group A inspection for device type 03 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
			Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	I/O ₀	O ₁		O ₂	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																			Min	Max	Min	Max	Min		Max
I _{IH}	3010	41	2.7 V									GND					CLOCK		50		50		50	μA	
		42		2.7 V													I ₀		20		20		20	"	
		43			2.7 V												I ₁							"	
		44				2.7 V											I ₂							"	
		45					2.7 V										I ₃							"	
		46						2.7 V									I ₄							"	
		47							2.7 V								I ₅							"	
		48									2.7 V						I ₆							"	
		49										2.7 V					I ₇							"	
		50												2.7 V			$\overline{\text{OE}}$		50		50		50	"	
I _I		51	5.5 V														CLOCK		0.2		0.2		0.2	mA	
		52		5.5 V													I ₀		0.1		0.1		0.1	"	
		53			5.5 V												I ₁							"	
		54				5.5 V											I ₂							"	
		55					5.5 V										I ₃							"	
		56						5.5 V									I ₄							"	
		57							5.5 V								I ₅							"	
		58								5.5 V							I ₆							"	
		59									5.5 V						I ₇							"	
		60											5.5 V				$\overline{\text{OE}}$		0.2		0.2		0.2	"	
		61													5.5 V		I/O ₀		0.1		0.1		0.1	"	
		62															I/O ₇		0.1		0.1		0.1	"	
		I _O 11/		63	1/	1/	1/	1/	1/	1/	1/	1/	1/		1/ 6/	2.25 V			I/O ₀	-15	-125	-15	-125	-15	-125
64															2.25 V		O ₁							"	
65																2.25 V	O ₂							"	
66																	O ₃							"	
67																	O ₄							"	
68																	O ₅							"	
69																	O ₆							"	
70																	I/O ₇							"	
71															1/ 7/	2.7 V		I/O ₀		100		100		100	μA
72																2.7 V		O ₁		20		20		20	"
I _{OZH}		73															O ₂							"	
		74															O ₃							"	
		75															O ₄							"	
		76															O ₅							"	
		77															O ₆							"	
		78															I/O ₇		100		100		100	"	
		79														0.4 V	O ₁		-20		-20		-20	"	
		80														0.4 V	O ₂							"	
I _{OZL}		81															O ₃							"	
		82															O ₄							"	
		83															O ₅							"	
		84															O ₆							"	
		I _{CC}	3005	85														V _{CC}		190		190		190	mA

See footnotes at end of table.

TABLE III. Group A inspection for device type 03 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit	
			Test No.	O ₃	O ₄	O ₅	O ₆	I/O ₇		V _{CC}	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
											Min	Max	Min	Max	Min		Max
I _{IH}	3010	41						5.5 V	CLOCK		50		50		50	μA	
		42						"	I ₀		20		20		20	"	
		43						"	I ₁		"		"		"	"	
		44						"	I ₂		"		"		"	"	
		45						"	I ₃		"		"		"	"	
		46						"	I ₄		"		"		"	"	
		47						"	I ₅		"		"		"	"	
		48						"	I ₆		"		"		"	"	
		49						"	I ₇		"		"		"	"	
50						"	OE		50		50		50	"			
I _I		51						"	CLOCK		0.2		0.2		0.2	mA	
		52						"	I ₀		0.1		0.1		0.1	"	
		53						"	I ₁		"		"		"	"	
		54						"	I ₂		"		"		"	"	
		55						"	I ₃		"		"		"	"	
		56						"	I ₄		"		"		"	"	
		57						"	I ₅		"		"		"	"	
		58						"	I ₆		"		"		"	"	
		59						"	I ₇		"		"		"	"	
		60						"	OE		0.2		0.2		0.2	"	
		61						"	I/O ₀		0.1		0.1		0.1	"	
		62					5.5 V	"	I/O ₇		0.1		0.1		0.1	"	
		63						"	I/O ₀	-15	-125	-15	-125	-15	-125	"	
		64						"	O ₁	"	"	"	"	"	"	"	
I _O 11/		65						"	O ₂	"	"	"	"	"	"	"	
		66	2.25 V					"	O ₃	"	"	"	"	"	"	"	
		67		2.25 V				"	O ₄	"	"	"	"	"	"	"	
		68			2.25 V			"	O ₅	"	"	"	"	"	"	"	
		69				2.25 V		"	O ₆	"	"	"	"	"	"	"	
		70					2.25 V	"	I/O ₇	"	"	"	"	"	"	"	
		71						"	I/O ₀		100		100		100	μA	
		72						"	O ₁		20		20		20	"	
I _{OZH}		73						"	O ₂		"		"		"	"	
		74	2.7 V					"	O ₃		"		"		"	"	
		75		2.7 V				"	O ₄		"		"		"	"	
		76			2.7 V			"	O ₅		"		"		"	"	
		77				2.7 V		"	O ₆		"		"		"	"	
		78					2.7 V	"	I/O ₇		100		100		100	"	
		79						"	O ₁		-20		-20		-20	"	
		80						"	O ₂		"		"		"	"	
I _{OZL}		81	0.4 V					"	O ₃		"		"		"	"	
		82		0.4 V				"	O ₄		"		"		"	"	
		83			0.4 V			"	O ₅		"		"		"	"	
		84				0.4 V		"	O ₆		"		"		"	"	
		I _{CC}	3005	85						"	V _{CC}		190		190		190

See footnotes at end of table.

TABLE III. Group A inspection for device type 03 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
			Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	I/O ₀	O ₁		O ₂	Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C		
																			Min	Max	Min	Max	Min		Max
Functional tests	3014	86	2/	2/	2/	2/	2/	2/	2/	2/	2/	GND	2/	2/	2/	2/	All outputs		2/		2/		2/		
																		Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C			
																		Min	Max	Min	Max	Min	Max		
t _{SU} 10/	3003	87	3/	3/	3/	3/	3/	3/	3/	3/	3/	GND	6/		4/ 8/	4/ 8/	All register outputs	20		20		20		ns	
t _{P(CL)} 10/		88	"	"	"	"	"	"	"	"	"	"	"		"	"	"	12		12		12		"	
t _{PCL}		89	"	"	"	"	"	"	"	"	"	"	"		"	"	"		15		15		15	"	
t _{PCH}		90	"	"	"	"	"	"	"	"	"	"	"		"	"	"		15		15		15	"	
t _{PHL}		91	"	"	"	"	"	"	"	"	"	"	"		4/ 5/		All I/O's		20		20		20	"	
t _{PLH}		92	"	"	"	"	"	"	"	"	"	"	"		4/ 5/		All I/O's		20		20		20	"	
t _{PZH}		93	"	"	"	"	"	"	"	"	"	"	"	3/		4/ 8/	4/ 8/	All register outputs	15		15		15	"	
t _{PZL}		94	"	"	"	"	"	"	"	"	"	"	"	"		"	"	"		"		"		"	
t _{PHZ}		95	"	"	"	"	"	"	"	"	"	"	"	"		"	"	"		"		"		"	
t _{PLZ}		96	"	"	"	"	"	"	"	"	"	"	"	"		"	"	"		"		"		"	
t _{PZH}		97	"	"	"	"	"	"	"	"	"	"	"	"	4/ 5/		All I/O's		20		20		20	"	
t _{PZL}		98	"	"	"	"	"	"	"	"	"	"	"	"		"	"	"		"		"		"	
t _{PHZ}		99	"	"	"	"	"	"	"	"	"	"	"	"		"	"	"		"		"		"	
t _{PLZ}		100	"	"	"	"	"	"	"	"	"	"	"	"		"	"	"		"		"		"	
f _{MAX}			101	9/	9/	9/	9/	9/	9/	9/	9/	9/	"	6/		9/	9/	All register outputs	40		40		40		MHz

See footnotes at end of table.

TABLE III. Group A inspection for device type 03 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminals	Test limits						Unit
		Test No.	O ₃	O ₄	O ₅	O ₆	I/O ₇	V _{CC}		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
Functional tests	3014	86	2/	2/	2/	2/	2/	5.5 V	All outputs		2/		2/		2/	
										Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
t _{SIU} 10/	3003	87	4/ 8/	4/ 8/	4/ 8/	4/ 8/		3/	All register outputs	20		20		20		ns
t _{P(CL)} 10/		88	"	"	"	"		"	"	12		12		12		"
t _{PCL}		89	"	"	"	"		"	"		15		15		15	"
t _{PCH}		90	"	"	"	"		"	"		15		15		15	"
t _{PHL}		91					4/ 5	"	All I/O's		20		20		20	"
t _{PLH}		92					4/ 5	"	All I/O's		20		20		20	"
t _{PZH}		93	4/ 8/	4/ 8/	4/ 8/	4/ 8/		"	All register outputs		15		15		15	"
t _{PZL}		94	"	"	"	"		"	"		"		"		"	"
t _{PHZ}		95	"	"	"	"		"	"		"		"		"	"
t _{PLZ}		96	"	"	"	"		"	"		"		"		"	"
t _{PZH}		97					4/ 5	"	All I/O's		20		20		20	"
t _{PZL}		98					"	"	"		"		"		"	"
t _{PHZ}		99					"	"	"		"		"		"	"
t _{PLZ}		100					"	"	"		"		"		"	"
f _{MAX}		101	9/	9/	9/	9/		4.5 V	All register outputs	40		40		40		MHz

See footnotes at end of table.

TABLE III. Group A inspection for device type 04.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
			Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	I/O ₀	I/O ₁		O ₂	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																			Min	Max	Min	Max	Min		Max
V _{IC}		1	-18 mA									GND					CLOCK		-1.5		-1.5		-1.5	V	
		2		-18 mA													I ₀								
		3			-18 mA												I ₁								
		4				-18 mA											I ₂								
		5					-18 mA										I ₃								
		6						-18 mA									I ₄								
		7							-18 mA								I ₅								
		8								-18 mA							I ₆								
		9									-18 mA						I ₇								
		10											-18 mA				$\overline{\text{OE}}$								
		11												-18 mA			I/O ₀								
		12													-18 mA		I/O ₁								
		13															I/O ₆								
		14															I/O ₇								
V _{OL}	3007	15	1/	1/	1/	1/	1/	1/	1/	1/	1/		1/ 6/	12 mA			I/O ₀		0.5		0.5		0.5		
		16													12 mA		I/O ₁								
		17														12 mA	O ₂								
		18															O ₃								
		19															O ₄								
		20															O ₅								
		21															I/O ₆								
		22															I/O ₇								
V _{OH}	3006	23												-2 mA			I/O ₀	2.4		2.4		2.4			
		24													-2 mA		I/O ₁								
		25														-2 mA	O ₂								
		26															O ₃								
		27															O ₄								
		28															O ₅								
		29															I/O ₆								
		30															I/O ₇								
I _{IL}	3009	31	0.4 V														CLOCK		-0.25		-0.25		-0.25	mA	
		32		0.4 V													I ₀								
		33			0.4 V												I ₁								
		34				0.4 V											I ₂								
		35					0.4 V										I ₃								
		36						0.4 V									I ₄								
		37							0.4 V								I ₅								
		38								0.4 V							I ₆								
		39									0.4 V						I ₇								
		40											0.4 V				$\overline{\text{OE}}$								
		41												0.4 V			I/O ₀								
		42													0.4 V		I/O ₁								
		43															I/O ₆								
		44															I/O ₇								

See footnotes at end of table.

TABLE III. Group A inspection for device type 04 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit	
		Test No.	O ₃	O ₄	O ₅	I/O ₆	I/O ₇	V _{CC}		Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C			
										Min	Max	Min	Max	Min	Max		
V _{IC}		1						4.5 V	CLOCK		-1.5		-1.5		-1.5	V	
		2							I ₀		“		“		“	“	
		3							I ₁		“		“		“	“	
		4							I ₂		“		“		“	“	
		5							I ₃		“		“		“	“	
		6							I ₄		“		“		“	“	
		7							I ₅		“		“		“	“	
		8							I ₆		“		“		“	“	
		9							I ₇		“		“		“	“	
		10							“	OE		“		“		“	“
		11							“	I/O ₀		“		“		“	“
		12							“	I/O ₁		“		“		“	“
		13					-18 mA		“	I/O ₆		“		“		“	“
		14						-18 mA	“	I/O ₇		“		“		“	“
V _{OL}	3007	15						“	I/O ₀		0.5		0.5		0.5	“	
		16							I/O ₁		“		“		“	“	
		17							O ₂		“		“		“	“	
		18	12 mA						O ₃		“		“		“	“	
		19		12 mA					O ₄		“		“		“	“	
		20			12 mA				O ₅		“		“		“	“	
		21				12 mA			I/O ₆		“		“		“	“	
		22					12 mA		I/O ₇		“		“		“	“	
		23							“	I/O ₀			2.4		2.4	“	
		24							“	I/O ₁	2.4	“	“		“	“	
V _{OH}	3006	25							O ₂		“		“		“	“	
		26	-2 mA						“	O ₃	“	“	“		“	“	
		27		-2 mA					“	O ₄	“	“	“		“	“	
		28			-2 mA				“	O ₅	“	“	“		“	“	
		29				-2 mA			“	I/O ₆	“	“	“		“	“	
		30					-2 mA		“	I/O ₇	“	“	“		“	“	
		31						5.5 V	CLOCK		-0.25		-0.25		-0.25	mA	
		32							“	I ₀		“		“		“	“
I _{IL}	3009	33							I ₁		“		“		“	“	
		34							“	I ₂		“		“		“	“
		35							“	I ₃		“		“		“	“
		36							“	I ₄		“		“		“	“
		37							“	I ₅		“		“		“	“
		38							“	I ₆		“		“		“	“
		39							“	I ₇		“		“		“	“
		40							“	OE		“		“		“	“
		41							“	I/O ₀		“		“		“	“
		42							“	I/O ₁		“		“		“	“
		43					0.4 V		“	I/O ₆		“		“		“	“
		44						0.4 V	“	I/O ₇		“		“		“	“

See footnotes at end of table.

TABLE III. Group A inspection for device type 04 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
			Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	I/O ₀	I/O ₁		O ₂	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																			Min	Max	Min	Max	Min		Max
I _{IH}	3010	45	2.7 V									GND					CLOCK		50		50		50	μA	
		46		2.7 V													I ₀		20		20		20	"	
		47			2.7 V												I ₁		"		"		"	"	
		48				2.7 V											I ₂		"		"		"	"	
		49					2.7 V										I ₃		"		"		"	"	
		50						2.7 V									I ₄		"		"		"	"	
		51							2.7 V								I ₅		"		"		"	"	
		52								2.7 V							I ₆		"		"		"	"	
		53									2.7 V						I ₇		"		"		"	"	
54												2.7 V			$\overline{\text{OE}}$		50		50		50	"			
I _I		55	5.5 V														CLOCK		0.2		0.2		0.2	mA	
		56		5.5 V													I ₀		0.1		0.1		0.1	"	
		57			5.5 V												I ₁		"		"		"	"	
		58				5.5 V											I ₂		"		"		"	"	
		59					5.5 V										I ₃		"		"		"	"	
		60						5.5 V									I ₄		"		"		"	"	
		61							5.5 V								I ₅		"		"		"	"	
		62								5.5 V							I ₆		"		"		"	"	
		63									5.5 V						I ₇		"		"		"	"	
		64											5.5 V				$\overline{\text{OE}}$		0.2		0.2		0.2	"	
I _O 11/		65												5.5 V			I/O ₀		0.1		0.1		0.1	"	
		66													5.5 V		I/O ₁		"		"		"	"	
		67															I/O ₆		"		"		"	"	
		68															I/O ₇		"		"		"	"	
		69	1/	1/	1/	1/	1/	1/	1/	1/	1/		1/ 6/	2.25 V			I/O ₀	-15	-125	-15	-125	-15	-125	"	
		70	"	"	"	"	"	"	"	"	"	"	"		2.25 V		I/O ₁	"	"	"	"	"	"	"	
		71	"	"	"	"	"	"	"	"	"	"	"			2.25 V	O ₂	"	"	"	"	"	"	"	
		72	"	"	"	"	"	"	"	"	"	"	"	"			O ₃	"	"	"	"	"	"	"	
		73	"	"	"	"	"	"	"	"	"	"	"	"			O ₄	"	"	"	"	"	"	"	
		74	"	"	"	"	"	"	"	"	"	"	"	"			O ₅	"	"	"	"	"	"	"	
I _{OZH}		75	"	"	"	"	"	"	"	"	"	"	"	"			I/O ₆	"	"	"	"	"	"	"	
		76	"	"	"	"	"	"	"	"	"	"	"	"			I/O ₇	"	"	"	"	"	"	"	
		77	"	"	"	"	"	"	"	"	"	"	"	1/ 7/	2.7 V		I/O ₀		100		100		100	μA	
		78	"	"	"	"	"	"	"	"	"	"	"		2.7 V		I/O ₁		100		100		100	"	
		79	"	"	"	"	"	"	"	"	"	"	"			2.7 V	O ₂		20		20		20	"	
		80	"	"	"	"	"	"	"	"	"	"	"	"			O ₃		"		"		"	"	
		81	"	"	"	"	"	"	"	"	"	"	"	"			O ₄		"		"		"	"	
		82	"	"	"	"	"	"	"	"	"	"	"	"			O ₅		"		"		"	"	
		83	"	"	"	"	"	"	"	"	"	"	"	"			I/O ₆		100		100		100	"	
		84	"	"	"	"	"	"	"	"	"	"	"	"			I/O ₇		100		100		100	"	
I _{OZL}		85	"	"	"	"	"	"	"	"	"	"	"	"		0.4 V	O ₂		-20		-20		-20	"	
		86	"	"	"	"	"	"	"	"	"	"	"	"			O ₃		"		"		"	"	
		87	"	"	"	"	"	"	"	"	"	"	"	"			O ₄		"		"		"	"	
		88	"	"	"	"	"	"	"	"	"	"	"	"			O ₅		"		"		"	"	
I _{CC}	3005	89														V _{CC}		190		190		190	mA		

See footnotes at end of table.

TABLE III. Group A inspection for device type 04 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit	
			Test No.	O ₃	O ₄	O ₅	I/O ₆	I/O ₇		V _{CC}	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
											Min	Max	Min	Max	Min		Max
I _{IH}	3010	45						5.5 V	CLOCK		50		50		50	μA	
		46							I ₀		20		20		20	"	
		47							I ₁							"	
		48							I ₂							"	
		49							I ₃							"	
		50							I ₄							"	
		51							I ₅							"	
		52							I ₆							"	
		53							I ₇							"	
54								$\overline{\text{OE}}$		50		50		50	"		
I _I		55							CLOCK		0.2		0.2		0.2	mA	
		56							I ₀		0.1		0.1		0.1	"	
		57							I ₁							"	
		58							I ₂							"	
		59							I ₃							"	
		60							I ₄							"	
		61							I ₅							"	
		62							I ₆							"	
		63							I ₇							"	
		64								$\overline{\text{OE}}$		0.2		0.2		0.2	"
		65								I/O ₀		0.1		0.1		0.1	"
		66								I/O ₁							"
		67					5.5 V			I/O ₆							"
		68						5.5 V		I/O ₇							"
		69								I/O ₀	-15	-125	-15	-125	-15	-125	"
I _O 11/		70							I/O ₁	"	"	"	"	"	"	"	
		71							O ₂	"	"	"	"	"	"	"	
		72	2.25 V						O ₃	"	"	"	"	"	"	"	
		73		2.25 V					O ₄	"	"	"	"	"	"	"	
		74			2.25 V				O ₅	"	"	"	"	"	"	"	
		75				2.25 V			I/O ₆	"	"	"	"	"	"	"	
		76					2.25 V		I/O ₇	"	"	"	"	"	"	"	
		77							I/O ₀		100		100		100	μA	
I _{OZH}		78							I/O ₁		100		100		100	"	
		79							O ₂		20		20		20	"	
		80	2.7 V						O ₃							"	
		81		2.7 V					O ₄							"	
		82			2.7 V				O ₅							"	
		83				2.7 V			I/O ₆		100		100		100	"	
		84					2.7 V		I/O ₇		100		100		100	"	
		85							O ₂		-20		-20		-20	"	
I _{OZL}		86	0.4 V						O ₃							"	
		87		0.4 V					O ₄							"	
		88			0.4 V				O ₅							"	
																"	
I _{CC}	3005	89							V _{CC}		190		190		190	mA	

See footnotes at end of table.

