

MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, CMOS, MULTIPLEXERS/DEMULTIPLEXERS MONOLITHIC SILICON, POSITIVE LOGIC

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

1. SCOPE

1.1 Scope. This specification covers the detail requirements for monolithic, silicon, CMOS logic microcircuits. Two product assurance classes and a choice of case outlines and lead finishes are provided and are reflected in the complete part number.

1.2 Part number. The part number shall be in accordance with MIL-M-38510.

1.2.1 Device type. The device type shall be as follows:

<u>Device type</u>	<u>Circuit</u>
01	Single 15-channel MUX/DEMUX
02	Differential 8-channel MUX/DEMUX
03	Quad 2-line-to-1-line data selector/MUX

1.2.2 Device class. The device class shall be the product assurance level as defined in MIL-M-38510.

1.2.3 Case outline. The case outline shall be designated as follows:

<u>Outline letter</u>	<u>Case outline (see MIL-M-38510, appendix C)</u>
E	D-2 (16-lead, 1/4" x 7/8"), dual-in-line package
F	F-5 (16-lead, 1/4" x 3/8"), flat package
J	D-3 (24-lead, 1/2" x 1-1/4"), dual-in-line package
K	F-6 (24-lead, 3/8" x 5/8"), flat package
Z	F-8 (24-lead, 1/4" x 3/8"), flat package
X	F-5 (16-lead, 1/4" x 3/8"), flat package, except A dimension = 0.1" (2.54 mm) max
Y	F-6 (24-lead, 3/8" x 5/8"), flat package, except A dimension = 0.1" (2.54 mm) max
U	F-8 (24-lead, 1/4" x 3/8"), flat package, except A dimension = 0.1" (2.54 mm) max

NOTES:

1. As an exception to nickel plate or undercoating paragraph of MIL-M-38510, for case outlines X, Y, and U only, the leads of bottom brazed ceramic packages (i.e., configuration 2 of case outlines F-5, F-6, and F-8) may have electroless nickel undercoating which shall be 50 to 200 microinches (1.27 to 5.08 μ m) thick provided the lead finish is hot solder dip (i.e., finish letter A) and provided that, after any lead forming, an additional hot solder dip coating is applied which shall extend from the outer tip of the lead to no more than 0.015 inch (0.38 mm) from the package edge.

2. For bottom or side brazed packages, case outlines F, Y, and U only, the S₁ dimension may go to .000 inch (.00 mm) minimum.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: George C. Marshall Space Flight Center, National Aeronautics and Space Administration, ATTN: EG02, Marshall Space Flight Center, AL 35812 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

1.3 Absolute maximum ratings.

Supply voltage range ($V_{DD}-V_{SS}$)	- - - - -	-0.5 V to +18 V
Input current (each input)	- - - - -	± 10 mA
Input voltage range	- - - - -	$(V_{SS} - 0.5) < V_I \leq (V_{DD} + 0.5)$
Storage temperature range	- - - - -	-65°C to +175°C
Maximum power dissipation (P_D)	- - - - -	200 mW
Lead temperature (soldering, 10 seconds)	- - - - -	+300°C
Thermal resistance, junction-to-case	- - - - -	(See MIL-M-38510, appendix C)
Junction temperature (T_J)	- - - - -	+175°C

1.4 Recommended operating conditions.

Supply voltage range ($V_{DD}-V_{SS}$)	- - - - -	4.5 V to 15 V
Low level input voltage range (V_{IL})	- - - - -	0-1.5 V dc @ $V_{DD} = 5$ V dc, $V_{OL} = 10\% V_{DD}$, $V_{OH} = 90\% V_{DD}$, 0-4.0 V dc @ $V_{DD} = 15$ V dc, 0-2.0 V dc @ $V_{DD} = 10$ V dc
High level input voltage range (V_{IH})	- - - - -	3.5-5.0 V dc @ $V_{DD} = 5$ V dc, $V_{OL} = 10\% V_{DD}$, $V_{OH} = 90\% V_{DD}$, 11.0-15.0 V dc @ $V_{DD} = 15$ V dc, 8.0-10.0 V dc @ $V_{DD} = 10$ V dc
Ambient operating temperature range (T_A)	- - - - -	-55°C to +125°C