TABLE III. Group A inspection for device type 04 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
			Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	I/O ₁	I/O ₁		O ₂	Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C		
																			Min	Max	Min	Max	Min		Max
Functional tests	3014	90	2/	2/	2/	2/	2/	2/	2/	2/	2/	GND	2/	2/	2/	2/	All outputs		2/		2/		2/		
																		Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C			
																		Min	Max	Min	Max	Min	Max		
t _{SU} 10/	3003	91	3/	3/	3/	3/	3/	3/	3/	3/	3/	GND	6/			4/ 8/	All register outputs	20		20		20		ns	
t _{P(CL)} 10/		92	"	"	"	"	"	"	"	"	"	"	"			"	"	12		12		12		"	
t _{PCL}		93	"	"	"	"	"	"	"	"	"	"	"			"	"		15		15		15	"	
t _{PCH}		94	"	"	"	"	"	"	"	"	"	"	"			"	"		15		15		15	"	
t _{PHL}		95	"	"	"	"	"	"	"	"	"	"	"		4/ 5/	4/ 5/		All I/O's		20		20		20	"
t _{PLH}		96	"	"	"	"	"	"	"	"	"	"	"		4/ 5/	4/ 5/		All I/O's		20		20		20	"
t _{PZH}		97	"	"	"	"	"	"	"	"	"	"	"	3/			4/ 8/	All register outputs		15		15		15	"
t _{PZL}		98	"	"	"	"	"	"	"	"	"	"	"	"			"	"		"		"		"	"
t _{PHZ}		99	"	"	"	"	"	"	"	"	"	"	"	"			"	"		"		"		"	"
t _{PLZ}		100	"	"	"	"	"	"	"	"	"	"	"	"			"	"		"		"		"	"
t _{PZH}		101	"	"	"	"	"	"	"	"	"	"	"		4/ 5/	4/ 5/		All I/O's		20		20		20	"
t _{PZL}		102	"	"	"	"	"	"	"	"	"	"	"		"	"		"		"		"		"	"
t _{PHZ}		103	"	"	"	"	"	"	"	"	"	"	"		"	"		"		"		"		"	"
t _{PLZ}		104	"	"	"	"	"	"	"	"	"	"	"		"	"		"		"		"		"	"
f _{MAX}			105	9/	9/	9/	9/	9/	9/	9/	9/	9/	"	6/			9/	All register outputs	40		40		40		MHz

See footnotes at end of table.

TABLE III. Group A inspection for device type 04 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminals	Test limits						Unit
		Test No.	O ₃	O ₄	O ₅	I/O ₆	I/O ₇	V _{CC}		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
Functional tests	3014	90	2/	2/	2/	2/	2/	5.5 V	All outputs		2/		2/		2/	
										Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
<u>t_{SU}</u> 10/	3003	91	4/ 8/	4/ 8/	4/ 8/			3/	All register outputs	20		20		20		ns
t _{P(CL)} 10/		92	"	"	"			"	"	12		12		12		"
t _{PCL}		93	"	"	"			"	"		15		15		15	"
t _{PCH}		94	"	"	"			"	"		15		15		15	"
t _{PHL}		95				4/ 5/	4/ 5/	"	All I/O's		20		20		20	"
t _{PLH}		96				4/ 5/	4/ 5/	"	All I/O's		20		20		20	"
t _{PZH}		97	4/ 8/	4/ 8/	4/ 8/			"	All register outputs		15		15		15	"
t _{PZL}		98	"	"	"			"	"		"		"		"	"
t _{PHZ}		99	"	"	"			"	"		"		"		"	"
t _{PLZ}		100	"	"	"			"	"		"		"		"	"
t _{PZH}		101				4/ 5/	4/ 5/	"	All I/O's		20		20		20	"
t _{PZL}		102				"	"	"	"		"		"		"	"
t _{PHZ}		103				"	"	"	"		"		"		"	"
t _{PLZ}		104				"	"	"	"		"		"		"	"
f _{MAX}		105	9/	9/	9/			4.5 V	All register outputs	40		40		40		MHz

See footnotes at end of table.

TABLE III. Group A inspection for device type 05.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
			Test No.	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	I ₈	GND	I ₉	O ₀	I/O ₁		I/O ₂	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																			Min	Max	Min	Max	Min		Max
V _{IC}		1	-18 mA									GND					I ₀		-1.5		-1.5		-1.5	V	
		2		-18 mA													I ₁								
		3			-18 mA												I ₂								
		4				-18 mA											I ₃								
		5					-18 mA										I ₄								
		6						-18 mA									I ₅								
		7							-18 mA								I ₆								
		8								-18 mA							I ₇								
		9									-18 mA						I ₈								
		10										-18 mA					I ₉								
		11											-18 mA			-18 mA	I/O ₁								
		12												-18 mA			I/O ₂								
		13													-18 mA		I/O ₃								
		14														-18 mA	I/O ₄								
		15															I/O ₅								
		16															I/O ₆								
V _{OL}	3007	17	1/	1/	1/	1/	1/	1/	1/	1/	1/		1/	12 mA			O ₀		0.5		0.5		0.5		
		18													12 mA		I/O ₁								
		19														12 mA	I/O ₂								
		20															I/O ₃								
		21															I/O ₄								
		22															I/O ₅								
		23															I/O ₆								
		24															O ₇								
V _{OH}	3006	25												-2 mA			O ₀	2.4		2.4		2.4			
		26													-2 mA		I/O ₁								
		27														-2 mA	I/O ₂								
		28															I/O ₃								
		29															I/O ₄								
		30															I/O ₅								
		31															I/O ₆								
		32															O ₇								
I _{IL}	3009	33	0.4 V														I ₀		-0.25		-0.25		-0.25	mA	
		34		0.4 V													I ₁								
		35			0.4 V												I ₂								
		36				0.4 V											I ₃								
		37					0.4 V										I ₄								
		38						0.4 V									I ₅								
		39							0.4 V								I ₆								
		40								0.4 V							I ₇								
		41									0.4 V						I ₈								
		42										0.4 V					I ₉								
		43											0.4 V				I/O ₁								
		44												0.4 V			I/O ₂								
		45													0.4 V		I/O ₃								
		46														0.4 V	I/O ₄								
		47															I/O ₅								
		48															I/O ₆								

See footnotes at end of table.

TABLE III. Group A inspection for device type 05- Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit	
			Test No.	I/O ₃	I/O ₄	I/O ₅	I/O ₆	O ₇		V _{CC}	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
											Min	Max	Min	Max	Min		Max
V _{IC}		1						4.5 V	I ₀		-1.5		-1.5		-1.5	V	
		2							I ₁								
		3							I ₂								
		4							I ₃								
		5							I ₄								
		6							I ₅								
		7							I ₆								
		8							I ₇								
		9							I ₈								
		10							I ₉								
		11							I/O ₁								
		12							I/O ₂								
		13	-18 mA						I/O ₃								
		14		-18 mA					I/O ₄								
		15			-18 mA				I/O ₅								
		16				-18 mA			I/O ₆								
V _{OL}	3007	17							O ₀		0.5		0.5		0.5		
		18							I/O ₁								
		19							I/O ₂								
		20	12 mA						I/O ₃								
		21		12 mA					I/O ₄								
		22			12 mA				I/O ₅								
		23				12 mA			I/O ₆								
		24					12 mA		O ₇								
V _{OH}	3006	25							O ₀	2.4		2.4		2.4			
		26							I/O ₁								
		27							I/O ₂								
		28	-2 mA						I/O ₃								
		29		-2 mA					I/O ₄								
		30			-2 mA				I/O ₅								
		31				-2 mA			I/O ₆								
		32					-2 mA		O ₇								
I _{IL}	3009	33						5.5 V	I ₀		-0.25		-0.25		-0.25	mA	
		34							I ₁								
		35							I ₂								
		36							I ₃								
		37							I ₄								
		38							I ₅								
		39							I ₆								
		40							I ₇								
		41							I ₈								
		42							I ₉								
		43							I/O ₁								
		44							I/O ₂								
		45	0.4 V						I/O ₃								
		46		0.4 V					I/O ₄								
		47			0.4 V				I/O ₅								
		48				0.4 V			I/O ₆								

See footnotes at end of table.

TABLE III. Group A inspection for device type 05 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
																		Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C			
																		Min	Max	Min	Max	Min	Max		
I _{IH}	3010	49	2.7 V									GND					I ₀		50		50		50	μA	
		50		2.7 V								"					I ₁		20		20		20	"	
		51			2.7 V							"					I ₂		"		"		"	"	
		52				2.7 V						"					I ₃		"		"		"	"	
		53					2.7 V					"					I ₄		"		"		"	"	
		54						2.7 V				"					I ₅		"		"		"	"	
		55							2.7 V			"					I ₆		"		"		"	"	
		56								2.7 V		"					I ₇		"		"		"	"	
		57									2.7 V	"					I ₈		"		"		"	"	
58										"	2.7 V				I ₉		50		50		50	"			
I _I		59	5.5 V														I ₀		0.2		0.2		0.2	mA	
		60		5.5 V													I ₁		0.1		0.1		0.1	"	
		61			5.5 V												I ₂		"		"		"	"	
		62				5.5 V											I ₃		"		"		"	"	
		63					5.5 V										I ₄		"		"		"	"	
		64						5.5 V									I ₅		"		"		"	"	
		65							5.5 V								I ₆		"		"		"	"	
		66								5.5 V							I ₇		"		"		"	"	
		67									5.5 V						I ₈		"		"		"	"	
		68										5.5 V					I ₉		0.2		0.2		0.2	"	
		69											5.5 V			5.5 V	I/O ₁		0.1		0.1		0.1	"	
		70													5.5 V	I/O ₂		"		"		"	"	"	
		71														5.5 V	I/O ₃		"		"		"	"	"
		72															I/O ₄		"		"		"	"	"
		73															I/O ₅		"		"		"	"	"
		74															I/O ₆		"		"		"	"	"
I _O 11/		75	1/	1/	1/	1/	1/	1/	1/	1/	1/	"	1/	2.25 V			O ₀	-15	-125	-15	-125	-15	-125	"	
		76	"	"	"	"	"	"	"	"	"	"	"		2.25 V		I/O ₁	"	"	"	"	"	"	"	
		77	"	"	"	"	"	"	"	"	"	"	"			2.25 V	I/O ₂	"	"	"	"	"	"	"	
		78	"	"	"	"	"	"	"	"	"	"	"				I/O ₃	"	"	"	"	"	"	"	
		79	"	"	"	"	"	"	"	"	"	"	"				I/O ₄	"	"	"	"	"	"	"	
		80	"	"	"	"	"	"	"	"	"	"	"				I/O ₅	"	"	"	"	"	"	"	
		81	"	"	"	"	"	"	"	"	"	"	"				I/O ₆	"	"	"	"	"	"	"	
		82	"	"	"	"	"	"	"	"	"	"	"				O ₇	"	"	"	"	"	"	"	
I _{OZH}		83	"	"	"	"	"	"	"	"	"	"	"		2.7 V		O ₀		20		20		20	μA	
		84	"	"	"	"	"	"	"	"	"	"	"			2.7 V	I/O ₁		100		100		100	"	
		85	"	"	"	"	"	"	"	"	"	"	"				I/O ₂		"		"		"	"	
		86	"	"	"	"	"	"	"	"	"	"	"				I/O ₃		"		"		"	"	
		87	"	"	"	"	"	"	"	"	"	"	"				I/O ₄		"		"		"	"	
		88	"	"	"	"	"	"	"	"	"	"	"				I/O ₅		"		"		"	"	
		89	"	"	"	"	"	"	"	"	"	"	"				I/O ₆		"		"		"	"	
		90	"	"	"	"	"	"	"	"	"	"	"				O ₇		20		20		20	"	
I _{OZL}		91	"	"	"	"	"	"	"	"	"	"		0.4 V		O ₀		-20		-20		-20	"		
		92	"	"	"	"	"	"	"	"	"	"	"				O ₇		-20		-20		-20	"	
I _{CC}	3005	93										"				V _{CC}		105		105		105	mA		

See footnotes at end of table.

TABLE III. Group A inspection for device type 05 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit
		Test No.	I/O ₃	I/O ₄	I/O ₅	I/O ₆	O ₇	V _{CC}		Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
I _{IH}	3010	49						5.5 V	I ₀		50		50		50	μA
		50							I ₁		20		20		20	"
		51							I ₂		"		"		"	"
		52							I ₃		"		"		"	"
		53							I ₄		"		"		"	"
		54							I ₅		"		"		"	"
		55							I ₆		"		"		"	"
		56							I ₇		"		"		"	"
		57							I ₈		"		"		"	"
I _I		58							I ₉		50		50		50	"
		59							I ₀		0.2		0.2		0.2	mA
		60							I ₁		0.1		0.1		0.1	"
		61							I ₂							"
		62							I ₃							"
		63							I ₄							"
		64							I ₅							"
		65							I ₆							"
		66							I ₇							"
		67							I ₈							"
		68							I ₉		0.2		0.2		0.2	"
		69							I/O ₁		0.1		0.1		0.1	"
		70							I/O ₂							"
		71	5.5 V						I/O ₃							"
		72		5.5 V					I/O ₄							"
		73			5.5 V				I/O ₅							"
I _O 11/		74				5.5 V			I/O ₆							"
		75							O ₀	-15	-125	-15	-125	-15	-125	"
		76							I/O ₁	"	"	"	"	"	"	"
		77							I/O ₂	"	"	"	"	"	"	"
		78	2.25 V						I/O ₃	"	"	"	"	"	"	"
		79		2.25 V					I/O ₄	"	"	"	"	"	"	"
		80			2.25 V				I/O ₅	"	"	"	"	"	"	"
		81				2.25 V			I/O ₆	"	"	"	"	"	"	"
		82					2.25 V		O ₇	"	"	"	"	"	"	"
		83							O ₀		20		20		20	μA
I _{OZH}		84							I/O ₁		100		100		100	"
		85							I/O ₂		"		"		"	"
		86	2.7 V						I/O ₃		"		"		"	"
		87		2.7 V					I/O ₄		"		"		"	"
		88			2.7 V				I/O ₅		"		"		"	"
		89				2.7 V			I/O ₆		"		"		"	"
		90					2.7 V		O ₇		20		20		20	"
		91						0.4 V	O ₀		-20		-20		-20	"
I _{OZL}		92						O ₇		-20		-20		-20	"	
		93							V _{CC}		105		105		105	mA

See footnotes at end of table.

TABLE III. Group A inspection for device type 05 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2 Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit
			I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	I ₈	GND	I ₉	O ₀	I/O ₁	I/O ₂		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C		
																		Min	Max	Min	Max	Min	Max	
Functional tests	3014	94	2/	2/	2/	2/	2/	2/	2/	2/	2/	GND	2/	2/	2/	2/	All outputs		2/		2/		2/	
																		Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C		
																		Min	Max	Min	Max	Min	Max	
t _{PHL}	3003	95	3/	3/	3/	3/	3/	3/	3/	3/	3/	GND	3/	4/ 5/	4/ 5/	4/ 5/	All outputs		30		30		30	ns
t _{PLH}		96	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"
t _{PZH}		97	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"
t _{PZL}		98	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"
t _{PHZ}		99	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"
t _{PLZ}		100	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"

See footnotes at end of table.

TABLE III. Group A inspection for device type 05 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminals	Test limits						Unit
		Test No.	I/O ₃	I/O ₄	I/O ₅	I/O ₆	O ₇	V _{CC}		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
Functional tests	3014	94	2/	2/	2/	2/	2/	5.5 V	All outputs		2/		2/		2/	
										Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
t _{PHL}	3003	95	4/ 5/	4/ 5/	4/ 5/	4/ 5/	4/ 5/	3/	All outputs		30		30		30	ns
t _{PLH}		96	"	"	"	"	"	"	"	"	"		"		"	"
t _{PZH}		97	"	"	"	"	"	"	"	"	"		"		"	"
t _{PZL}		98	"	"	"	"	"	"	"	"	"		"		"	"
t _{PHZ}		99	"	"	"	"	"	"	"	"	"		"		"	"
t _{PLZ}		100	"	"	"	"	"	"	"	"	"		"		"	"

See footnotes at end of table.

TABLE III. Group A inspection for device type 06.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2 Test No.	1 CLK	2 I ₀	3 I ₁	4 I ₂	5 I ₃	6 I ₄	7 I ₅	8 I ₆	9 I ₇	10 GND	11 $\overline{\text{OE}}$	12 O ₀	13 O ₁	14 O ₂	Meas. terminal	Test limits						Unit
																		Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																		Min	Max	Min	Max	Min	Max	
V _{IC}		1	-18 mA														CLOCK		-1.5		-1.5		-1.5	V
		2		-18 mA													I ₀							
		3			-18 mA												I ₁							
		4				-18 mA											I ₂							
		5					-18 mA										I ₃							
		6						-18 mA									I ₄							
		7							-18 mA								I ₅							
		8									-18 mA						I ₆							
		9										-18 mA					I ₇							
		10											-18 mA				$\overline{\text{OE}}$							
V _{OL}	3007	11	1/	1/	1/	1/	1/	1/	1/	1/	1/		1/ 6/	12 mA			O ₀		0.5		0.5		0.5	
		12													12 mA		O ₁							
		13														12 mA	O ₂							
		14															O ₃							
		15															O ₄							
		16															O ₅							
		17															O ₆							
		18															O ₇							
		19													-2 mA		O ₀	2.4		2.4		2.4		
V _{OH}	3006	20														-2 mA	O ₁							
		21														-2 mA	O ₂							
		22															O ₃							
		23															O ₄							
		24															O ₅							
		25															O ₆							
		26															O ₇							
		27	0.4 V														CLOCK		-0.25		-0.25		-0.25	mA
		28		0.4 V													I ₀							
I _{IL}	3009	29			0.4 V												I ₁							
		30				0.4 V											I ₂							
		31					0.4 V										I ₃							
		32						0.4 V									I ₄							
		33							0.4 V								I ₅							
		34								0.4 V							I ₆							
		35									0.4 V						I ₇							
		36											0.4 V				$\overline{\text{OE}}$							

See footnotes at end of table.

x

TABLE III. Group A inspection for device type 06 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit
		Test No.	O ₃	O ₄	O ₅	O ₆	O ₇	V _{CC}		Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
V _{IC}		1						4.5 V	CLOCK		-1.5		-1.5		-1.5	V
		2						"	I ₀		"		"		"	"
		3						"	I ₁		"		"		"	"
		4						"	I ₂		"		"		"	"
		5						"	I ₃		"		"		"	"
		6						"	I ₄		"		"		"	"
		7						"	I ₅		"		"		"	"
		8						"	I ₆		"		"		"	"
		9						"	I ₇		"		"		"	"
		10						"	OE		"		"		"	"
V _{OL}	3007	11						"	O ₀		0.5		0.5		0.5	"
		12						"	O ₁		"		"		"	"
		13						"	O ₂		"		"		"	"
		14	12 mA					"	O ₃		"		"		"	"
		15		12 mA				"	O ₄		"		"		"	"
		16			12 mA			"	O ₅		"		"		"	"
		17				12 mA		"	O ₆		"		"		"	"
		18					12 mA	"	O ₇		"		"		"	"
V _{OH}	3006	19						"	O ₀	2.4		2.4		2.4		"
		20						"	O ₁	"		"		"		"
		21						"	O ₂	"		"		"		"
		22	-2 mA					"	O ₃	"		"		"		"
		23		-2 mA				"	O ₄	"		"		"		"
		24			-2 mA			"	O ₅	"		"		"		"
		25				-2 mA		"	O ₆	"		"		"		"
		26					-2 mA	"	O ₇	"		"		"		"
I _{IL}	3009	27						5.5 V	CLOCK		-0.25		-0.25		-0.25	mA
		28						"	I ₀		"		"		"	"
		29						"	I ₁		"		"		"	"
		30						"	I ₂		"		"		"	"
		31						"	I ₃		"		"		"	"
		32						"	I ₄		"		"		"	"
		33						"	I ₅		"		"		"	"
		34						"	I ₆		"		"		"	"
		35						"	I ₇		"		"		"	"
		36						"	OE		"		"		"	"

See footnotes at end of table.

TABLE III. Group A inspection for device type 06 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
			Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	O ₀	O ₁		O ₂	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																			Min	Max	Min	Max	Min		Max
I _{IH}	3010	37	2.7 V									GND					CLOCK		50		50		50	μA	
		38		2.7 V													I ₀		20		20		20	"	
		39			2.7 V												I ₁		"		"		"	"	
		40				2.7 V											I ₂		"		"		"	"	
		41					2.7 V										I ₃		"		"		"	"	
		42						2.7 V									I ₄		"		"		"	"	
		43							2.7 V								I ₅		"		"		"	"	
		44									2.7 V						I ₆		"		"		"	"	
		45										2.7 V					I ₇		"		"		"	"	
46												2.7 V			$\overline{\text{OE}}$		50		50		50	"			
I _I		47	5.5 V														CLOCK		0.2		0.2		0.2	mA	
		48		5.5 V													I ₀		0.1		0.1		0.1	"	
		49			5.5 V												I ₁		"		"		"	"	
		50				5.5 V											I ₂		"		"		"	"	
		51					5.5 V										I ₃		"		"		"	"	
		52						5.5 V									I ₄		"		"		"	"	
		53							5.5 V								I ₅		"		"		"	"	
		54									5.5 V						I ₆		"		"		"	"	
		55										5.5 V					I ₇		"		"		"	"	
56												5.5 V			$\overline{\text{OE}}$		0.2		0.2		0.2	"			
I _O 11/		57	1/	1/	1/	1/	1/	1/	1/	1/	1/		1/ 6/	2.25 V			O ₀	-15	-125	-15	-125	-15	-125	"	
		58	"	"	"	"	"	"	"	"	"	"	"		2.25 V		O ₁	"	"	"	"	"	"	"	
		59	"	"	"	"	"	"	"	"	"	"	"			2.25 V	O ₂	"	"	"	"	"	"	"	
		60	"	"	"	"	"	"	"	"	"	"	"				O ₃	"	"	"	"	"	"	"	
		61	"	"	"	"	"	"	"	"	"	"	"				O ₄	"	"	"	"	"	"	"	
		62	"	"	"	"	"	"	"	"	"	"	"				O ₅	"	"	"	"	"	"	"	
		63	"	"	"	"	"	"	"	"	"	"	"				O ₆	"	"	"	"	"	"	"	
		64	"	"	"	"	"	"	"	"	"	"	"				O ₇	"	"	"	"	"	"	"	
		65	"	"	"	"	"	"	"	"	"	"	"	1/ 7/	2.7 V		O ₀		20		20		20	μA	
I _{OZH}		66	"	"	"	"	"	"	"	"	"	"	"		2.7 V		O ₁		"		"		"	"	
		67	"	"	"	"	"	"	"	"	"	"	"			2.7 V	O ₂		"		"		"	"	
		68	"	"	"	"	"	"	"	"	"	"	"				O ₃		"		"		"	"	
		69	"	"	"	"	"	"	"	"	"	"	"				O ₄		"		"		"	"	
		70	"	"	"	"	"	"	"	"	"	"	"				O ₅		"		"		"	"	
		71	"	"	"	"	"	"	"	"	"	"	"				O ₆		"		"		"	"	
		72	"	"	"	"	"	"	"	"	"	"	"				O ₇		"		"		"	"	
		I _{OZL}		73	"	"	"	"	"	"	"	"	"	"	"		0.4 V		O ₀		-20		-20		-20
74	"			"	"	"	"	"	"	"	"	"	"			0.4 V	O ₁		"		"		"	"	
75	"			"	"	"	"	"	"	"	"	"	"				O ₂		"		"		"	"	
76	"			"	"	"	"	"	"	"	"	"	"				O ₃		"		"		"	"	
77	"			"	"	"	"	"	"	"	"	"	"				O ₄		"		"		"	"	
78	"			"	"	"	"	"	"	"	"	"	"				O ₅		"		"		"	"	
79	"			"	"	"	"	"	"	"	"	"	"				O ₆		"		"		"	"	
80	"			"	"	"	"	"	"	"	"	"	"				O ₇		"		"		"	"	
I _{CC}	3005	81														V _{CC}		105		105		105	mA		

See footnotes at end of table.

TABLE III. Group A inspection for device type 06 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit							
										Test No.	O ₃	O ₄	O ₅	O ₆	O ₇		V _{CC}	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C	
																		Min	Max	Min	Max	Min	Max
I _{IH}	3010	37						5.5 V	CLOCK		50		50		50	μA							
		38							I ₀		20		20		20	"							
		39							I ₁		"		"		"	"							
		40							I ₂		"		"		"	"							
		41							I ₃		"		"		"	"							
		42							I ₄		"		"		"	"							
		43							I ₅		"		"		"	"							
		44							I ₆		"		"		"	"							
		45							I ₇		"		"		"	"							
46							OE		50		50		50	"									
I _I		47							CLOCK		0.2		0.2		0.2	mA							
		48							I ₀		0.1		0.1		0.1	"							
		49							I ₁		"		"		"	"							
		50							I ₂		"		"		"	"							
		51							I ₃		"		"		"	"							
		52							I ₄		"		"		"	"							
		53							I ₅		"		"		"	"							
		54							I ₆		"		"		"	"							
		55							I ₇		"		"		"	"							
56							OE		0.2		0.2		0.2	"									
I _O 11/		57							O ₀	-15	-125	-15	-125	-15	-125	"							
		58							O ₁	"	"	"	"	"	"	"							
		59							O ₂	"	"	"	"	"	"	"							
		60	2.25 V						O ₃	"	"	"	"	"	"	"							
		61		2.25 V					O ₄	"	"	"	"	"	"	"							
		62			2.25 V				O ₅	"	"	"	"	"	"	"							
		63				2.25 V			O ₆	"	"	"	"	"	"	"							
		64					2.25 V		O ₇	"	"	"	"	"	"	"							
		65						2.25 V	O ₀		20		20		20	μA							
I _{OZH}		66							O ₁		"		"		"	"							
		67							O ₂		"		"		"	"							
		68	2.7 V						O ₃		"		"		"	"							
		69		2.7 V					O ₄		"		"		"	"							
		70			2.7 V				O ₅		"		"		"	"							
		71				2.7 V			O ₆		"		"		"	"							
		72					2.7 V		O ₇		"		"		"	"							
		73							O ₀	-20		-20		-20		"							
		74							O ₁		"		"		"	"							
I _{OZL}		75							O ₂		"		"		"	"							
		76	0.4 V						O ₃		"		"		"	"							
		77		0.4 V					O ₄		"		"		"	"							
		78			0.4 V				O ₅		"		"		"	"							
		79				0.4 V			O ₆		"		"		"	"							
		80					0.4 V		O ₇		"		"		"	"							
		I _{CC}	3005	81						V _{CC}		105		105		105	mA						

See footnotes at end of table.

TABLE III. Group A inspection for device type 06 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2 Test No.	1 CLK	2 I ₀	3 I ₁	4 I ₂	5 I ₃	6 I ₄	7 I ₅	8 I ₆	9 I ₇	10 GND	11 $\overline{OE}$	12 O ₀	13 O ₁	14 O ₂	Meas. terminal	Test limits						Unit	
																		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C			
																		Min	Max	Min	Max	Min	Max		
Functional tests	3014	82	2/	2/	2/	2/	2/	2/	2/	2/	2/	GND	2/	2/	2/	2/	All outputs		2/		2/		2/		
																		Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C			
																		Min	Max	Min	Max	Min	Max		
t _{SU} 10/	3003	83	3/	3/	3/	3/	3/	3/	3/	3/	3/	GND	6/	4/ 8/	4/ 8/	4/ 8/	All register outputs	25		25		25		ns	
t _{P(CL)} 10/		84	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	20		20		20		"	
t _{PCH}		85	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		20		20		20	"	
t _{PCL}		86	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		20		20		20	"	
t _{PZH}		87	"	"	"	"	"	"	"	"	"	"	3/	"	"	"	"	"		25		25		25	"
t _{PZL}		88	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"
t _{PHZ}		89	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"
t _{PLZ}		90	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"
f _{MAX}		91	9/	9/	9/	9/	9/	9/	9/	9/	9/	9/	"	6/	9/	9/	9/	"	25		25		25		MHz

See footnotes at end of table.

TABLE III. Group A inspection for device type 06 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminals	Test limits						Unit	
		Test No.	O ₃	O ₄	O ₅	O ₆	O ₇	V _{CC}		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C			
										Min	Max	Min	Max	Min	Max		
Functional tests	3014	82	2/	2/	2/	2/	2/	5.5 V	All outputs		2/		2/		2/		
										Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C			
										Min	Max	Min	Max	Min	Max		
t _{SU} 10/	3003	83	4/ 8/	4/ 8/	4/ 8/	4/ 8/	4/ 8/	4/ 8/	3/	All register outputs	25		25		25		ns
t _{P(CL)} 10/		84	"	"	"	"	"	"	"	"	20		20		20		"
t _{PCH}		85	"	"	"	"	"	"	"	"		20		20		20	"
t _{PCL}		86	"	"	"	"	"	"	"	"		20		20		20	"
t _{PZH}		87	"	"	"	"	"	"	"	"		25		25		25	"
t _{PZL}		88	"	"	"	"	"	"	"	"		"		"		"	"
t _{PHZ}		89	"	"	"	"	"	"	"	"		"		"		"	"
t _{PLZ}		90	"	"	"	"	"	"	"	"		"		"		"	"
f _{MAX}		91	9/	9/	9/	9/	9/	9/	4.5 V	"	25		25		25		MHz

See footnotes at end of table.

TABLE III. Group A inspection for device type 07.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
			Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	I/O ₀	O ₁		O ₂	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																			Min	Max	Min	Max	Min		Max
V _{IC}		1	-18 mA									GND					CLOCK		-1.5		-1.5		-1.5	V	
		2		-18 mA													I ₀								
		3			-18 mA												I ₁								
		4				-18 mA											I ₂								
		5					-18 mA										I ₃								
		6						-18 mA									I ₄								
		7							-18 mA								I ₅								
		8								-18 mA							I ₆								
		9									-18 mA						I ₇								
		10											-18 mA				$\overline{\text{OE}}$								
		11												-18 mA			I/O ₀								
		12															I/O ₇								
V _{OL}	3007	13	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>		<u>1/ 6/</u>	12 mA			I/O ₀		0.5		0.5		0.5		
		14													12 mA		O ₁								
		15														12 mA	O ₂								
		16															O ₃								
		17															O ₄								
		18															O ₅								
		19															O ₆								
		20															I/O ₇								
V _{OH}	3006	21												-2 mA			I/O ₀	2.4		2.4		2.4			
		22													-2 mA		O ₁								
		23														-2 mA	O ₂								
		24															O ₃								
		25															O ₄								
		26															O ₅								
		27															O ₆								
		28															I/O ₇								
I _{IL}	3009	29	0.4 V														CLOCK		-0.25		-0.25		-0.25	mA	
		30		0.4 V													I ₀								
		31			0.4 V												I ₁								
		32				0.4 V											I ₂								
		33					0.4 V										I ₃								
		34						0.4 V									I ₄								
		35							0.4 V								I ₅								
		36								0.4 V							I ₆								
		37									0.4 V						I ₇								
		38											0.4 V				$\overline{\text{OE}}$								
		39												0.4 V			I/O ₀								
		40															I/O ₇								

See footnotes at end of table.

TABLE III. Group A inspection for device type 07 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit		
			Test No.	O ₃	O ₄	O ₅	O ₆	I/O ₇		V _{CC}	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C			
											Min	Max	Min	Max	Min		Max	
V _{IC}		1						4.5 V	CLOCK		-1.5		-1.5		-1.5	V		
		2							I ₀									
		3							I ₁									
		4							I ₂									
		5							I ₃									
		6							I ₄									
		7							I ₅									
		8							I ₆									
		9							I ₇									
		10							$\overline{\text{OE}}$									
		11							I/O ₀									
		12						-18 mA	I/O ₇									
V _{OL}	3007	13							I/O ₀	0.5		0.5		0.5				
		14							O ₁									
		15							O ₂									
		16	12 mA						O ₃									
		17		12 mA					O ₄									
		18			12 mA				O ₅									
		19				12 mA			O ₆									
		20					12 mA		I/O ₇									
		V _{OH}	3006	21							I/O ₀	2.4		2.4		2.4		
				22							O ₁							
23									O ₂									
24	-2 mA								O ₃									
25				-2 mA					O ₄									
26					-2 mA				O ₅									
27						-2 mA			O ₆									
28								-2 mA	I/O ₇									
I _{IL}	3009			29						5.5 V	CLOCK		-0.25		-0.25		-0.25	mA
				30							I ₀							
		31							I ₁									
		32							I ₂									
		33							I ₃									
		34							I ₄									
		35							I ₅									
		36							I ₆									
		37							I ₇									
		38							$\overline{\text{OE}}$									
		39							I/O ₀									
		40						0.4 V	I/O ₇									

See footnotes at end of table.

TABLE III. Group A inspection for device type 07 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
			Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	I/O ₀	O ₁		O ₂	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																			Min	Max	Min	Max	Min		Max
I _{IH}	3010	41	2.7 V									GND					CLOCK		50		50		50	μA	
		42		2.7 V								"					I ₀		20		20		20	"	
		43			2.7 V							"					I ₁		"		"		"	"	
		44				2.7 V						"					I ₂		"		"		"	"	
		45					2.7 V					"					I ₃		"		"		"	"	
		46						2.7 V				"					I ₄		"		"		"	"	
		47							2.7 V			"					I ₅		"		"		"	"	
		48									2.7 V						I ₆		"		"		"	"	
		49										2.7 V					I ₇		"		"		"	"	
50											"	2.7 V			$\overline{\text{OE}}$		50		50		50	"			
I _I		51	5.5 V									"					CLOCK		0.2		0.2		0.2	mA	
		52		5.5 V								"					I ₀		0.1		0.1		0.1	"	
		53			5.5 V							"					I ₁		"		"		"	"	
		54				5.5 V						"					I ₂		"		"		"	"	
		55					5.5 V					"					I ₃		"		"		"	"	
		56						5.5 V				"					I ₄		"		"		"	"	
		57							5.5 V			"					I ₅		"		"		"	"	
		58									5.5 V						I ₆		"		"		"	"	
		59										5.5 V					I ₇		"		"		"	"	
		60											"	5.5 V			$\overline{\text{OE}}$		0.2		0.2		0.2	"	
		61											"		5.5 V		I/O ₀		0.1		0.1		0.1	"	
		62											"				I/O ₇		0.1		0.1		0.1	"	
		63	1/	1/	1/	1/	1/	1/	1/	1/	1/	1/	"	1/ 6/	2.25 V		I/O ₀	-15	-125	-15	-125	-15	-125	"	
I _O 11/		64	"	"	"	"	"	"	"	"	"	"	"		2.25 V	O ₁	"	"	"	"	"	"	"	"	
		65	"	"	"	"	"	"	"	"	"	"	"			2.25 V	O ₂	"	"	"	"	"	"	"	
		66	"	"	"	"	"	"	"	"	"	"	"				O ₃	"	"	"	"	"	"	"	
		67	"	"	"	"	"	"	"	"	"	"	"				O ₄	"	"	"	"	"	"	"	
		68	"	"	"	"	"	"	"	"	"	"	"				O ₅	"	"	"	"	"	"	"	
		69	"	"	"	"	"	"	"	"	"	"	"				O ₆	"	"	"	"	"	"	"	
		70	"	"	"	"	"	"	"	"	"	"	"				I/O ₇	"	"	"	"	"	"	"	
		71	"	"	"	"	"	"	"	"	"	"	"	1/ 7/	2.7 V		I/O ₀		100		100		100	μA	
I _{OZH}		72	"	"	"	"	"	"	"	"	"	"	"			2.7 V	O ₁		20		20		20	"	
		73	"	"	"	"	"	"	"	"	"	"	"				O ₂		"		"		"	"	
		74	"	"	"	"	"	"	"	"	"	"	"				O ₃		"		"		"	"	
		75	"	"	"	"	"	"	"	"	"	"	"				O ₄		"		"		"	"	
		76	"	"	"	"	"	"	"	"	"	"	"				O ₅		"		"		"	"	
		77	"	"	"	"	"	"	"	"	"	"	"				O ₆		"		"		"	"	
		78	"	"	"	"	"	"	"	"	"	"	"				I/O ₇		100		100		100	"	
		79	"	"	"	"	"	"	"	"	"	"	"				O ₁		-20		-20		-20	"	
I _{OZL}		80	"	"	"	"	"	"	"	"	"	"	"		0.4 V	O ₂		"		"		"	"	"	
		81	"	"	"	"	"	"	"	"	"	"	"			0.4 V	O ₃		"		"		"	"	
		82	"	"	"	"	"	"	"	"	"	"	"				O ₄		"		"		"	"	
		83	"	"	"	"	"	"	"	"	"	"	"				O ₅		"		"		"	"	
		84	"	"	"	"	"	"	"	"	"	"	"				O ₆		"		"		"	"	
		I _{CC}	3005	85										"				V _{CC}		105		105		105	mA

See footnotes at end of table.