2. APPLICABLE DOCUMENTS

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

SPECIFICATION**MILITARY**

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

STANDARD**MILITARY**

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

(Copies of specifications, standards, handbooks, drawings, and publications required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

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

3. REQUIREMENTS

3.1 Detail specification. The individual item requirements shall be in accordance with MIL-M-38510, and as specified herein.

3.2 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-M-38510 and herein. Although eutectic die bonding is preferred, epoxy die bonding may be performed. However, the resin used shall be Dupont 5504 Conductive Silver Paste, or equivalent, which is cured at 200°C $\pm 10^\circ$ C for a minimum of 2 hours. The use of equivalent epoxies or cure cycles shall be approved by the qualifying activity. Equivalency shall be demonstrated in data submitted to the qualifying activity for verification.

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

3.2.2 Logic diagrams. The logic diagrams shall be as specified on figure 2.

3.2.3 Truth tables. The truth tables shall be as specified on figure 3.

3.2.4 Schematic circuits. The schematic circuits shall be submitted to the preparing activity prior to inclusion of a manufacturer's device in this specification and shall be submitted to the qualifying activity as a prerequisite for qualification. All qualified manufacturers' schematics shall be maintained and available upon request.

3.2.5 Case outline. The case outline shall be as specified in 1.2.3.

3.3 Lead material and finish. The lead material and finish shall be in accordance with MIL-M-38510 and 6.4 herein.

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

3.5 Electrical test requirements. The electrical test requirements for each device class shall be the subgroups specified in table II. The electrical tests for each subgroup are described in table III.

3.6 Marking. Marking shall be in accordance with MIL-M-38510.

3.6.1. Total dose radiation hardness identifier. Total dose radiation hardness identifier shall be in accordance with MIL-M-38510 and 4.5.4 herein.

3.6.2 Serialization. All class S devices shall be serialized in accordance with MIL-M-38510.

3.6.3 Correctness of indexing and marking. All devices shall be subjected to the final electrical tests specified in table II after part number marking to verify that they are correctly indexed and identified by part number. Optionally, an approved electrical test may be devised especially for this requirement.

3.7 Microcircuit group assignment. The devices covered by this specification shall be in microcircuit group number 39 (see MIL-M-38510, appendix E).

4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with MIL-M-38510 and methods 5005 and 5007, as applicable, of MIL-STD-883, except as modified herein.

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

- a. Delete the sequence specified in 3.1.9 through 3.1.13 of method 5004 and substitute lines 1 through 7 of table II herein.
- b. Burn-in (method 1015 of MIL-STD-883).
 - (1) Static tests (test condition A) using circuit shown on figure 4, or equivalent. Ambient temperature shall be 125°C minimum. Test duration for each static test shall be 24 hours minimum for class S devices and in accordance with table I of method 1015 for class B devices.
 - (2) Dynamic test (test condition D) using circuit shown on figure 5, or equivalent. Ambient temperature shall be 125°C minimum. Test duration shall be in accordance with table I of method 1015.
- c. Interim and final electrical parameters shall be as specified in table II herein.

- d. For class S devices, post dynamic burn-in, or class B devices, post static burn-in, electrical parameter measurements may, at the manufacturer's option, be performed separately or included in the final electrical parameter requirements.

4.2.1 Percent defective allowable (PDA).

- a. The PDA for class S devices shall be 5 percent for static burn-in and 5 percent for dynamic burn-in, based on the exact number of devices submitted to each separate burn-in.
- b. Static burn-in I and II the failures shall be cumulative for determining PDA.
- c. The PDA for class B devices shall be in accordance with MIL-M-38510 for static burn-in. Dynamic burn-in is not required.
- d. Those devices whose measured characteristics, after burn-in, exceed the specified delta (Δ) limits or electrical parameter limits specified in table III, subgroup 1, are defective and shall be removed from the lot. The verified failures divided by the total number of devices in the lot initially submitted to burn-in shall be used to determine the percent defective for the lot and the lot shall be accepted or rejected based on the specified PDA.

4.3 Qualification inspection. Qualification inspection shall be in accordance with MIL-M-38510. Inspections to be performed shall be those specified in method 5005 of MIL-STD-883 and herein for groups A, B, C, D, and E inspections (see 4.4.1 through 4.4.5).

4.4 Quality conformance inspection. Quality conformance inspection shall be in accordance with MIL-M-38510 and as specified herein. Inspections to be performed shall be those specified in method 5005 of MIL-STD-883 and herein for groups A, B, C, D, and E inspections (see 4.4.1 through 4.4.5).

4.4.1 Group A inspection. Group A inspection shall be in accordance with table I of method 5005 of MIL-STD-883 and as follows:

- a. Tests shall be performed in accordance with table II herein.
- b. Subgroups 5, 6, 7, and 8 of table I of method 5005 of MIL-STD-883 shall be omitted.
- c. Subgroup 4 (C_i measurement) shall be measured only for initial qualification and after process or design changes which may affect input capacitance. Capacitance shall be measured between the designated terminal and V_{SS} at a frequency of 1 MHz.
- d. Subgroup 12 shall be added to the group A inspection requirements for class S devices using an LTPD of 15 and consist of the procedures, test conditions, and limits specified in table III.

4.4.2 Group B inspection. Group B inspection shall be in accordance with table II of method 5005 of MIL-STD-883 and as follows:

- a. Class S steady state life (accelerated) test circuits shall be submitted to the qualifying activity for approval. When the alternate steady state life test is used, the circuit on figure 5, or equivalent, shall be used.
- b. A special subgroup shall be added using an LTPD of 15 for classes S and B, and shall be measured only for initial qualification and after process or design changes. This subgroup shall consist of a high voltage test of the input protection circuits, V_{ZAp} (see 4.5.3).
- c. End-point electrical parameters shall be as specified in table II herein and shall consist only of those subgroups specified in table IIa of test method 5005 of MIL-STD-883, and table II herein. Delta limits shall apply only to subgroup 5 of group B inspections and shall consist of tests specified in table IV herein.

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions $V_{SS} = 0\text{ V}$ $-55^{\circ}\text{C} \leq T_A \leq 125^{\circ}\text{C}$ Unless otherwise specified	Device type	Limits		Unit
				Min	Max	
Positive clamping input to V_{DD}	$V_{IC(pos)}$	$T_A = 25^{\circ}\text{C}$, $V_{DD} = \text{GND}$, $V_{SS} = \text{Open}$, Output = Open, $I_{IN} = 1\text{ mA}$	A11	---	1.5	Vdc
Negative clamping input to V_{SS}	$V_{IC(neg)}$	$T_A = 25^{\circ}\text{C}$, $V_{DD} = \text{Open}$, $V_{SS} = \text{GND}$, Output = Open, $I_{IN} = -1\text{ mA}$	A11	---	-6.0	Vdc
Quiescent supply current	I_{SS} or I_{DD}	$V_{DD} = 18.0\text{ Vdc}$, $V_{IN} = V_{SS}$ or V_{DD} All input combinations	A11	---	-2.5	μA
High-level output voltage	V_{OH1}	$V_{DD} = 15.0\text{ Vdc}$ See table III $ I_O \leq 1\text{ }\mu\text{A}$	A11	14.95	---	Vdc
Low-level output voltage	V_{OL1}	$V_{DD} = 15.0\text{ Vdc}$ See table III $ I_O \leq 1\text{ }\mu\text{A}$	A11	---	0.05	Vdc
3-state output leakage current	I_{OC1}	$V_{DD} = 18.0\text{ Vdc}$ Measure outputs sequentially $V_O = V_{DD}$	03	---	100	nA
	I_{OC2}	$V_{DD} = 18.0\text{ Vdc}$ Measure outputs sequentially $V_O = V_{SS}$	03	---	-100	nA
Input high voltage	V_{IH1}	$V_{DD} = 5.0\text{ Vdc}$ See table III $ I_O \leq 1\text{ }\mu\text{A}$	A11	4.5	---	Vdc
	V_{IH2}	$V_{DD} = 10.0\text{ Vdc}$ See table III $ I_O \leq 1\text{ }\mu\text{A}$	A11	9.0	---	Vdc
	V_{IH3}	$V_{DD} = 15.0\text{ Vdc}$ See table III $ I_O \leq 1\text{ }\mu\text{A}$	A11	13.5	---	Vdc
Input low voltage	V_{IL1}	$V_{DD} = 5.0\text{ Vdc}$ See table III $ I_O \leq 1\text{ }\mu\text{A}$	A11	---	0.5	Vdc
	V_{IL2}	$V_{DD} = 10.0\text{ Vdc}$ See table III $ I_O \leq 1\text{ }\mu\text{A}$	A11	---	1.0	Vdc
	V_{IL3}	$V_{DD} = 15.0\text{ Vdc}$ See table III $ I_O \leq 1\text{ }\mu\text{A}$	A11	---	1.5	Vdc