TABLE III. Group A inspection for device type 07 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit
		Test No.	O ₃	O ₄	O ₅	O ₆	I/O ₇	V _{CC}		Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
I _{IH}	3010	41						5.5 V	CLOCK		50		50		50	μA
		42							I ₀		20		20		20	"
		43							I ₁		"		"		"	"
		44							I ₂		"		"		"	"
		45							I ₃		"		"		"	"
		46							I ₄		"		"		"	"
		47							I ₅		"		"		"	"
		48							I ₆		"		"		"	"
		49							I ₇		"		"		"	"
		50							OE		50		50		50	"
I _I		51							CLOCK		0.2		0.2		0.2	mA
		52							I ₀		0.1		0.1		0.1	"
		53							I ₁		"		"		"	"
		54							I ₂		"		"		"	"
		55							I ₃		"		"		"	"
		56							I ₄		"		"		"	"
		57							I ₅		"		"		"	"
		58							I ₆		"		"		"	"
		59							I ₇		"		"		"	"
		60							OE		0.2		0.2		0.2	"
		61							I/O ₀		0.1		0.1		0.1	"
		62						5.5 V	I/O ₇		0.1		0.1		0.1	"
		63							I/O ₀	-15	-125	-15	-125	-15	-125	"
		64							O ₁	"	"	"	"	"	"	"
65							O ₂	"	"	"	"	"	"	"		
66	2.25 V						O ₃	"	"	"	"	"	"	"		
67		2.25 V					O ₄	"	"	"	"	"	"	"		
68			2.25 V				O ₅	"	"	"	"	"	"	"		
69				2.25 V			O ₆	"	"	"	"	"	"	"		
70					2.25 V		I/O ₇	"	"	"	"	"	"	"		
I _{OZH}		71							I/O ₀		100		100		100	μA
		72							O ₁		20		20		20	"
		73							O ₂		"		"		"	"
		74	2.7 V						O ₃		"		"		"	"
		75		2.7 V					O ₄		"		"		"	"
		76			2.7 V				O ₅		"		"		"	"
		77				2.7 V			O ₆		"		"		"	"
		78					2.7 V		I/O ₇		100		100		100	"
I _{OZL}		79							O ₁		-20		-20		-20	"
		80							O ₂		"		"		"	"
		81	0.4 V						O ₃		"		"		"	"
		82		0.4 V					O ₄		"		"		"	"
		83			0.4 V				O ₅		"		"		"	"
		84				0.4 V			O ₆		"		"		"	"
I _{CC}	3005	85						"	V _{CC}		105		105		105	mA

See footnotes at end of table.

TABLE III. Group A inspection for device type 07 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
			Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	I/O ₀	O ₁		O ₂	Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C		
																			Min	Max	Min	Max	Min		Max
Functional tests	3014	86	2/	2/	2/	2/	2/	2/	2/	2/	2/	GND	2/	2/	2/	2/	All outputs		2/		2/		2/		
																		Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C			
																		Min	Max	Min	Max	Min	Max		
t _{SU} 10/	3003	87	3/	3/	3/	3/	3/	3/	3/	3/	3/	GND	6/		4/ 8/	4/ 8/	All register outputs	25		25		25		ns	
t _{P(CL)} 10/		88	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	20		20		20		"	
t _{PCL}		89	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		20		20		20	"	
t _{PCH}		90	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		20		20		20	"	
t _{PHL}		91	"	"	"	"	"	"	"	"	"	"	"		4/ 5/		All I/O's		30		30		30	"	
t _{PLH}		92	"	"	"	"	"	"	"	"	"	"	"		4/ 5/		All I/O's		30		30		30	"	
t _{PZH}		93	"	"	"	"	"	"	"	"	"	"	3/		4/ 8/	4/ 8/	All register outputs		25		25		25	"	
t _{PZL}		94	"	"	"	"	"	"	"	"	"	"	"	"		"	"		"		"		"	"	
t _{PHZ}		95	"	"	"	"	"	"	"	"	"	"	"	"		"	"	"		"		"		"	"
t _{PLZ}		96	"	"	"	"	"	"	"	"	"	"	"	"		"	"	"		"		"		"	"
t _{PZH}		97	"	"	"	"	"	"	"	"	"	"	"	"	4/ 5/		All I/O's		30		30		30	"	
t _{PZL}		98	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"		"	"	
t _{PHZ}		99	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"		"	"	
t _{PLZ}		100	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"		"	"	
f _{MAX}			101	9/	9/	9/	9/	9/	9/	9/	9/	9/	"	6/		9/	9/	All register outputs	25		25		25		MHz

See footnotes at end of table.

TABLE III. Group A inspection for device type 07 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminals	Test limits						Unit
		Test No.	O ₃	O ₄	O ₅	O ₆	I/O ₇	V _{CC}		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
Functional tests	3014	86	2/	2/	2/	2/	2/	5.5 V	All outputs		2/		2/		2/	
										Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
t _{SIU} 10/	3003	87	4/ 8/	4/ 8/	4/ 8/	4/ 8/		3/	All register outputs	25		25		25		ns
t _{P(CL)} 10/		88	"	"	"	"	"	"	"	20		20		20		"
t _{PCL}		89	"	"	"	"	"	"	"		20		20		20	"
t _{PCH}		90	"	"	"	"	"	"	"		20		20		20	"
t _{PHL}		91					4/ 5/	"	All I/O's		30		30		30	"
t _{PLH}		92					4/ 5/	"	All I/O's		30		30		30	"
t _{PZH}		93	4/ 8/	4/ 8/	4/ 8/	4/ 8/		"	All register outputs		25		25		25	"
t _{PZL}		94	"	"	"	"		"	"		"		"		"	"
t _{PHZ}		95	"	"	"	"	"	"	"		"		"		"	"
t _{PLZ}		96	"	"	"	"		"	"		"		"		"	"
t _{PZH}		97					4/ 5/	"	All I/O's		30		30		30	"
t _{PZL}		98					"	"	"		"		"		"	"
t _{PHZ}		99					"	"	"		"		"		"	"
t _{PLZ}		100					"	"	"		"		"		"	"
f _{MAX}			101	9/	9/	9/	9/		4.5 V	All register outputs	25		25		25	

See footnotes at end of table.

TABLE III. Group A inspection for device type 08.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
			Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	I/O ₀	I/O ₁		O ₂	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																			Min	Max	Min	Max	Min		Max
V _{IC}		1	-18 mA									GND					CLOCK		-1.5		-1.5		-1.5	V	
		2		-18 mA													I ₀								
		3			-18 mA												I ₁								
		4				-18 mA											I ₂								
		5					-18 mA										I ₃								
		6						-18 mA									I ₄								
		7							-18 mA								I ₅								
		8								-18 mA							I ₆								
		9									-18 mA						I ₇								
		10											-18 mA				$\overline{\text{OE}}$								
		11												-18 mA			I/O ₀								
		12													-18 mA		I/O ₁								
		13															I/O ₆								
		14															I/O ₇								
V _{OL}	3007	15	$\frac{1}{1}$	$\frac{1}{1}$	$\frac{1}{1}$	$\frac{1}{1}$	$\frac{1}{1}$	$\frac{1}{1}$	$\frac{1}{1}$	$\frac{1}{1}$	$\frac{1}{1}$		$\frac{1}{1}$ $\frac{6}{6}$	12 mA			I/O ₀		0.5		0.5		0.5		
		16													12 mA		I/O ₁								
		17															O ₂								
		18															O ₃								
		19															O ₄								
		20															O ₅								
		21															I/O ₆								
		22															I/O ₇								
		23													-2 mA		I/O ₀	2.4		2.4		2.4			
		24														-2 mA	I/O ₁								
V _{OH}	3006	25															O ₂								
		26															O ₃								
		27															O ₄								
		28															O ₅								
		29															I/O ₆								
		30															I/O ₇								
		31	0.4 V														CLOCK		-0.25		-0.25		-0.25	mA	
		32		0.4 V													I ₀								
		33			0.4 V												I ₁								
		34				0.4 V											I ₂								
I _{IL}	3009	35					0.4 V										I ₃								
		36						0.4 V									I ₄								
		37							0.4 V								I ₅								
		38								0.4 V							I ₆								
		39									0.4 V						I ₇								
		40												0.4 V			$\overline{\text{OE}}$								
		41													0.4 V		I/O ₀								
		42														0.4 V	I/O ₁								
		43															I/O ₆								
		44															I/O ₇								

See footnotes at end of table.

TABLE III. Group A inspection for device type 08 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit	
			Test No.	O ₃	O ₄	O ₅	I/O ₆	I/O ₇		V _{CC}	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
											Min	Max	Min	Max	Min		Max
V _{IC}		1						4.5 V	CLOCK		-1.5		-1.5		-1.5	V	
		2							I ₀								
		3							I ₁								
		4							I ₂								
		5							I ₃								
		6							I ₄								
		7							I ₅								
		8							I ₆								
		9							I ₇								
		10							$\overline{\text{OE}}$								
		11							I/O ₀								
		12							I/O ₁								
		13					-18 mA		I/O ₆								
		14						-18 mA	I/O ₇								
V _{OL}	3007	15							I/O ₀		0.5		0.5		0.5		
		16							I/O ₁								
		17							O ₂								
		18	12 mA						O ₃								
		19		12 mA					O ₄								
		20			12 mA				O ₅								
		21				12 mA			I/O ₆								
		22					12 mA		I/O ₇								
		23							I/O ₀	2.4		2.4		2.4			
		24							I/O ₁								
V _{OH}	3006	25							O ₂								
		26	-2 mA						O ₃								
		27		-2 mA					O ₄								
		28			-2 mA				O ₅								
		29				-2 mA			I/O ₆								
		30					-2 mA		I/O ₇								
I _{IL}	3009	31						5.5 V	CLOCK		-0.25		-0.25		-0.25	mA	
		32							I ₀								
		33							I ₁								
		34							I ₂								
		35							I ₃								
		36							I ₄								
		37							I ₅								
		38							I ₆								
		39							I ₇								
		40							$\overline{\text{OE}}$								
		41							I/O ₀								
		42							I/O ₁								
		43					0.4 V		I/O ₆								
		44						0.4 V	I/O ₇								

See footnotes at end of table.

TABLE III. Group A inspection for device type 08 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit
																		Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																		Min	Max	Min	Max	Min	Max	
I _{IH}	3010	45	2.7 V									GND					CLOCK		50		50		50	μA
		46		2.7 V								"					I ₀		20		20		20	"
		47			2.7 V								"				I ₁		"		"		"	"
		48				2.7 V							"				I ₂		"		"		"	"
		49					2.7 V						"				I ₃		"		"		"	"
		50						2.7 V					"				I ₄		"		"		"	"
		51							2.7 V				"				I ₅		"		"		"	"
		52									2.7 V		"				I ₆		"		"		"	"
		53										2.7 V	"				I ₇		"		"		"	"
54											"	2.7 V			$\overline{\text{OE}}$		50		50		50	"		
I _I		55	5.5 V									"					CLOCK		0.2		0.2		0.2	mA
		56		5.5 V								"					I ₀		0.1		0.1		0.1	"
		57			5.5 V							"					I ₁		"		"		"	"
		58				5.5 V						"					I ₂		"		"		"	"
		59					5.5 V					"					I ₃		"		"		"	"
		60						5.5 V				"					I ₄		"		"		"	"
		61							5.5 V			"					I ₅		"		"		"	"
		62									5.5 V	"					I ₆		"		"		"	"
		63										5.5 V	"				I ₇		"		"		"	"
		64											"	5.5 V			$\overline{\text{OE}}$		0.2		0.2		0.2	"
		65											"		5.5 V		I/O ₀		0.1		0.1		0.1	"
		66											"			5.5 V	I/O ₁		"		"		"	"
67											"				I/O ₆		"		"		"	"		
I _O 11/		69	1/	1/	1/	1/	1/	1/	1/	1/	1/	"	1/ 6/	2.25 V			I/O ₀	-15	-125	-15	-125	-15	-125	"
		70	"	"	"	"	"	"	"	"	"	"	"		2.25 V		I/O ₁	"	"	"	"	"	"	"
		71	"	"	"	"	"	"	"	"	"	"	"			2.25 V	O ₂	"	"	"	"	"	"	"
		72	"	"	"	"	"	"	"	"	"	"	"				O ₃	"	"	"	"	"	"	"
		73	"	"	"	"	"	"	"	"	"	"	"				O ₄	"	"	"	"	"	"	"
		74	"	"	"	"	"	"	"	"	"	"	"				O ₅	"	"	"	"	"	"	"
		75	"	"	"	"	"	"	"	"	"	"	"				I/O ₆	"	"	"	"	"	"	"
		76	"	"	"	"	"	"	"	"	"	"	"				I/O ₇	"	"	"	"	"	"	"
		77	"	"	"	"	"	"	"	"	"	"	"	1/ 7/	2.7 V		I/O ₀		100		100		100	μA
I _{OZH}		78	"	"	"	"	"	"	"	"	"	"	"		2.7 V		I/O ₁		100		100		100	"
		79	"	"	"	"	"	"	"	"	"	"	"			2.7 V	O ₂	20		20		20	"	
		80	"	"	"	"	"	"	"	"	"	"	"				O ₃							"
		81	"	"	"	"	"	"	"	"	"	"	"				O ₄							"
		82	"	"	"	"	"	"	"	"	"	"	"				O ₅							"
		83	"	"	"	"	"	"	"	"	"	"	"				I/O ₆	100		100		100	"	
		84	"	"	"	"	"	"	"	"	"	"	"				I/O ₇	100		100		100	"	
		I _{OZL}		85	"	"	"	"	"	"	"	"	"	"	"		0.4 V		O ₂		-20		-20	
86	"			"	"	"	"	"	"	"	"	"	"				O ₃							"
87	"			"	"	"	"	"	"	"	"	"	"				O ₄							"
88	"			"	"	"	"	"	"	"	"	"	"				O ₅							"
I _{CC}	3005	89										"				V _{CC}		105		105		105	mA	

See footnotes at end of table.

TABLE III. Group A inspection for device type 08 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit
		Test No.	O ₃	O ₄	O ₅	I/O ₆	I/O ₇	V _{CC}		Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
I _{IH}	3010	45						5.5 V	CLOCK		50		50		50	μA
		46							I ₀		20		20		20	"
		47							I ₁		"		"		"	"
		48							I ₂		"		"		"	"
		49							I ₃		"		"		"	"
		50							I ₄		"		"		"	"
		51							I ₅		"		"		"	"
		52							I ₆		"		"		"	"
		53							I ₇		"		"		"	"
							OE		50		50		50	"		
I _I		55							CLOCK		0.2		0.2		0.2	mA
		56							I ₀		0.1		0.1		0.1	"
		57							I ₁		"		"		"	"
		58							I ₂		"		"		"	"
		59							I ₃		"		"		"	"
		60							I ₄		"		"		"	"
		61							I ₅		"		"		"	"
		62							I ₆		"		"		"	"
		63							I ₇		"		"		"	"
		64							OE		0.2		0.2		0.2	"
		65							I/O ₀		0.1		0.1		0.1	"
		66							I/O ₁		"		"		"	"
		67					5.5 V		I/O ₆		"		"		"	"
		68						5.5 V	I/O ₇		"		"		"	"
		69							I/O ₀	-15	-125	-15	-125	-15	-125	"
I _O 11/		70							I/O ₁	"	"	"	"	"	"	"
		71							O ₂	"	"	"	"	"	"	"
		72	2.25 V						O ₃	"	"	"	"	"	"	"
		73		2.25 V					O ₄	"	"	"	"	"	"	"
		74			2.25 V				O ₅	"	"	"	"	"	"	"
		75				2.25 V			I/O ₆	"	"	"	"	"	"	"
		76					2.25 V		I/O ₇	"	"	"	"	"	"	"
		77							I/O ₀		100		100		100	μA
I _{OZH}		78							I/O ₁		100		100		100	"
		79							O ₂		20		20		20	"
		80	2.7 V						O ₃		"		"		"	"
		81		2.7 V					O ₄		"		"		"	"
		82			2.7 V				O ₅		"		"		"	"
		83				2.7 V			I/O ₆		100		100		100	"
		84					2.7 V		I/O ₇		100		100		100	"
		85							O ₂		-20		-20		-20	"
I _{OZL}		86	0.4 V						O ₃		"		"		"	"
		87		0.4 V					O ₄		"		"		"	"
		88			0.4 V				O ₅		"		"		"	"
I _{CC}	3005	89							V _{CC}		105		105		105	mA

See footnotes at end of table.

TABLE III. Group A inspection for device type 08 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
		Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	I/O ₀	I/O ₁	O ₂		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C			
																		Min	Max	Min	Max	Min	Max		
Functional tests	3014	90	2/	2/	2/	2/	2/	2/	2/	2/	2/	GND	2/	2/	2/	2/	All outputs		2/		2/		2/		
																		Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C			
																		Min	Max	Min	Max	Min	Max		
t _{SU} 10/	3003	91	3/	3/	3/	3/	3/	3/	3/	3/	3/	GND	6/			4/ 8/	All register outputs	25		25		25		ns	
t _{P(CL)} 10/		92	"	"	"	"	"	"	"	"	"	"	"			"	"	20		20		20		"	
t _{PCL}		93	"	"	"	"	"	"	"	"	"	"	"			"	"		20		20		20	"	
t _{PCH}		94	"	"	"	"	"	"	"	"	"	"	"			"	"		20		20		20	"	
t _{PHL}		95	"	"	"	"	"	"	"	"	"	"	"		4/ 5/	4/ 5/		All I/O's		30		30		30	"
t _{PLH}		96	"	"	"	"	"	"	"	"	"	"	"		4/ 5/	4/ 5/		All I/O's		30		30		30	"
t _{PZH}		97	"	"	"	"	"	"	"	"	"	"	"	3/			4/ 8/	All register outputs		25		25		25	"
t _{PZL}		98	"	"	"	"	"	"	"	"	"	"	"	"			"	"		"		"		"	"
t _{PHZ}		99	"	"	"	"	"	"	"	"	"	"	"	"			"	"		"		"		"	"
t _{PLZ}		100	"	"	"	"	"	"	"	"	"	"	"	"			"	"		"		"		"	"
t _{PZH}		101	"	"	"	"	"	"	"	"	"	"	"	"		4/ 5/	4/ 5/	All I/O's		30		30		30	"
t _{PZL}		102	"	"	"	"	"	"	"	"	"	"	"	"		"	"	"		"		"		"	"
t _{PHZ}		103	"	"	"	"	"	"	"	"	"	"	"	"		"	"	"		"		"		"	"
t _{PLZ}		104	"	"	"	"	"	"	"	"	"	"	"	"		"	"	"		"		"		"	"
f _{MAX}		105	9/	9/	9/	9/	9/	9/	9/	9/	9/	9/	"	6/			9/	All register outputs	25		25		25		MHz

See footnotes at end of table.

TABLE III. Group A inspection for device type 08 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminals	Test limits						Unit
		Test No.	O ₃	O ₄	O ₅	I/O ₆	I/O ₇	V _{CC}		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
Functional tests	3014	90	2/	2/	2/	2/	2/	5.5 V	All outputs		2/		2/		2/	
										Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
t _{SU} 10/	3003	91	4/ 8/	4/ 8/	4/ 8/			3/	All register outputs	25		25		25		ns
t _{P(CL)} 10/		92	"	"	"			"	"	20		20		20		"
t _{PCL}		93	"	"	"			"	"		20		20		20	"
t _{PCH}		94	"	"	"			"	"		20		20		20	"
t _{PHL}		95				4/ 5/	4/ 5/	"	All I/O's		30		30		30	"
t _{PLH}		96				4/ 5/	4/ 5/	"	All I/O's		30		30		30	"
t _{PZH}		97	4/ 8/	4/ 8/	4/ 8/			"	All register outputs		25		25		25	"
t _{PZL}		98	"	"	"			"	"		"		"		"	"
t _{PHZ}		99	"	"	"			"	"		"		"		"	"
t _{PLZ}		100	"	"	"			"	"		"		"		"	"
t _{PZH}		101				4/ 5/	4/ 5/	"	All I/O's		30		30		30	"
t _{PZL}		102				"	"	"	"		"		"		"	"
t _{PHZ}		103				"	"	"	"		"		"		"	"
t _{PLZ}		104				"	"	"	"		"		"		"	"
f _{MAX}		105	9/	9/	9/			4.5 V	All register outputs	25		25		25		MHz

See footnotes at end of table.