TABLE I. Electrical performance characteristics -Continued.

Test	Symbol	Conditions $V_{SS} = 0 \text{ V}$ $-55^{\circ}\text{C} \leq T_A \leq 125^{\circ}\text{C}$ Unless otherwise specified	Device type	Limits		Unit
				Min	Max	
Output high (source) current	I_{OH1}	$V_{DD} = 5.0 \text{ Vdc}$, $V_{IN} = V_{DD}$, $V_{OH} = 4.6 \text{ Vdc}$	03	-0.36	---	mAdc
	I_{OH2}	$V_{DD} = 15.0 \text{ Vdc}$, $V_{IN} = V_{DD}$, $V_{OH} = 13.5 \text{ Vdc}$	03	-2.4	---	mAdc
Output low (sink) current	I_{OL1}	$V_{DD} = 5.0 \text{ Vdc}$, $V_{IN} = \text{GND}$, $V_{OL} = 0.4 \text{ Vdc}$	03	0.36	---	mAdc
	I_{OL2}	$V_{DD} = 15.0 \text{ Vdc}$, $V_{IN} = \text{GND}$, $V_{OL} = 1.5 \text{ Vdc}$	03	2.4	---	mAdc
Input leakage current <u>1/</u>	I_{IH}	$V_{DD} = 18.0 \text{ Vdc}$ Measure inputs sequentially connect all unused inputs to V_{DD} or V_{SS}	A11	---	45	nA
	I_{IL}	$V_{DD} = 18.0 \text{ Vdc}$ Measure inputs sequentially connect all unused inputs to V_{DD} or V_{SS}	A11	---	-45	nA
Switch "on" resistance	R_{ON1}	$V_{DD} = 2.5 \text{ V}$, $V_{SS} = -2.5 \text{ V}$ See table III	01,02	---	900	Ω
	R_{ON2}	$V_{DD} = 5.0 \text{ V}$, $V_{SS} = -5.0 \text{ V}$ See table III	01,02	---	325	Ω
	R_{ON3}	$V_{DD} = 7.5 \text{ V}$, $V_{SS} = -7.5 \text{ V}$ See table III	01,02	---	230	Ω
Input, control, output, feedthrough capacitance	C_C	$V_{DD} = 0 \text{ Vdc}$, $f = 1 \text{ MHz}$, $T_A = 25^{\circ}\text{C}$ (see table III)	A11	---	7.5	pF
	C_{IS}		01,02	---	7.5	pF
	C_{IOS}		01,02	---	0.4	pF
	C_{OS}		01	---	75	pF
			02	---	50	pF
Switch leakage current	I_{DOFF1}	$V_{DD} = 5.0 \text{ Vdc}$	01,02	---	+100	mA
	I_{DOFF2}	$V_{DD} = 10.0 \text{ Vdc}$	01,02	---	+200	mA
	I_{DOFF3}	$V_{DD} = 15.0 \text{ Vdc}$	01,02	---	+500	mA
Propagation delay times: O/I to I/O	t_{PLH1} , t_{PHL1}	$V_{DD} = 5.0 \text{ Vdc}$, $C_L = 50 \text{ pF}$, $R_L = 10 \text{ k}\Omega$ (see figures 10 and 11)	01,02	3	77	ns

1/ Input current of one input node.

TABLE I. Electrical performance characteristics -Continued.

Test	Symbol	Conditions $V_{SS} = 0\text{ V}$ $-55^{\circ}\text{C} \leq T_A \leq 125^{\circ}\text{C}$ Unless otherwise specified	Device type	Limits		Unit
				Min	Max	
Propagation delay times: Data input to output	t_{PLH1} , t_{PHL1}	$V_{DD} = 5.0\text{ Vdc}$, $C_L = 50\text{ pF}$ $R_L = 200\text{ k}\Omega$ (see figure 16)	03	15	420	ns
Propagation delay times: Control inputs to I/O		$V_{DD} = 5.0\text{ Vdc}$, $C_L = 50\text{ pF}$, $R_L = 10\text{ k}\Omega$ (see figures 12 and 13)				
Low to high level	t_{PLH2}		01,02	30	830	ns
High to low level	t_{PHL2}		01,02	20	560	ns
Propagation delay times: Input select to output	t_{PLH2} , t_{PHL2}	$V_{DD} = 5.0\text{ Vdc}$, $C_L = 50\text{ pF}$, $R_L = 200\text{ k}\Omega$ (see figure 17)	03	18	490	ns
Propagation delay times: Inhibit to I/O		$V_{DD} = 5.0\text{ Vdc}$, $C_L = 50\text{ pF}$, $R_L = 10\text{ k}\Omega$ (see figures 14 and 15)				
Low to high level	t_{PLH3}		01,02	30	830	ns
High to low level	t_{PHL3}		01,02	20	560	ns
3-state delay times:		$V_{DD} = 5.0\text{ Vdc}$, $C_L = 50\text{ pF}$, $R_L = 1\text{ k}\Omega$ (see figure 18)				
Output high to high impedance	t_{PHZ}		03	9	250	ns
High impedance to output high	t_{PZH}		03	9	250	ns
High impedance to output low	t_{PZL}		03	9	250	ns
Output low to high impedance	t_{PLZ}		03	9	250	ns
Transition times	t_{THL} , t_{TLH}	$V_{DD} = 5.0\text{ Vdc}$, $C_L = 50\text{ pF}$, $R_L = 200\text{ k}\Omega$ (see figure 16)	03	10	280	ns
Propagation delay times: O/I to I/O	t_{PLH1} , t_{PHL1}	$V_{DD} = 10.0\text{ Vdc}$, $T_A = 25^{\circ}\text{C}$, $R_L = 10\text{ k}\Omega$ $C_L = 50\text{ pF}$ (see figures 10 and 11)	01,02	1	25	ns
Propagation delay times: Data input to output	t_{PLH1} t_{PHL1}	$V_{DD} = 10.0\text{ Vdc}$, $T_A = 25^{\circ}\text{C}$, $R_L = 200\text{ k}\Omega$ $C_L = 50\text{ pF}$ (see figure 16)	03	7	140	ns

TABLE I. Electrical performance characteristics -Continued.