TABLE III. Group A inspection for device type 09.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit
																		Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																		Min	Max	Min	Max	Min	Max	
V _{IC}		1	-18 mA									GND					I ₀		-1.5		-1.5		-1.5	V
		2		-18 mA													I ₁							
		3			-18 mA												I ₂							
		4				-18 mA											I ₃							
		5					-18 mA										I ₄							
		6						-18 mA									I ₅							
		7							-18 mA								I ₆							
		8								-18 mA							I ₇							
		9									-18 mA						I ₈							
		10										-18 mA					I ₉							
		11											-18 mA				I/O ₁							
		12													-18 mA		I/O ₂							
		13															I/O ₃							
		14															I/O ₄							
		15															I/O ₅							
		16															I/O ₆							
V _{OL}	3007	17	1/	1/	1/	1/	1/	1/	1/	1/	1/		1/	12 mA			O ₀		0.5		0.5		0.5	
		18													12 mA		I/O ₁							
		19														12 mA	I/O ₂							
		20															I/O ₃							
		21															I/O ₄							
		22															I/O ₅							
		23															I/O ₆							
		24															O ₇							
V _{OH}	3006	25												-2 mA			O ₀	2.4		2.4		2.4		
		26														-2 mA	I/O ₁							
		27															-2 mA	I/O ₂						
		28															I/O ₃							
		29															I/O ₄							
		30															I/O ₅							
		31															I/O ₆							
		32															O ₇							
I _{IL}	3009	33	0.4 V														I ₀		-0.25		-0.25		-0.25	mA
		34		0.4 V													I ₁							
		35			0.4 V												I ₂							
		36				0.4 V											I ₃							
		37					0.4 V										I ₄							
		38						0.4 V									I ₅							
		39							0.4 V								I ₆							
		40								0.4 V							I ₇							
		41									0.4 V						I ₈							
		42										0.4 V					I ₉							
		43											0.4 V				I/O ₁							
		44												0.4 V			I/O ₂							
		45															I/O ₃							
		46															I/O ₄							
		47															I/O ₅							
		48															I/O ₆							

See footnotes at end of table.

TABLE III. Group A inspection for device type 09 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit	
			Test No.	I/O ₃	I/O ₄	I/O ₅	I/O ₆	O ₇		V _{CC}	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
											Min	Max	Min	Max	Min		Max
V _{IC}		1						4.5 V	I ₀		-1.5		-1.5		-1.5	V	
		2						"	I ₁		"		"		"	"	
		3							I ₂		"		"		"	"	
		4							I ₃		"		"		"	"	
		5							I ₄		"		"		"	"	
		6							I ₅		"		"		"	"	
		7							I ₆		"		"		"	"	
		8							I ₇		"		"		"	"	
		9							I ₈		"		"		"	"	
		10							I ₉		"		"		"	"	
		11							I/O ₃		"		"		"	"	
		12							I/O ₂		"		"		"	"	
		13	-18 mA						I/O ₃		"		"		"	"	
		14		-18 mA					I/O ₄		"		"		"	"	
		15			-18 mA				I/O ₅		"		"		"	"	
		16				-18 mA			I/O ₆		"		"		"	"	
V _{OL}	3007	17						"	O ₀		0.5		0.5		0.5	"	
		18							I/O ₁		"		"		"	"	
		19							I/O ₂		"		"		"	"	
		20	12 mA						I/O ₃		"		"		"	"	
		21		12 mA					I/O ₄		"		"		"	"	
		22			12 mA				I/O ₅		"		"		"	"	
		23				12 mA			I/O ₆		"		"		"	"	
		24					12 mA		"	O ₇		"		"		"	"
V _{OH}	3006	25							"	O ₀	2.4		2.4		2.4	"	
		26							"	I/O ₃	"		"		"	"	
		27							"	I/O ₂	"		"		"	"	
		28	-2 mA						"	I/O ₃	"		"		"	"	
		29		-2 mA					"	I/O ₄	"		"		"	"	
		30			-2 mA				"	I/O ₅	"		"		"	"	
		31				-2 mA			"	I/O ₆	"		"		"	"	
		32					-2 mA		"	O ₇	"		"		"	"	
I _{IL}	3009	33						5.5 V	I ₀		-0.25		-0.25		-0.25	mA	
		34							"	I ₁		"		"		"	"
		35							"	I ₂		"		"		"	"
		36							"	I ₃		"		"		"	"
		37							"	I ₄		"		"		"	"
		38							"	I ₅		"		"		"	"
		39							"	I ₆		"		"		"	"
		40							"	I ₇		"		"		"	"
		41							"	I ₈		"		"		"	"
		42							"	I ₉		"		"		"	"
		43							"	I/O ₁		"		"		"	"
		44							"	I/O ₂		"		"		"	"
		45	0.4 V						"	I/O ₃		"		"		"	"
		46		0.4 V					"	I/O ₄		"		"		"	"
		47			0.4 V				"	I/O ₅		"		"		"	"
		48				0.4 V			"	I/O ₆		"		"		"	"

See footnotes at end of table.

TABLE III. Group A inspection for device type 09 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2 Test No.	1 I ₀	2 I ₁	3 I ₂	4 I ₃	5 I ₄	6 I ₅	7 I ₆	8 I ₇	9 I ₈	10 GND	11 I ₉	12 O ₀	13 I/O ₁	14 I/O ₂	Meas. terminal	Test limits						Unit
																		Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																		Min	Max	Min	Max	Min	Max	
I _{IH}	3010	49	2.7 V									GND					I ₀		50		50		50	μA
		50		2.7 V									"				I ₁		20		20		20	"
		51			2.7 V								"				I ₂		"		"		"	"
		52				2.7 V							"				I ₃		"		"		"	"
		53					2.7 V						"				I ₄		"		"		"	"
		54						2.7 V					"				I ₅		"		"		"	"
		55							2.7 V				"				I ₆		"		"		"	"
		56								2.7 V			"				I ₇		"		"		"	"
		57									2.7 V		"				I ₈		"		"		"	"
I _I		58										"	2.7 V				I ₉		50		50		50	"
		59	5.5 V									"					I ₀		0.2		0.2		0.2	mA
		60		5.5 V								"					I ₁		0.1		0.1		0.1	"
		61			5.5 V							"					I ₂		"		"		"	"
		62				5.5 V						"					I ₃		"		"		"	"
		63					5.5 V					"					I ₄		"		"		"	"
		64						5.5 V				"					I ₅		"		"		"	"
		65							5.5 V			"					I ₆		"		"		"	"
		66								5.5 V		"					I ₇		"		"		"	"
		67									5.5 V	"					I ₈		"		"		"	"
		68										"	5.5 V				I ₉		0.2		0.2		0.2	"
		69										"			5.5 V		I/O ₁		0.1		0.1		0.1	"
		70										"				5.5 V	I/O ₂		"		"		"	"
		71										"					I/O ₃		"		"		"	"
		72										"					I/O ₄		"		"		"	"
		73										"					I/O ₅		"		"		"	"
		74										"					I/O ₆		"		"		"	"
I _O 11/		75	1/	1/	1/	1/	1/	1/	1/	1/	1/	"	1/	2.25 V			O ₀	-15	-125	-15	-125	-15	-125	"
		76	"	"	"	"	"	"	"	"	"	"	"		2.25 V		I/O ₁	"	"	"	"	"	"	"
		77	"	"	"	"	"	"	"	"	"	"	"			2.25 V	I/O ₂	"	"	"	"	"	"	"
		78	"	"	"	"	"	"	"	"	"	"	"				I/O ₃	"	"	"	"	"	"	"
		79	"	"	"	"	"	"	"	"	"	"	"				I/O ₄	"	"	"	"	"	"	"
		80	"	"	"	"	"	"	"	"	"	"	"				I/O ₅	"	"	"	"	"	"	"
		81	"	"	"	"	"	"	"	"	"	"	"				I/O ₆	"	"	"	"	"	"	"
		82	"	"	"	"	"	"	"	"	"	"	"				O ₇	"	"	"	"	"	"	"
		83	"	"	"	"	"	"	"	"	"	"	"	2.7 V			O ₀	20		20		20		μA
I _{OZH}		84	"	"	"	"	"	"	"	"	"	"	"		2.7 V		I/O ₁	100		100		100		"
		85	"	"	"	"	"	"	"	"	"	"	"			2.7 V	I/O ₂	"	"	"	"	"	"	"
		86	"	"	"	"	"	"	"	"	"	"	"				I/O ₃	"	"	"	"	"	"	"
		87	"	"	"	"	"	"	"	"	"	"	"				I/O ₄	"	"	"	"	"	"	"
		88	"	"	"	"	"	"	"	"	"	"	"				I/O ₅	"	"	"	"	"	"	"
		89	"	"	"	"	"	"	"	"	"	"	"				I/O ₆	"	"	"	"	"	"	"
		90	"	"	"	"	"	"	"	"	"	"	"				O ₇	20		20		20		"
		91	"	"	"	"	"	"	"	"	"	"	"	0.4 V			O ₀	-20		-20		-20		"
		92	"	"	"	"	"	"	"	"	"	"	"				O ₇	-20		-20		-20		"
I _{CC}	3005	93										"				V _{CC}	220		220		220		mA	

See footnotes at end of table.

TABLE III. Group A inspection for device type 09 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit
		Test No.	I/O ₃	I/O ₄	I/O ₅	I/O ₆	O ₇	V _{CC}		Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
I _{IH}	3010	49						5.5 V	I ₀		50		50		50	μA
		50						"	I ₁		20		20		20	"
		51							I ₂		"		"		"	"
		52							I ₃		"		"		"	"
		53							I ₄		"		"		"	"
		54							I ₅		"		"		"	"
		55							I ₆		"		"		"	"
		56							I ₇		"		"		"	"
		57							I ₈		"		"		"	"
		58							I ₉		50		50		50	"
I _I		59							I ₀		0.2		0.2		0.2	mA
		60							I ₁		0.1		0.1		0.1	"
		61							I ₂		"		"		"	"
		62							I ₃		"		"		"	"
		63							I ₄		"		"		"	"
		64							I ₅		"		"		"	"
		65							I ₆		"		"		"	"
		66							I ₇		"		"		"	"
		67							I ₈		"		"		"	"
		68							I ₉		0.2		0.2		0.2	"
		69							I/O ₁		0.1		0.1		0.1	"
		70							I/O ₂		"		"		"	"
		71	5.5 V						I/O ₃		"		"		"	"
		72		5.5 V					I/O ₄		"		"		"	"
		73			5.5 V				I/O ₅		"		"		"	"
		74				5.5 V			I/O ₆		"		"		"	"
I _O 11/		75							O ₀	-15	-125	-15	-125	-15	-125	"
		76							I/O ₁	"	"	"	"	"	"	"
		77							I/O ₂	"	"	"	"	"	"	"
		78	2.25 V						I/O ₃	"	"	"	"	"	"	"
		79		2.25 V					I/O ₄	"	"	"	"	"	"	"
		80			2.25 V				I/O ₅	"	"	"	"	"	"	"
		81				2.25 V			I/O ₆	"	"	"	"	"	"	"
		82					2.25 V		O ₇	"	"	"	"	"	"	"
I _{OZH}		83							O ₀		20		20		20	μA
		84							I/O ₁		100		100		100	"
		85							I/O ₂		"		"		"	"
		86	2.7 V						I/O ₃		"		"		"	"
		87		2.7 V					I/O ₄		"		"		"	"
		88			2.7 V				I/O ₅		"		"		"	"
		89				2.7 V			I/O ₆		"		"		"	"
		90					2.7 V		O ₇		20		20		20	"
I _{OZL}		91						O ₀		-20		-20		-20	"	
		92					0.4 V		O ₇		-20		-20		-20	"
I _{CC}	3005	93						"	V _{CC}		220		220		220	mA

See footnotes at end of table.

TABLE III. Group A inspection for device type 09 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit
		Test No.	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	I ₈	GND	I ₉	O ₀	I/O ₁	I/O ₂		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C		
																		Min	Max	Min	Max	Min	Max	
Functional tests	3014	94	2/	2/	2/	2/	2/	2/	2/	2/	2/	GND	2/	2/	2/	2/	All outputs		2/		2/		2/	
																		Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C		
																		Min	Max	Min	Max	Min	Max	
t _{PHL}	3003	95	3/	3/	3/	3/	3/	3/	3/	3/	3/	GND	3/	4/ 5/	4/ 5/	4/ 5/	All outputs		15		15		15	ns
t _{PLH}		96	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
t _{PZH}		97	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
t _{PZL}		98	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
t _{PHZ}		99	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
t _{PLZ}		100	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"

See footnotes at end of table.

TABLE III. Group A inspection for device type 09 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminals	Test limits						Unit
		Test No.	I/O ₃	I/O ₄	I/O ₅	I/O ₆	O ₇	V _{CC}		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C		
			Min	Max	Min	Max	Min	Max								
Functional tests	3014	94	2/	2/	2/	2/	2/	5.5 V	All outputs		2/		2/		2/	
										Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
t _{PHL}	3003	95	4/ 5/	4/ 5/	4/ 5/	4/ 5/	4/ 5/	3/	All outputs		15		15		15	ns
t _{PLH}		96	"	"	"	"	"	"	"		"		"		"	"
t _{PZH}		97	"	"	"	"	"	"	"		"		"		"	"
t _{PZL}		98	"	"	"	"	"	"	"		"		"		"	"
t _{PHZ}		99	"	"	"	"	"	"	"		"		"		"	"
t _{PLZ}		100	"	"	"	"	"	"	"		"		"		"	"

See footnotes at end of table.

TABLE III. Group A inspection for device type 10.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
			Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	O ₀	O ₁		O ₂	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																			Min	Max	Min	Max	Min		Max
V _{IC}		1	-18 mA									GND					CLOCK		-1.5		-1.5		-1.5	V	
		2		-18 mA													I ₀								
		3			-18 mA												I ₁								
		4				-18 mA											I ₂								
		5					-18 mA										I ₃								
		6						-18 mA									I ₄								
		7							-18 mA								I ₅								
		8								-18 mA							I ₆								
		9									-18 mA						I ₇								
		10										-18 mA					$\overline{\text{OE}}$								
V _{OL}	3007	11	1/	1/	1/	1/	1/	1/	1/	1/	1/		1/ 6/	12 mA			I ₀		0.5		0.5		0.5		
		12													12 mA		I ₁								
		13														12 mA	I ₂								
		14															I ₃								
		15															I ₄								
		16															I ₅								
		17															I ₆								
		18															I ₇								
V _{OH}	3006	19												-2 mA			I ₀	2.4		2.4		2.4			
		20													-2 mA		I ₁								
		21														-2 mA	I ₂								
		22															I ₃								
		23															I ₄								
		24															I ₅								
		25															I ₆								
		26															I ₇								
I _{IL}	3009	27	0.4 V														CLOCK		-0.25		-0.25		-0.25	mA	
		28		0.4 V													I ₀								
		29			0.4 V												I ₁								
		30				0.4 V											I ₂								
		31					0.4 V										I ₃								
		32						0.4 V									I ₄								
		33							0.4 V								I ₅								
		34								0.4 V							I ₆								
		35									0.4 V						I ₇								
		36											0.4 V				$\overline{\text{OE}}$								

See footnotes at end of table.

TABLE III. Group A inspection for device type 10 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit
		Test No.	O ₃	O ₄	O ₅	O ₆	O ₇	V _{CC}		Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
V _{IC}		1						4.5 V	CLOCK		-1.5		-1.5		-1.5	V
		2							I ₀							
		3							I ₁							
		4							I ₂							
		5							I ₃							
		6							I ₄							
		7							I ₅							
		8							I ₆							
		9							I ₇							
		10							OE							
V _{OL}	3007	11							I ₀		0.5		0.5		0.5	
		12							I ₁							
		13							I ₂							
		14	12 mA						I ₃							
		15		12 mA					I ₄							
		16			12 mA				I ₅							
		17				12 mA			I ₆							
		18					12 mA		I ₇							
V _{OH}	3006	19							I ₀	2.4		2.4		2.4		
		20							I ₁							
		21							I ₂							
		22	-2 mA						I ₃							
		23		-2 mA					I ₄							
		24			-2 mA				I ₅							
		25				-2 mA			I ₆							
		26					-2 mA		I ₇							
I _{IL}	3009	27						5.5 V	CLOCK		-0.25		-0.25		-0.25	mA
		28							I ₀							
		29							I ₁							
		30							I ₂							
		31							I ₃							
		32							I ₄							
		33							I ₅							
		34							I ₆							
		35							I ₇							
		36							OE							

See footnotes at end of table.

TABLE III. Group A inspection for device type 10 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
			Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	O ₀	O ₁		O ₂	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																			Min	Max	Min	Max	Min		Max
I _{IH}	3010	37	2.7 V									GND					CLOCK		50		50		50	μA	
		38		2.7 V													I ₀		20		20		20	"	
		39			2.7 V												I ₁		"		"		"	"	
		40				2.7 V											I ₂		"		"		"	"	
		41					2.7 V										I ₃		"		"		"	"	
		42						2.7 V									I ₄		"		"		"	"	
		43							2.7 V								I ₅		"		"		"	"	
		44								2.7 V							I ₆		"		"		"	"	
		45									2.7 V						I ₇		"		"		"	"	
46												2.7 V			$\overline{\text{OE}}$		50		50		50	"			
I _I		47	5.5 V														CLOCK		0.2		0.2		0.2	mA	
		48		5.5 V													I ₀		0.1		0.1		0.1	"	
		49			5.5 V												I ₁		"		"		"	"	
		50				5.5 V											I ₂		"		"		"	"	
		51					5.5 V										I ₃		"		"		"	"	
		52						5.5 V									I ₄		"		"		"	"	
		53							5.5 V								I ₅		"		"		"	"	
		54								5.5 V							I ₆		"		"		"	"	
		55									5.5 V						I ₇		"		"		"	"	
56												5.5 V			$\overline{\text{OE}}$		0.2		0.2		0.2	"			
I _O 11/		57	1/	1/	1/	1/	1/	1/	1/	1/	1/		1/ 6/	2.25 V			O ₀	-15	-125	-15	-125	-15	-125	"	
		58	"	"	"	"	"	"	"	"	"	"	"		2.25 V		O ₁	"	"	"	"	"	"	"	
		59	"	"	"	"	"	"	"	"	"	"	"			2.25 V	O ₂	"	"	"	"	"	"	"	
		60	"	"	"	"	"	"	"	"	"	"	"				O ₃	"	"	"	"	"	"	"	
		61	"	"	"	"	"	"	"	"	"	"	"				O ₄	"	"	"	"	"	"	"	
		62	"	"	"	"	"	"	"	"	"	"	"				O ₅	"	"	"	"	"	"	"	
		63	"	"	"	"	"	"	"	"	"	"	"				O ₆	"	"	"	"	"	"	"	
		64	"	"	"	"	"	"	"	"	"	"	"				O ₇	"	"	"	"	"	"	"	
		65	"	"	"	"	"	"	"	"	"	"	"	1/ 7/	2.7 V		O ₀		20		20		20	μA	
I _{OZH}		66	"	"	"	"	"	"	"	"	"	"	"		2.7 V		O ₁		"		"		"	"	
		67	"	"	"	"	"	"	"	"	"	"	"			2.7 V	O ₂		"		"		"	"	
		68	"	"	"	"	"	"	"	"	"	"	"				O ₃		"		"		"	"	
		69	"	"	"	"	"	"	"	"	"	"	"				O ₄		"		"		"	"	
		70	"	"	"	"	"	"	"	"	"	"	"				O ₅		"		"		"	"	
		71	"	"	"	"	"	"	"	"	"	"	"				O ₆		"		"		"	"	
		72	"	"	"	"	"	"	"	"	"	"	"				O ₇		"		"		"	"	
		I _{OZL}		73	"	"	"	"	"	"	"	"	"	"	"		0.4 V		O ₀		-20		-20		-20
74	"			"	"	"	"	"	"	"	"	"	"			0.4 V	O ₁		"		"		"	"	
75	"			"	"	"	"	"	"	"	"	"	"				O ₂		"		"		"	"	
76	"			"	"	"	"	"	"	"	"	"	"				O ₃		"		"		"	"	
77	"			"	"	"	"	"	"	"	"	"	"				O ₄		"		"		"	"	
78	"			"	"	"	"	"	"	"	"	"	"				O ₅		"		"		"	"	
79	"			"	"	"	"	"	"	"	"	"	"				O ₆		"		"		"	"	
80	"			"	"	"	"	"	"	"	"	"	"				O ₇		"		"		"	"	
I _{CC}	3005	81														V _{CC}		220		220		220	mA		

See footnotes at end of table.

TABLE III. Group A inspection for device type 10 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit							
										Test No.	O ₃	O ₄	O ₅	O ₆	O ₇		V _{CC}	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C	
																		Min	Max	Min	Max	Min	Max
I _{IH}	3010	37						5.5 V	CLOCK		50		50		50	μA							
		38						"	I ₀		20		20		20	"							
		39						"	I ₁		"		"		"	"							
		40						"	I ₂		"		"		"	"							
		41						"	I ₃		"		"		"	"							
		42						"	I ₄		"		"		"	"							
		43						"	I ₅		"		"		"	"							
		44						"	I ₆		"		"		"	"							
		45						"	I ₇		"		"		"	"							
46						"	OE		50		50		50	"									
I _I		47						"	CLOCK		0.2		0.2		0.2	mA							
		48						"	I ₀		0.1		0.1		0.1	"							
		49						"	I ₁		"		"		"	"							
		50						"	I ₂		"		"		"	"							
		51						"	I ₃		"		"		"	"							
		52						"	I ₄		"		"		"	"							
		53						"	I ₅		"		"		"	"							
		54						"	I ₆		"		"		"	"							
		55						"	I ₇		"		"		"	"							
56						"	OE		0.2		0.2		0.2	"									
I _O 11/		57						"	O ₀	-15	-125	-15	-125	-15	-125	"							
		58						"	O ₁	"	"	"	"	"	"	"							
		59						"	O ₂	"	"	"	"	"	"	"							
		60	2.25 V					"	O ₃	"	"	"	"	"	"	"							
		61		2.25 V				"	O ₄	"	"	"	"	"	"	"							
		62			2.25 V			"	O ₅	"	"	"	"	"	"	"							
		63				2.25 V		"	O ₆	"	"	"	"	"	"	"							
		64					2.25 V	"	O ₇	"	"	"	"	"	"	"							
I _{OZH}		65						"	O ₀		20		20		20	μA							
		66						"	O ₁		"		"		"	"							
		67						"	O ₂		"		"		"	"							
		68	2.7 V					"	O ₃		"		"		"	"							
		69		2.7 V				"	O ₄		"		"		"	"							
		70			2.7 V			"	O ₅		"		"		"	"							
		71				2.7 V		"	O ₆		"		"		"	"							
		72					2.7 V	"	O ₇		"		"		"	"							
I _{OZL}		73						"	O ₀	-20		-20		-20		"							
		74						"	O ₁		"		"		"	"							
		75						"	O ₂		"		"		"	"							
		76	0.4 V					"	O ₃		"		"		"	"							
		77		0.4 V				"	O ₄		"		"		"	"							
		78			0.4 V			"	O ₅		"		"		"	"							
		79				0.4 V		"	O ₆		"		"		"	"							
		80					0.4 V	"	O ₇		"		"		"	"							
I _{CC}	3005	81						"	V _{CC}		220		220		220	mA							

See footnotes at end of table.

TABLE III. Group A inspection for device type 10 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
		Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	O ₀	O ₁	O ₂		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C			
		Min	Max	Min	Max	Min	Max							Min	Max	Min		Max							
Functional tests	3014	82	2/	2/	2/	2/	2/	2/	2/	2/	2/	GND	2/	2/	2/	2/	All outputs		2/		2/		2/		
																		Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C			
																		Min	Max	Min	Max	Min	Max		
t _{SU} 10/	3003	83	3/	3/	3/	3/	3/	3/	3/	3/	3/	GND	6/	4/ 8/	4/ 8/	4/ 8/	All register outputs	15		15		15		ns	
t _{P(CL)} 10/		84	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	10		10		10		"	
t _{PCH}		85	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		12		12		12	"	
t _{PCL}		86	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"	
t _{PZH}		87	"	"	"	"	"	"	"	"	"	"	"	3/	"	"	"	"		"		"		"	"
t _{PZL}		88	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"
t _{PHZ}		89	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"
t _{PLZ}		90	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		"		"		"	"
f _{MAX}		91	9/	9/	9/	9/	9/	9/	9/	9/	9/	9/	"	6/	9/	9/	9/	"	50		50		50		MHz

See footnotes at end of table.

TABLE III. Group A inspection for device type 10 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminals	Test limits						Unit	
		Test No.	O ₃	O ₄	O ₅	O ₆	O ₇	V _{CC}		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C			
										Min	Max	Min	Max	Min	Max		
Functional tests	3014	82	2/	2/	2/	2/	2/	2/	5.5 V	All outputs		2/		2/		2/	
										Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C			
										Min	Max	Min	Max	Min	Max		
t _{SIU} 10/	3003	83	4/ 8/	4/ 8/	4/ 8/	4/ 8/	4/ 8/	4/ 8/	3/	All register outputs	15		15		15		ns
t _{P(CL)} 10/		84	"	"	"	"	"	"	"	"	10		10		10		"
t _{PCH}		85	"	"	"	"	"	"	"	"		12		12		12	"
t _{PCL}		86	"	"	"	"	"	"	"	"		"		"		"	"
t _{PZH}		87	"	"	"	"	"	"	"	"		"		"		"	"
t _{PZL}		88	"	"	"	"	"	"	"	"		"		"		"	"
t _{PHZ}		89	"	"	"	"	"	"	"	"		"		"		"	"
t _{PLZ}		90	"	"	"	"	"	"	"	"		"		"		"	"
f _{MAX}		91	9/	9/	9/	9/	9/	9/	4.5 V	"	50		50		50		MHz

See footnotes at end of table.

TABLE III. Group A inspection for device type 11.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
			Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	I/O ₀	O ₁		O ₂	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																			Min	Max	Min	Max	Min		Max
V _{IC}		1	-18 mA									GND					CLOCK		-1.5		-1.5		-1.5	V	
		2		-18 mA													I ₀								
		3			-18 mA												I ₁								
		4				-18 mA											I ₂								
		5					-18 mA										I ₃								
		6						-18 mA									I ₄								
		7							-18 mA								I ₅								
		8								-18 mA							I ₆								
		9									-18 mA						I ₇								
		10											-18 mA				$\overline{\text{OE}}$								
		11												-18 mA			I/O ₀								
		12															I/O ₇								
V _{OL}	3007	13	1/	1/	1/	1/	1/	1/	1/	1/	1/	"	1/ 6/	12 mA			I/O ₀	0.5		0.5		0.5	"		
		14	"	"	"	"	"	"	"	"	"	"	"	"	12 mA		O ₁	"		"		"	"		
		15	"	"	"	"	"	"	"	"	"	"	"	"			O ₂	"		"		"	"		
		16	"	"	"	"	"	"	"	"	"	"	"	"			O ₃	"		"		"	"		
		17	"	"	"	"	"	"	"	"	"	"	"	"			O ₄	"		"		"	"		
		18	"	"	"	"	"	"	"	"	"	"	"	"			O ₅	"		"		"	"		
		19	"	"	"	"	"	"	"	"	"	"	"	"			O ₆	"		"		"	"		
		20	"	"	"	"	"	"	"	"	"	"	"	"			I/O ₇	"		"		"	"		
		V _{OH}	3006	21	"	"	"	"	"	"	"	"	"	"	"	-2 mA			I/O ₀	2.4		2.4		2.4	"
				22	"	"	"	"	"	"	"	"	"	"	"	"	-2 mA		O ₁	"		"		"	"
23	"			"	"	"	"	"	"	"	"	"	"	"			O ₂	"		"		"	"		
24	"			"	"	"	"	"	"	"	"	"	"	"			O ₃	"		"		"	"		
25	"			"	"	"	"	"	"	"	"	"	"	"			O ₄	"		"		"	"		
26	"			"	"	"	"	"	"	"	"	"	"	"			O ₅	"		"		"	"		
27	"			"	"	"	"	"	"	"	"	"	"	"			O ₆	"		"		"	"		
28	"			"	"	"	"	"	"	"	"	"	"	"			I/O ₇	"		"		"	"		
I _{IL}	3009	29	0.4 V										"				CLOCK		-0.25		-0.25		-0.25	mA	
		30		0.4 V									"				I ₀								
		31			0.4 V								"				I ₁								
		32				0.4 V							"				I ₂								
		33					0.4 V						"				I ₃								
		34						0.4 V					"				I ₄								
		35							0.4 V				"				I ₅								
		36								0.4 V			"				I ₆								
		37									0.4 V						I ₇								
		38											"	0.4 V			$\overline{\text{OE}}$								
		39											"		0.4 V		I/O ₀								
		40											"				I/O ₇								

See footnotes at end of table.

TABLE III. Group A inspection for device type 11 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit	
			Test No.	O ₃	O ₄	O ₅	O ₆	I/O ₇		V _{CC}	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
											Min	Max	Min	Max	Min		Max
V _{IC}		1						4.5 V	CLOCK		-1.5		-1.5		-1.5	V	
		2							I ₀								
		3							I ₁								
		4							I ₂								
		5							I ₃								
		6							I ₄								
		7							I ₅								
		8							I ₆								
		9							I ₇								
		10							OE								
		11							I/O ₀								
		12						-18 mA	I/O ₇								
V _{OL}	3007	13						I/O ₀		0.5		0.5		0.5			
		14							O ₁								
		15							O ₂								
		16	12 mA						O ₃								
		17		12 mA					O ₄								
		18			12 mA				O ₅								
		19				12 mA			O ₆								
		20					12 mA		I/O ₇								
V _{OH}	3006	21						I/O ₀	2.4		2.4		2.4				
		22							O ₁								
		23							O ₂								
		24	-2 mA						O ₃								
		25		-2 mA					O ₄								
		26			-2 mA				O ₅								
		27				-2 mA			O ₆								
		28					-2 mA		I/O ₇								
I _{IL}	3009	29						5.5 V	CLOCK		-0.25		-0.25		-0.25	mA	
		30							I ₀								
		31							I ₁								
		32							I ₂								
		33							I ₃								
		34							I ₄								
		35							I ₅								
		36							I ₆								
		37							I ₇								
		38							OE								
		39							I/O ₀								
		40						0.4 V	I/O ₇								

See footnotes at end of table.

TABLE III. Group A inspection for device type 11 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit
		Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	I/O ₀	O ₁	O ₂		Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																		Min	Max	Min	Max	Min	Max	
I _{IH}	3010	41	2.7 V									GND					CLOCK		50		50		50	μA
		42		2.7 V								"					I ₀		20		20		20	"
		43			2.7 V							"					I ₁		"		"		"	"
		44				2.7 V						"					I ₂		"		"		"	"
		45					2.7 V					"					I ₃		"		"		"	"
		46						2.7 V				"					I ₄		"		"		"	"
		47							2.7 V			"					I ₅		"		"		"	"
		48								2.7 V		"					I ₆		"		"		"	"
		49									2.7 V	"					I ₇		"		"		"	"
		50										"	2.7 V				$\overline{\text{OE}}$		50		50		50	"
I _I		51	5.5 V									"					CLOCK		0.2		0.2		0.2	mA
		52		5.5 V								"					I ₀		0.1		0.1		0.1	"
		53			5.5 V							"					I ₁		"		"		"	"
		54				5.5 V						"					I ₂		"		"		"	"
		55					5.5 V					"					I ₃		"		"		"	"
		56						5.5 V				"					I ₄		"		"		"	"
		57							5.5 V			"					I ₅		"		"		"	"
		58								5.5 V		"					I ₆		"		"		"	"
		59									5.5 V	"					I ₇		"		"		"	"
		60										"	5.5 V				$\overline{\text{OE}}$		0.2		0.2		0.2	"
61										"			5.5 V		I/O ₀		0.1		0.1		0.1	"		
62										"					I/O ₇		0.1		0.1		0.1	"		
I ₀ 11/		63	1/	1/	1/	1/	1/	1/	1/	1/	1/	"	1/ 6/	2.25 V			I/O ₀	-15	-125	-158	-125	-15	-125	"
		64	"	"	"	"	"	"	"	"	"	"	"		2.25 V		O ₁	"	"	"	"	"	"	"
		65	"	"	"	"	"	"	"	"	"	"	"			2.25 V	O ₂	"	"	"	"	"	"	"
		66	"	"	"	"	"	"	"	"	"	"	"				O ₃	"	"	"	"	"	"	"
		67	"	"	"	"	"	"	"	"	"	"	"				O ₄	"	"	"	"	"	"	"
		68	"	"	"	"	"	"	"	"	"	"	"				O ₅	"	"	"	"	"	"	"
		69	"	"	"	"	"	"	"	"	"	"	"	1/ 7/	2.7 V		O ₆	"	"	"	"	"	"	"
		70	"	"	"	"	"	"	"	"	"	"	"		2.7 V		I/O ₇	"	"	"	"	"	"	"
		71	"	"	"	"	"	"	"	"	"	"	"	"		2.7 V		I/O ₀	100		100		100	μA
		72	"	"	"	"	"	"	"	"	"	"	"	"				O ₁	20		20		20	"
73	"	"	"	"	"	"	"	"	"	"	"	"				O ₂	"	"	"	"	"	"		
74	"	"	"	"	"	"	"	"	"	"	"	"				O ₃	"	"	"	"	"	"		
75	"	"	"	"	"	"	"	"	"	"	"	"				O ₄	"	"	"	"	"	"		
76	"	"	"	"	"	"	"	"	"	"	"	"				O ₅	"	"	"	"	"	"		
77	"	"	"	"	"	"	"	"	"	"	"	"				O ₆	"	"	"	"	"	"		
78	"	"	"	"	"	"	"	"	"	"	"	"				I/O ₇	100		100		100	"		
I _{0ZL}		79	"	"	"	"	"	"	"	"	"	"	"		0.4 V		O ₁	-20		-20		-20	"	
		80	"	"	"	"	"	"	"	"	"	"	"			0.4 V	O ₂	"	"	"	"	"	"	
		81	"	"	"	"	"	"	"	"	"	"	"				O ₃	"	"	"	"	"	"	
		82	"	"	"	"	"	"	"	"	"	"	"				O ₄	"	"	"	"	"	"	
		83	"	"	"	"	"	"	"	"	"	"	"				O ₅	"	"	"	"	"	"	
		84	"	"	"	"	"	"	"	"	"	"	"				O ₆	"	"	"	"	"	"	
I _{CC}	3005	85										"				V _{CC}		220		220		220	mA	

See footnotes at end of table.

TABLE III. Group A inspection for device type 11 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit	
		Test No.	O ₃	O ₄	O ₅	O ₆	I/O ₇	V _{CC}		Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C			
										Min	Max	Min	Max	Min	Max		
I _{IH}	3010	41						5.5 V	CLOCK		50		50		50	μA	
		42						"	I ₀		20		20		20	"	
		43						"	I ₁		"		"		"	"	
		44						"	I ₂		"		"		"	"	
		45						"	I ₃		"		"		"	"	
		46						"	I ₄		"		"		"	"	
		47						"	I ₅		"		"		"	"	
		48						"	I ₆		"		"		"	"	
		49						"	I ₇		"		"		"	"	
		50						"	OE		50		50		50	"	
I _I		51						"	CLOCK		0.2		0.2		0.2	mA	
		52						"	I ₀		0.1		0.1		0.1	"	
		53						"	I ₁		"		"		"	"	
		54						"	I ₂		"		"		"	"	
		55						"	I ₃		"		"		"	"	
		56						"	I ₄		"		"		"	"	
		57						"	I ₅		"		"		"	"	
		58						"	I ₆		"		"		"	"	
		59						"	I ₇		"		"		"	"	
		60						"	OE		0.2		0.2		0.2	"	
		61						"	I/O ₀		0.1		0.1		0.1	"	
		62						5.5 V	I/O ₇		0.1		0.1		0.1	"	
	I _O 11/		63						"	I/O ₀	-15	-125	-15	-125	-15	-125	"
			64						"	O ₁	"	"	"	"	"	"	"
		65						"	O ₂	"	"	"	"	"	"	"	
		66	2.25 V					"	O ₃	"	"	"	"	"	"	"	
		67		2.25 V				"	O ₄	"	"	"	"	"	"	"	
		68			2.25 V			"	O ₅	"	"	"	"	"	"	"	
		69				2.25 V		"	O ₆	"	"	"	"	"	"	"	
		70					2.25 V	"	I/O ₇	"	"	"	"	"	"	"	
I _{OZH}			71						"	I/O ₀		100		100		100	μA
			72						"	O ₁		20		20		20	"
		73						"	O ₂		"		"		"	"	
		74	2.7 V					"	O ₃		"		"		"	"	
		75		2.7 V				"	O ₄		"		"		"	"	
		76			2.7 V			"	O ₅		"		"		"	"	
		77				2.7 V		"	O ₆		"		"		"	"	
		78					2.7 V	"	I/O ₇		100		100		100	"	
I _{OZL}		79						"	O ₁		-20		-20		-20	"	
		80						"	O ₂		"		"		"	"	
		81	0.4 V					"	O ₃		"		"		"	"	
		82		0.4 V				"	O ₄		"		"		"	"	
		83			0.4 V			"	O ₅		"		"		"	"	
		84				0.4 V		"	O ₆		"		"		"	"	
I _{CC}		85						"	V _{CC}		220		220		220	mA	

See footnotes at end of table.