Test	Symbol	Conditions $V_{SS} = 0 \text{ V}$ $-55^{\circ}\text{C} \leq T_A \leq 125^{\circ}\text{C}$ Unless otherwise specified	Device type	Limits		Unit
				Min	Max	
Propagation delay times: Control inputs to I/O Low to high level High to low level	t_{PLH2}	$V_{DD} = 10.0 \text{ Vdc},$ $T_A = 25^{\circ}\text{C},$ $R_L = 10 \text{ k}\Omega,$ $C_L = 50 \text{ pF}$ (see figures 12 and 13)	01,02	13	250	ns
	t_{PHL2}		01,02	8	150	ns
Propagation delay times: Input select to output	$t_{PLH2},$ t_{PHL2}	$V_{DD} = 10.0 \text{ Vdc},$ $T_A = 25^{\circ}\text{C},$ $R_L = 200 \text{ k}\Omega,$ $C_L = 50 \text{ pF}$ (see figure 17)	03	8	170	ns
Propagation delay times: Inhibit to I/O Low to high level High to low level	t_{PLH3}	$V_{DD} = 10.0 \text{ Vdc},$ $T_A = 25^{\circ}\text{C},$ $R_L = 10 \text{ k}\Omega,$ $C_L = 50 \text{ pF}$ (see figures 14 and 15)	01,02	13	250	ns
	t_{PHL3}		01,02	8	150	ns
3-state delay times: Output high to high impedance High impedance to output high High impedance to low output Low output to high impedance	t_{PHZ}	$V_{DD} = 10.0 \text{ Vdc},$ $T_A = 25^{\circ}\text{C},$ $R_L = 1 \text{ k}\Omega,$ $C_L = 50 \text{ pF}$ (see figure 18)	03	5	100	ns
	t_{PZH}		03	5	100	ns
	t_{PZL}		03	5	100	ns
	t_{PLZ}		03	5	100	ns
Transition times $t_{THL},$ t_{TLH}	$t_{THL},$ t_{TLH}	$V_{DD} = 10.0 \text{ Vdc},$ $T_A = 25^{\circ}\text{C},$ $R_L = 200 \text{ k}\Omega,$ $C_L = 50 \text{ pF}$ (see figure 16)	03	5	100	ns
Input test voltage	V_{ZAP}	$C_1 = 100 \text{ pF}$ $R_Z = 1.5 \text{ k}\Omega$ (see 4.5.3)	A11	400	---	V

TABLE II. Burn-in and electrical test requirements.