TABLE III. Group A inspection for device type 11 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2 Test No.	1 CLK	2 I ₀	3 I ₁	4 I ₂	5 I ₃	6 I ₄	7 I ₅	8 I ₆	9 I ₇	10 GND	11 $\overline{\text{OE}}$	12 I/O ₀	13 O ₁	14 O ₂	Meas. terminal	Test limits						Unit
																		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C		
																		Min	Max	Min	Max	Min	Max	
Functional tests	3014	86	2/	2/	2/	2/	2/	2/	2/	2/	2/	GND	2/	2/	2/	2/	All outputs		2/		2/		2/	
																		Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C		
																		Min	Max	Min	Max	Min	Max	
t _{SU} 10/	3003	87	3/	3/	3/	3/	3/	3/	3/	3/	3/	GND	6/		4/ 8/	4/ 8/	All register outputs	15		15		15		ns
t _{P(CL)} 10/		88	"	"	"	"	"	"	"	"	"	"	"		"	"	"	10		10		10		"
t _{PCL}		89	"	"	"	"	"	"	"	"	"	"	"		"	"	"		12		12		12	"
t _{PCH}		90	"	"	"	"	"	"	"	"	"	"	"		"	"	"		12		12		12	"
t _{PHL}		91	"	"	"	"	"	"	"	"	"	"		4/ 5/			All I/O's		15		15		15	"
t _{PLH}		92	"	"	"	"	"	"	"	"	"	"	"		4/ 5/		All I/O's		15		15		15	"
t _{PZH}		93	"	"	"	"	"	"	"	"	"	"	3/		4/ 8/	4/ 8/	All register outputs		12		12		12	"
t _{PZL}		94	"	"	"	"	"	"	"	"	"	"	"		"	"	"		"		"		"	"
t _{PHZ}		95	"	"	"	"	"	"	"	"	"	"	"		"	"	"		"		"		"	"
t _{PLZ}		96	"	"	"	"	"	"	"	"	"	"	"		"	"	"		"		"		"	"
t _{PZH}		97	"	"	"	"	"	"	"	"	"	"	"		4/ 5/		All I/O's		15		15		15	"
t _{PZL}		98	"	"	"	"	"	"	"	"	"	"	"		"		"		"		"		"	"
t _{PHZ}		99	"	"	"	"	"	"	"	"	"	"	"		"		"		"		"		"	"
t _{PLZ}		100	"	"	"	"	"	"	"	"	"	"	"		"		"		"		"		"	"
f _{MAX}		101	9/	9/	9/	9/	9/	9/	9/	9/	9/	9/	"	6/		9/	9/	All register outputs	50		50		50	

See footnotes at end of table.

TABLE III. Group A inspection for device type 11 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminals	Test limits						Unit
		Test No.	O ₃	O ₄	O ₅	O ₆	I/O ₇	V _{CC}		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
Functional tests	3014	86	2/	2/	2/	2/	2/	5.5 V	All outputs		2/		2/		2/	
										Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C		
										Min	Max	Min	Max	Min	Max	
t _{SU} 10/	3003	87	4/ 8/	4/ 8/	4/ 8/	4/ 8/		3/	All register outputs	15		15		15		ns
t _{P(CL)} 10/		88	"	"	"	"		"	"	10		10		10		"
t _{PCL}		89	"	"	"	"		"	"		12		12		12	"
t _{PCH}		90	"	"	"	"		"	"		12		12		12	"
t _{PHL}		91					4/ 5	"	All I/O's		15		15		15	"
t _{PLH}		92					4/ 5	"	All I/O's		15		15		15	"
t _{PZH}		93	4/ 8/	4/ 8/	4/ 8/	4/ 8/		"	All register outputs		12		12		12	"
t _{PZL}		94	"	"	"	"		"	"		"		"		"	"
t _{PHZ}		95	"	"	"	"		"	"		"		"		"	"
t _{PLZ}		96	"	"	"	"		"	"		"		"		"	"
t _{PZH}		97					4/ 5	"	All I/O's		15		15		15	"
t _{PZL}		98					"	"	"		"		"		"	"
t _{PHZ}		99					"	"	"		"		"		"	"
t _{PLZ}		100					"	"	"		"		"		"	"
f _{MAX}		101	9/	9/	9/	9/		4.5 V	All register outputs	50		50		50		MHz

See footnotes at end of table.

TABLE III. Group A inspection for device type 12.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit	
			Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	I/O ₀	I/O ₁		O ₂	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																			Min	Max	Min	Max	Min		Max
V _{IC}		1	-18 mA									GND					CLOCK		-1.5		-1.5		-1.5	V	
		2		-18 mA													I ₀								
		3			-18 mA												I ₁								
		4				-18 mA											I ₂								
		5					-18 mA										I ₃								
		6						-18 mA									I ₄								
		7							-18 mA								I ₅								
		8								-18 mA							I ₆								
		9									-18 mA						I ₇								
		10												-18 mA			$\overline{\text{OE}}$								
		11													-18 mA		I/O ₀								
		12														-18 mA	I/O ₁								
		13															I/O ₆								
		14															I/O ₇								
V _{OL}	3007	15	1/	1/	1/	1/	1/	1/	1/	1/	1/		1/ 6/	12 mA			I/O ₀		0.5		0.5		0.5		
		16													12 mA	I/O ₁									
		17														12 mA	O ₂								
		18															O ₃								
		19															O ₄								
		20															O ₅								
		21															I/O ₆								
		22															I/O ₇								
		23													-2 mA		I/O ₀	2.4		2.4		2.4			
		24													-2 mA	-2 mA	I/O ₁								
25															O ₂										
26															O ₃										
27															O ₄										
28															O ₅										
29															I/O ₆										
30															I/O ₇										
V _{OH}	3006	31	0.4 V														CLOCK		-0.25		-0.25		-0.25	mA	
		32		0.4 V													I ₀								
		33			0.4 V												I ₁								
		34				0.4 V											I ₂								
		35					0.4 V										I ₃								
		36						0.4 V									I ₄								
		37							0.4 V								I ₅								
		38								0.4 V							I ₆								
		39									0.4 V						I ₇								
		40										0.4 V					$\overline{\text{OE}}$								
41												0.4 V			I/O ₀										
42													0.4 V		I/O ₁										
43														0.4 V	I/O ₆										
44															I/O ₇										

See footnotes at end of table.

TABLE III. Group A inspection for device type 12 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit	
			Test No.	O ₃	O ₄	O ₅	I/O ₆	I/O ₇		V _{CC}	Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
											Min	Max	Min	Max	Min		Max
V _{IC}		1						4.5 V	CLOCK		-1.5		-1.5		-1.5	V	
		2						"	I ₀		"		"		"	"	
		3						"	I ₁		"		"		"	"	
		4						"	I ₂		"		"		"	"	
		5						"	I ₃		"		"		"	"	
		6						"	I ₄		"		"		"	"	
		7						"	I ₅		"		"		"	"	
		8						"	I ₆		"		"		"	"	
		9						"	I ₇		"		"		"	"	
		10						"	$\overline{OE}$		"		"		"	"	
		11						"	I/O ₀		"		"		"	"	
		12						"	I/O ₁		"		"		"	"	
		13					-18 mA		"	I/O ₆		"		"		"	"
		14						-18 mA	"	I/O ₇		"		"		"	"
V _{OL}	3007	15						"	I/O ₀		0.5		0.5		0.5	"	
		16						"	I/O ₁							"	
		17						"	O ₂							"	
		18	12 mA					"	O ₃							"	
		19		12 mA				"	O ₄							"	
		20			12 mA			"	O ₅							"	
		21				12 mA		"	I/O ₆							"	
		22					12 mA	"	I/O ₇							"	
V _{OH}	3006	23						"	I/O ₀	2.4		2.4		2.4		"	
		24						"	I/O ₁							"	
		25						"	O ₂							"	
		26	-2 mA					"	O ₃							"	
		27		-2 mA				"	O ₄							"	
		28			-2 mA			"	O ₅							"	
		29				-2 mA		"	I/O ₆							"	
		30					-2 mA	"	I/O ₇							"	
I _{IL}	3009	31						5.5 V	CLOCK		-0.25		-0.25		-0.25	mA	
		32						"	I ₀							"	
		33						"	I ₁							"	
		34						"	I ₂							"	
		35						"	I ₃							"	
		36						"	I ₄							"	
		37						"	I ₅							"	
		38						"	I ₆							"	
		39						"	I ₇							"	
		40						"	$\overline{OE}$							"	
		41						"	I/O ₀							"	
		42						"	I/O ₁							"	
		43					0.4 V		"	I/O ₆						"	
		44						0.4 V	"	I/O ₇						"	

See footnotes at end of table.

TABLE III. Group A inspection for device type 12 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit
																		Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C		
																		Min	Max	Min	Max	Min	Max	
I _{IH}	3010	45	2.7 V									GND					CLOCK		50		50		50	μA
		46		2.7 V													I ₀	20		20		20	"	
		47			2.7 V												I ₁						"	
		48				2.7 V											I ₂						"	
		49					2.7 V										I ₃						"	
		50						2.7 V									I ₄						"	
		51							2.7 V								I ₅						"	
		52								2.7 V							I ₆						"	
		53									2.7 V						I ₇						"	
54												2.7 V			$\overline{OE}$	50		50		50	"			
I _I		55	5.5 V														CLOCK	0.2		0.2		0.2	mA	
		56		5.5 V													I ₀	0.1		0.1		0.1	"	
		57			5.5 V												I ₁						"	
		58				5.5 V											I ₂						"	
		59					5.5 V										I ₃						"	
		60						5.5 V									I ₄						"	
		61							5.5 V								I ₅						"	
		62								5.5 V							I ₆						"	
		63									5.5 V						I ₇						"	
		64											5.5 V				$\overline{OE}$	0.2		0.2		0.2	"	
		65												5.5 V			I/O ₀	0.1		0.1		0.1	"	
		66													5.5 V		I/O ₁						"	
		67															I/O ₆						"	
		68															I/O ₇						"	
		I _O 11/		69	1/	1/	1/	1/	1/	1/	1/	1/	1/		1/ 6/	2.25 V			I/O ₀	-15	-125	-15	-125	-15
70	"			"	"	"	"	"	"	"	"	"	"		2.25 V		I/O ₁						"	
71	"			"	"	"	"	"	"	"	"	"	"			2.25 V	O ₂						"	
72	"			"	"	"	"	"	"	"	"	"	"				O ₃						"	
73	"			"	"	"	"	"	"	"	"	"	"				O ₄						"	
74	"			"	"	"	"	"	"	"	"	"	"				O ₅						"	
75	"			"	"	"	"	"	"	"	"	"	"				I/O ₆						"	
76	"			"	"	"	"	"	"	"	"	"	"				I/O ₇						"	
I _{OZH}		77	"	"	"	"	"	"	"	"	"	"	"	1/ 7/	2.7 V		I/O ₀	100		100		100	μA	
		78	"	"	"	"	"	"	"	"	"	"	"		2.7 V		I/O ₁	100		100		100	"	
		79	"	"	"	"	"	"	"	"	"	"	"			2.7 V	O ₂	20		20		20	"	
		80	"	"	"	"	"	"	"	"	"	"	"				O ₃						"	
		81	"	"	"	"	"	"	"	"	"	"	"				O ₄						"	
		82	"	"	"	"	"	"	"	"	"	"	"				O ₅						"	
		83	"	"	"	"	"	"	"	"	"	"	"				I/O ₆	100		100		100	"	
		84	"	"	"	"	"	"	"	"	"	"	"				I/O ₇	100		100		100	"	
I _{OZL}		85	"	"	"	"	"	"	"	"	"	"	"	"		0.4 V	O ₂	-20		-20		-20	"	
		86	"	"	"	"	"	"	"	"	"	"	"				O ₃						"	
		87	"	"	"	"	"	"	"	"	"	"	"				O ₄						"	
		88	"	"	"	"	"	"	"	"	"	"	"				O ₅						"	
I _{CC}	3005	89														V _{CC}	220		220		220	mA		

See footnotes at end of table.

TABLE III. Group A inspection for device type 12 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminal	Test limits						Unit	
		Test No.	O ₃	O ₄	O ₅	O ₆	I/O ₇	V _{CC}		Subgroup 1 T _C = +25°C		Subgroup 2 T _C = +125°C		Subgroup 3 T _C = -55°C			
										Min	Max	Min	Max	Min	Max		
I _{IH}	3010	45						5.5 V	CLOCK		50		50		50	μA	
		46							I ₀		20		20		20	"	
		47							I ₁		"		"		"	"	
		48							I ₂		"		"		"	"	
		49							I ₃		"		"		"	"	
		50							I ₄		"		"		"	"	
		51							I ₅		"		"		"	"	
		52							I ₆		"		"		"	"	
		53							I ₇		"		"		"	"	
54								$\overline{\text{OE}}$		50		50		50	"		
I _I		55							CLOCK		0.2		0.2		0.2	mA	
		56								I ₀		0.1		0.1		0.1	"
		57								I ₁		"		"		"	"
		58								I ₂		"		"		"	"
		59								I ₃		"		"		"	"
		60								I ₄		"		"		"	"
		61								I ₅		"		"		"	"
		62								I ₆		"		"		"	"
		63								I ₇		"		"		"	"
		64								$\overline{\text{OE}}$		0.2		0.2		0.2	"
		65								I/O ₀		0.1		0.1		0.1	"
		66								I/O ₁		"		"		"	"
		67					5.5 V			I/O ₆		"		"		"	"
		68						5.5 V		I/O ₇		"		"		"	"
I _O 11/		69							I/O ₀	-15	-125	-15	-125	-15	-125	"	
		70							I/O ₁	"	"	"	"	"	"	"	
		71								O ₂	"	"	"	"	"	"	"
		72	2.25 V							O ₃	"	"	"	"	"	"	"
		73		2.25 V						O ₄	"	"	"	"	"	"	"
		74			2.25 V					O ₅	"	"	"	"	"	"	"
		75				2.25 V				I/O ₆	"	"	"	"	"	"	"
		76					2.25 V			I/O ₇	"	"	"	"	"	"	"
I _{OZH}		77							I/O ₀		100		100		100	μA	
		78							I/O ₁		100		100		100	"	
		79								O ₂		20		20		20	"
		80	2.7 V							O ₃		"		"		"	"
		81		2.7 V						O ₄		"		"		"	"
		82			2.7 V					O ₅		"		"		"	"
		83				2.7 V				I/O ₆		100		100		100	"
		84					2.7 V			I/O ₇		100		100		100	"
I _{OZL}		85								O ₂		-20		-20		-20	"
		86	0.4 V							O ₃		"		"		"	"
		87		0.4 V						O ₄		"		"		"	"
		88			0.4 V					O ₅		"		"		"	"
I _{CC}		89							V _{CC}		220		220		220	mA	

See footnotes at end of table.

TABLE III. Group A inspection for device type 12 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Test limits						Unit		
		Test No.	CLK	I ₀	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	I ₇	GND	$\overline{\text{OE}}$	I/O ₀	I/O ₁	O ₂		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C				
																		Min	Max	Min	Max	Min	Max			
Functional tests	3014	90	2/	2/	2/	2/	2/	2/	2/	2/	2/	GND	2/	2/	2/	2/	All outputs		2/		2/		2/			
																		Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C				
																		Min	Max	Min	Max	Min	Max			
t _{SU} 10/	3003	91	3/	3/	3/	3/	3/	3/	3/	3/	3/	GND	6/			4/ 8/	All register outputs	15		15		15		ns		
t _{P(CL)} 10/		92	"	"	"	"	"	"	"	"	"	"	"			"	"	10		10		10		"		
t _{PCL}		93	"	"	"	"	"	"	"	"	"	"	"			"	"		12		12		12	"		
t _{PCH}		94	"	"	"	"	"	"	"	"	"	"	"			"	"		12		12		12	"		
t _{PHL}		95	"	"	"	"	"	"	"	"	"	"	"		4/ 5/	4/ 5/		All I/O's		15		15		15	"	
t _{PLH}		96	"	"	"	"	"	"	"	"	"	"	"		4/ 5/	4/ 5/		All I/O's		15		15		15	"	
t _{PZH}		97	"	"	"	"	"	"	"	"	"	"	"	3/			4/ 8/	All register outputs		12		12		12	"	
t _{PZL}		98	"	"	"	"	"	"	"	"	"	"	"	"			"	"		"		"		"	"	
t _{PHZ}		99	"	"	"	"	"	"	"	"	"	"	"	"			"	"		"		"		"	"	
t _{PLZ}		100	"	"	"	"	"	"	"	"	"	"	"	"			"	"		"		"		"	"	
t _{PZH}		101	"	"	"	"	"	"	"	"	"	"	"	"		4/ 5/	4/ 5/		All I/O's		15		15		15	"
t _{PZL}		102	"	"	"	"	"	"	"	"	"	"	"	"		"	"		"		"		"		"	"
t _{PHZ}		103	"	"	"	"	"	"	"	"	"	"	"	"		"	"		"		"		"		"	"
t _{PLZ}		104	"	"	"	"	"	"	"	"	"	"	"	"		"	"		"		"		"		"	"
f _{MAX}		105	9/	9/	9/	9/	9/	9/	9/	9/	9/	9/	"	6/			9/	All register outputs	50		50		50		MHz	

See footnotes at end of table.

TABLE III. Group A inspection for device type 12 – Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V, or open).

Symbol	MIL-STD-883 method	Cases R, 2	15	16	17	18	19	20	Meas. terminals	Test limits						Unit	
		Test No.	O ₃	O ₄	O ₅	I/O ₆	I/O ₇	V _{CC}		Subgroup 7 T _C = +25°C		Subgroup 8 T _C = +125°C		Subgroup 8 T _C = -55°C			
										Min	Max	Min	Max	Min	Max		
Functional tests	3014	90	2/	2/	2/	2/	2/	2/	5.5 V	All outputs		2/		2/		2/	
										Subgroup 9 T _C = +25°C		Subgroup 10 T _C = +125°C		Subgroup 11 T _C = -55°C			
										Min	Max	Min	Max	Min	Max		
t _{SU} 10/	3003	91	4/ 8/	4/ 8/	4/ 8/			3/	All register outputs	15		15		15		ns	
t _{P(CL)} 10/		92	"	"	"	"	"	"	"	10		10		10		"	
t _{PCL}		93	"	"	"	"	"	"	"		12		12		12	"	
t _{PCH}		94	"	"	"	"	"	"	"		12		12		12	"	
t _{PHL}		95				4/ 5	4/ 5	"	All I/O's		15		15		15	"	
t _{PLH}		96				4/ 5	4/ 5	"	All I/O's		15		15		15	"	
t _{PZH}		97	4/ 8/	4/ 8/	4/ 8/			"	All register outputs		12		12		12	"	
t _{PZL}		98	"	"	"			"	"		"		"		"	"	
t _{PHZ}		99	"	"	"			"	"		"		"		"	"	
t _{PLZ}		100	"	"	"			"	"		"		"		"	"	
t _{PZH}		101				4/ 5	4/ 5	"	All I/O's		15		15		15	"	
t _{PZL}		102				"	"	"	"		"		"		"	"	
t _{PHZ}		103				"	"	"	"		"		"		"	"	
t _{PLZ}		104				"	"	"	"		"		"		"	"	
f _{MAX}		105	9/	9/	9/			4.5 V	All register outputs	50		50		50		MHz	

See footnotes at end of table.

1/ For unprogrammed devices circuit C, for V_{OL} , V_{OH} , I_{OZH} , I_{OZL} , and I_{OS} , use conditions defined for the programming procedures as follows:

V_{OL} :

- a. 10.5 V on pins 2-9, GND on pins 10 and 11, and a clock pulse on pin 1. Outputs are on pins 13, 15, 17, 19.
- b. 10.5 V on pins 3-9, GND 2, 10, and 11, and a clock pulse on pin 1. Outputs are on pins 12 and 14.
- c. 10.5 V on pins 3-9, GND on pins 1, 2, 10, and 11. Outputs are on pins 16 and 18.

V_{OH} :

- a. 10.5 V on pin 11, GND on pins 2-10, and a clock pulse on pin 1. Outputs are on pins 12 - 15.
- b. 10.5 V on pin 1, GND on pins 2-10, and a clock pulse on pin 11. Outputs are on pins 16 - 19.

I_{OZH} :

- a. GND on pins 1-11, outputs are on pins 12-19 for device types 01 and 07. Outputs are on pins 12, 19 for device types 03 and 09. Outputs are on pins 12, 13, 18, and 19 for device types 04 and 10.
- b. GND on pins 1-10, 2.0 V on pin 11, outputs are on pins 12-19 for device types 02 and 08, 13-18 for device types 03 and 09. Outputs are on pins 14-17 for device types 04 and 10.

I_{OZL} :

- a. GND on pins 2-11, and a clock pulse on pin 1. Outputs are on pins 12 and 19 for device types 01 and 07.
- b. GND on pins 2-10, 2.0 V on pin 11, and a clock pulse on pin 1. Outputs are on pins 12-19 for device types 02 and 08. Outputs are on pins 13-18 for device types 03 and 09. Outputs are on pins 14-17 for device types 04 and 10.

I_{OS} :

Applying the proper output test, generate the output condition as specified for V_{OH} . Short only one output at a time. Duration of the short should not exceed 1 second.

2/ The functional test shall verify that no fuses are blown for unprogrammed devices or that the altered item drawing pattern exists for programmed devices, $V_{IH} = 3.0$ V, $V_{IL} = \text{GND}$.

3/ The test shall check all inputs, gates, and outputs that have programmed. The test shall be performed $V_{CC} = 4.5$ V and 5.5 V.

4/ For programmed devices only, the outputs are loaded in accordance with figure 4.

5/ Asynchronous output with internal output enable.

6/ For programmed devices only, external output enable set ($\overline{OE} = \text{GND}$).

7/ For programmed devices only, external output enable set ($\overline{OE} = 2.0$ V).

8/ Synchronous registered output with external output enable (pin 11).

9/ Maximum clock frequency (f_{MAX}) is considered met if the proper output state changes occur with the frequency set to the minimum limit given to table III, or $f_{MAX} = 1/(t_{SU} + t_{P(CL)})$.

10/ t_{SU} and $t_{P(CL)}$ may be tested concurrently with t_{PCL} and t_{PCH} by using values within the maximum test values of table III.

11/ For circuit C I_{OS} test may be replaced with an equivalent I_O test as follows: pins 12-19, delete GND and substitute 2.25 V; pin 20 V_{CC} , delete 5.0 V, substitute 5.5 V; and in the limits columns, delete min/max of -30/-250 and substitute -15/-125.

4.4.4 Group D inspection. Group D inspection shall be in accordance with table V of MIL-PRF-38535 and as follows. End-point electrical parameters shall be as specified in table II herein.

4.5 Methods of inspection. Methods of inspection shall be as specified in the appropriate tables and as follows:

4.5.1 Voltage and current. All voltages given are referenced to the microcircuit ground terminal. Currents given are conventional and positive when flowing into the referenced terminal.

4.6 Programming / verifying procedure for circuit C. The programming specifications on figures 5 and 6, and table IV for circuit C, and the following procedures shall be used for programming the device.

4.6.1 Preverification.

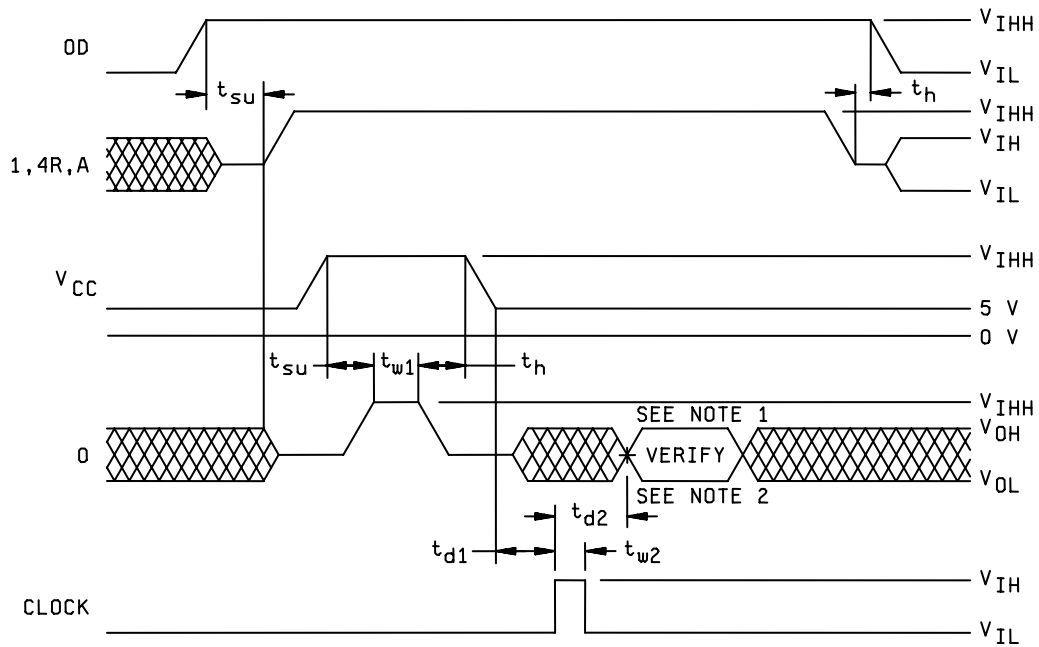
- a. Raise V_{CC} to 5.0 V.
- b. Raise output disable pin, OD, to V_{IHH} .
- c. Select an input line by specifying inputs and L/R as shown in table V for circuit C.
- d. Select a product line by specifying A_0 , A_1 , and A_2 one-of-eight select as shown in table VI for circuit C.
- e. Pulse the clock pin and verify (with clock at V_{IL}) that the output pins, O_0 through O_3 , are in the state corresponding to an unblown fuse. Use the minimum timing conditions as specified on figure 6 for circuit C.
 - (1) For verified unblown conditions, continue procedure from c through e.
 - (2) For verified blown conditions, stop procedure.

4.6.2 Programming algorithm.

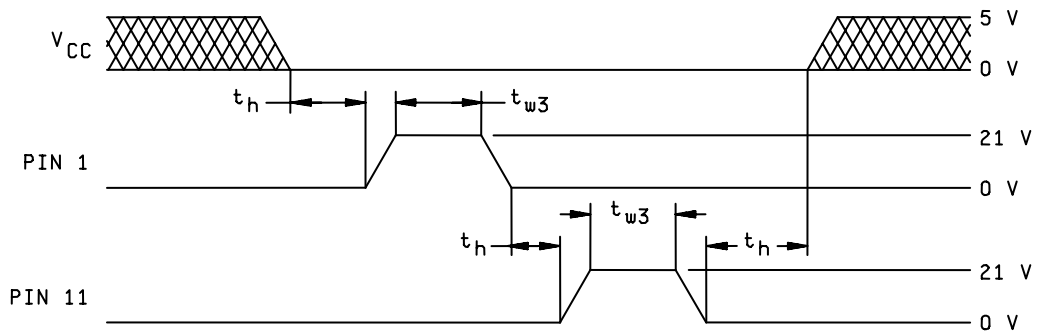
- a. Raise output disable pin, OD, to V_{IHH} .
- b. Lower clock pin to V_{IL} .
- c. Select an input line as specified in 4.6.1c.
- d. Select a product line as specified in 4.6.1d.
- e. Raise V_{CC} to V_{IHH} .
- f. Program the fuse by pulsing the output pins of the selected group – one at a time – to V_{IHH} , see figure 6 for circuit C.
- g. Lower V_{CC} to 5.0 V.
- h. Repeat this procedure from c until pattern is complete.

Pin No.	Product terms 0 thru 31	Product terms 32 thru 63
1	OD	CLOCK
2	I ₀	I ₀
3	I ₁	I ₁
4	I ₂	I ₂
5	I ₃	I ₃
6	I ₄	I ₄
7	I ₅	I ₅
8	I ₆	I ₆
9	I ₇	I ₇
10	GND	GND
11	CLOCK	OD
12	L/R	O ₃
13	A ₂	O ₂
14	A ₁	O ₁
15	A ₀	O ₀
16	O ₃	A ₂
17	O ₂	A ₁
18	O ₁	A ₀
19	O ₀	L/R
20	V _{CC}	V _{CC}

FIGURE 5. Programming pinouts



PROGRAMMING WAVEFORMS



SECURITY FUSE PROGRAMMING

NOTES:

1. A high level during verify interval indicates that programming has not been successful.
2. A low level during verify interval indicates that programming has been successful.

FIGURE 7. Programming waveforms.

TABLE IV. Programming characteristics.

Symbol	Parameters		Limits			Unit
			Min	Typ	Max	
V_{CC}	Verify-level supply voltage		4.5	5.0	5.5	V
V_{IH}	High-level input voltage		2.0		5.5	V
V_{IL}	Low-level input voltage				0.8	V
V_{IHH}	Program-pulse input voltage		10.25	10.5	10.75	V
I_{IHH}	Program-pulse input current	O_0 to O_3		20	50	mA
		OD, L/R		10	25	
		All other inputs		1.5	5	
		V_{CC}		250	500	
t_{W1}	Program-pulse duration at O_0 to O_3 pins		10		50	μs
t_{W2}	Pulse duration at clock		100			ns
	Program-pulse duty cycle at O_0 to O_3 pins				25	%
t_{SU}	Setup time		100			ns
t_h	Hold time		100			ns
t_{d1}	Delay time from V_{CC} to 5 V to clock $\uparrow$		100			μs
t_{d2}	Delay time from clock $\uparrow$ to valid output		200			ns
	Input voltage at pins 1 and 11 to open verify-protect (security) fuse		20	21	22	V
	Input current to open verify-protect (security) fuse				400	mA
t_{W3}	Pulse duration to open verify-protect (security) fuse		20		50	μs
	V_{CC} value during security fuse programming			0	0.4	V

TABLE V. Input line select.

Input line number	Pin name								
	I ₇	I ₆	I ₅	I ₄	I ₃	I ₂	I ₁	I ₀	L/R
0	HH	HH	HH	HH	HH	HH	HH	L	Z
1	HH	HH	HH	HH	HH	HH	HH	H	Z
2	HH	HH	HH	HH	HH	HH	HH	L	HH
3	HH	HH	HH	HH	HH	HH	HH	H	HH
4	HH	HH	HH	HH	HH	HH	L	HH	Z
5	HH	HH	HH	HH	HH	HH	H	HH	Z
6	HH	HH	HH	HH	HH	HH	L	HH	HH
7	HH	HH	HH	HH	HH	HH	H	HH	HH
8	HH	HH	HH	HH	HH	L	HH	HH	Z
9	HH	HH	HH	HH	HH	H	HH	HH	Z
10	HH	HH	HH	HH	HH	L	HH	HH	HH
11	HH	HH	HH	HH	HH	H	HH	HH	HH
12	HH	HH	HH	HH	L	HH	HH	HH	Z
13	HH	HH	HH	HH	H	HH	HH	HH	Z
14	HH	HH	HH	HH	L	HH	HH	HH	HH
15	HH	HH	HH	HH	H	HH	HH	HH	HH
16	HH	HH	HH	L	HH	HH	HH	HH	Z
17	HH	HH	HH	H	HH	HH	HH	HH	Z
18	HH	HH	HH	L	HH	HH	HH	HH	HH
19	HH	HH	HH	H	HH	HH	HH	HH	HH
20	HH	HH	L	HH	HH	HH	HH	HH	Z
21	HH	HH	H	HH	HH	HH	HH	HH	Z
22	HH	HH	L	HH	HH	HH	HH	HH	HH
23	HH	HH	H	HH	HH	HH	HH	HH	HH
24	HH	L	HH	HH	HH	HH	HH	HH	Z
25	HH	H	HH	HH	HH	HH	HH	HH	Z
26	HH	L	HH	HH	HH	HH	HH	HH	HH
27	HH	H	HH	HH	HH	HH	HH	HH	HH
28	L	HH	HH	HH	HH	HH	HH	HH	Z
29	H	HH	HH	HH	HH	HH	HH	HH	Z
30	L	HH	HH	HH	HH	HH	HH	HH	HH
31	H	HH	HH	HH	HH	HH	HH	HH	HH

L = V_{IL}, H = V_{IH}, HH = V_{IHH}, Z = high impedance (e.g 10 kΩ to 5 V).

TABLE VI. Product line select.

Product line number	Pin identification						
	O ₃	O ₂	O ₁	O ₀	A ₂	A ₁	A ₀
0, 32	Z	Z	Z	HH	Z	Z	Z
1, 33	Z	Z	Z	HH	Z	Z	HH
2, 34	Z	Z	Z	HH	Z	HH	Z
3, 35	Z	Z	Z	HH	Z	HH	HH
4, 36	Z	Z	Z	HH	HH	Z	Z
5, 37	Z	Z	Z	HH	HH	Z	HH
6, 38	Z	Z	Z	HH	HH	HH	Z
7, 39	Z	Z	Z	HH	HH	HH	HH
8, 40	Z	Z	HH	Z	Z	Z	Z
9, 41	Z	Z	HH	Z	Z	Z	HH
10, 42	Z	Z	HH	Z	Z	HH	Z
11, 43	Z	Z	HH	Z	Z	HH	HH
12, 44	Z	Z	HH	Z	HH	Z	Z
13, 45	Z	Z	HH	Z	HH	Z	HH
14, 46	Z	Z	HH	Z	HH	HH	Z
15, 47	Z	Z	HH	Z	HH	HH	HH
16, 48	Z	HH	Z	Z	Z	Z	Z
17, 49	Z	HH	Z	Z	Z	Z	HH
18, 50	Z	HH	Z	Z	Z	HH	Z
19, 51	Z	HH	Z	Z	Z	HH	HH
20, 52	Z	HH	Z	Z	HH	Z	Z
21, 53	Z	HH	Z	Z	HH	Z	HH
22, 54	Z	HH	Z	Z	HH	HH	Z
23, 55	Z	HH	Z	Z	HH	HH	HH
24, 56	HH	Z	Z	Z	Z	Z	Z
25, 57	HH	Z	Z	Z	Z	Z	HH
26, 58	HH	Z	Z	Z	Z	HH	Z
27, 59	HH	Z	Z	Z	Z	HH	HH
28, 60	HH	Z	Z	Z	HH	Z	Z
29, 61	HH	Z	Z	Z	HH	Z	HH
30, 62	HH	Z	Z	Z	HH	HH	Z
31, 63	HH	Z	Z	Z	HH	HH	HH

4.6.3 First verification pass/for all fuse location.

- a. Raise V_{CC} to 4.5 V.
- b. Select input line as specified in 4.6.1c.
- c. Select a product line as specified in 4.6.1d.
- d. Pulse the clock pin and verify (with clock at V_{IL}) that the output pins, O_0 through O_3 are in the correct state.
 - (1) For verified output state, continue procedure.
 - (2) For overblown conditions, stop procedure.
 - (3) For underblown condition, reject part.
- e. Repeat this procedure from b until the entire array is exercised.

4.6.4 High voltage verify/for all fuse location.

- a. Raise V_{CC} to 5.5 V.
- b. Repeat from 4.6.3b to 4.6.3d until the entire array is exercised.

Programming should be attempted at room temperatures, 15°C to 30°C. To prevent further programming, security fuses may be blown. Raise V_{CC} to 6.0 V, and raise pins 1 and 11 to V_P for 10 ms to 1 s.

5. PACKAGING

5.1 Packaging requirements. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Service or Defense Agency, or within the military service's system command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

(This section contains information of a general or explanatory nature which may be helpful, but is not mandatory.)

6.1 Intended use. Microcircuits conforming to this specification are intended for logistic support of existing equipment.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of the specification.
- b. PIN and compliance identifier, if applicable (see 1.2).
- c. Requirements for delivery of one copy of the conformance inspection data pertinent to the device inspection lot to be supplied with each shipment by the device manufacturer, if applicable.
- d. Requirements for certificate of compliance, if applicable.
- e. Requirements for notification of change of product or process to contracting activity in addition to notification to the qualifying activity, if applicable.

- f. Requirements for failure analysis (including required test condition of method 5003 of MIL-STD-883), corrective action, and reporting of results, if applicable.
- g. Requirements for product assurance options.
- h. Requirements for special carriers, lead lengths, or lead forming, if applicable. These requirements shall not affect the part number. Unless otherwise specified, these requirements will not apply to direct purchase by or direct shipment to the Government.
- i. Requirement for programming the device, including processing option.
- j. Requirements for "JAN" marking.
- k. Packaging Requirements (see 5.1)

6.3 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Manufacturers List QML-38535 whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from DSCC-VQ, 3990 E. Broad Street, Columbus, Ohio 43218-3990.

6.4 Superseding information. The requirements of MIL-M-38510 have been superseded to take advantage of the available Qualified Manufacturer Listing (QML) system provided by MIL-PRF-38535. Previous references to MIL-M-38510 in this document have been replaced by appropriate references to MIL-PRF-38535. All technical requirements now consist of this specification and MIL-PRF-38535. The MIL-M-38510 specification sheet number and PIN have been retained to avoid adversely impacting existing government logistics systems and contractor's parts lists.

6.5 Abbreviations, symbols, and definitions. The abbreviations, symbols, and definitions used herein are defined in MIL-PRF-38535, MIL-HDBK-1331, and as follows:

GND	Electrical ground (common terminal).
I _{IN}	Current flowing into an input terminal.
L/R	Programming left/right identifier.
V _{IC}	Input clamp voltage
V _{IN}	Voltage level at an input terminal

6.6 Logistic support. Lead materials and finishes (see 3.4) are interchangeable. Unless otherwise specified, microcircuits acquired for Government logistic support will be acquired to device class B (see 1.2.2), lead material and finish C (see 3.4). Longer length leads and lead forming should not affect the part number. It is intended that spare devices for logistic support be acquired in the unprogrammed condition (see 3.8.1) and programmed by the maintenance activity, except where use of quantities for devices with a specific program or pattern justify stocking of preprogrammed devices.

6.7 Substitutability. The cross-reference information below is presented for the convenience of users. Microcircuits covered by this specification will functionally replace the listed generic-industry type. Generic-industry microcircuit types may not have equivalent operational performance characteristics across military temperature ranges or reliability factors equivalent to MIL-M-38510 device types and may have slight physical variations in relation to case size. The presence of this information should not be deemed as permitting substitution of generic-industry types for MIL-M-38510 types or as a waiver of any of the provisions of MIL-PRF-38535.

Military device type	Generic-industry Type	Circuit designator	Fusible Link	Symbol CAGE numbe
01	PAL16L8-20 Texas Instruments	C	TiW	CGO/01295
02	PAL16R8-20 Texas Instruments	C	TiW	---
03	PAL16R6-20 Texas Instruments5	C	TiW	---
04	PAL16R4-20 Texas Instruments	C	TiW	---
05	PAL16L8-30 Texas Instruments	C	TiW	---
06	PAL16R8-30 Texas Instruments	C	TiW	---
07	PAL16R6-30 Texas Instruments	C	TiW	---
08	PAL16R4-30 Texas Instruments	C	TiW	---
09	PAL16L8-15 Texas Instruments	C	TiW	---
10	PAL16R8-15 Texas Instruments	C	TiW	---
11	PAL16R6-15 Texas Instruments	C	TiW	---
12	PAL16R4-15 Texas Instruments	C	TiW	---

6.8 Change from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the changes.

Custodians:
Army - CR
Navy - EC
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC

Review activities:
Army – SM, MI
Navy - AS, CG, MC, SH TD
Air Force – 03, 19, 99

(Project 5962-2005-043)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organization and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <http://assist.daps.dla.mil>.