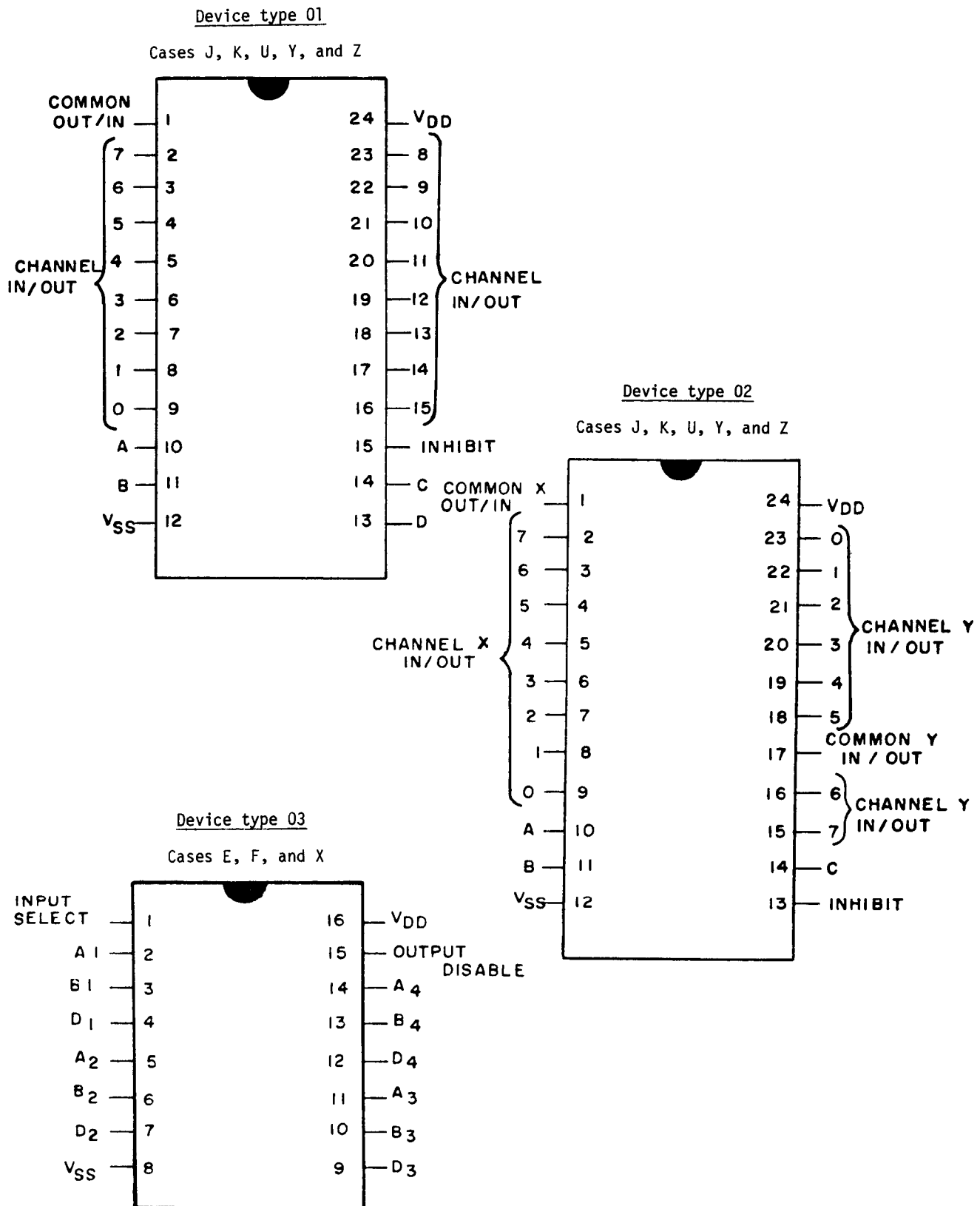
Line no.	Applicable tests and MIL-STD-883 test methods	Class S device <u>3/</u>				Class B devices <u>3/</u>			
		Ref. par.	Table 2/ III sub-groups	Table 1/ IV delta limits	Test circuit figure	Ref. par.	Table 2/ III sub-groups	Table 1/ IV delta limits	Test circuit figure
1	Interim electrical parameters (method 5004)		1				1		
2	Static burn-in I (method 1015)	4.2b. 4.5.2			9	4.2b. 4.5.2	<u>4/</u>		4
3	Same as line 1		1*	Δ		4.2d.	1*	Δ	
4	Dynamic burn-in I (method 1015)	4.2b. 4.5.2			5				
5	Same as line 1	4.2.d.	1*	Δ					
6	Final electrical parameters (method 5004)		1*,2,3,9				1*,2,3,9		
7	Group A test requirements (method 5005)	4.4.1	1,2,3,4, 9,10,11, 12			4.4.1	1,2,3, 4,9		
8	Group B end-point parameters (method 5005)	4.4.2	1,2,3, 9,10,11	Δ					
9	Group C end point electrical parameters (method 5005)					4.4.3	1,2,3	Δ	
10	Additional group C tests, (method 5005)					4.4.3c	10,11		
13	Group D end-point electrical parameters (method 5005)	4.4.4	1,2,3			4.4.4	1,2,3		

1/ (Δ) indicates delta limit shall be required only on table III subgroup 1 where specified, and delta values shall be computed with reference to the previous interim electrical parameters.

2/ (*) indicates PDA applied to subgroup 1 (see 4.2.1).

3/ Blank spaces indicate tests are not applicable.

4/ The device manufacturer may at his option either perform delta measurements or within 24 hours after burn-in (or removal of bias) perform the final electrical parameter measurements.

FIGURE 1. Terminal connections.

Device type 01

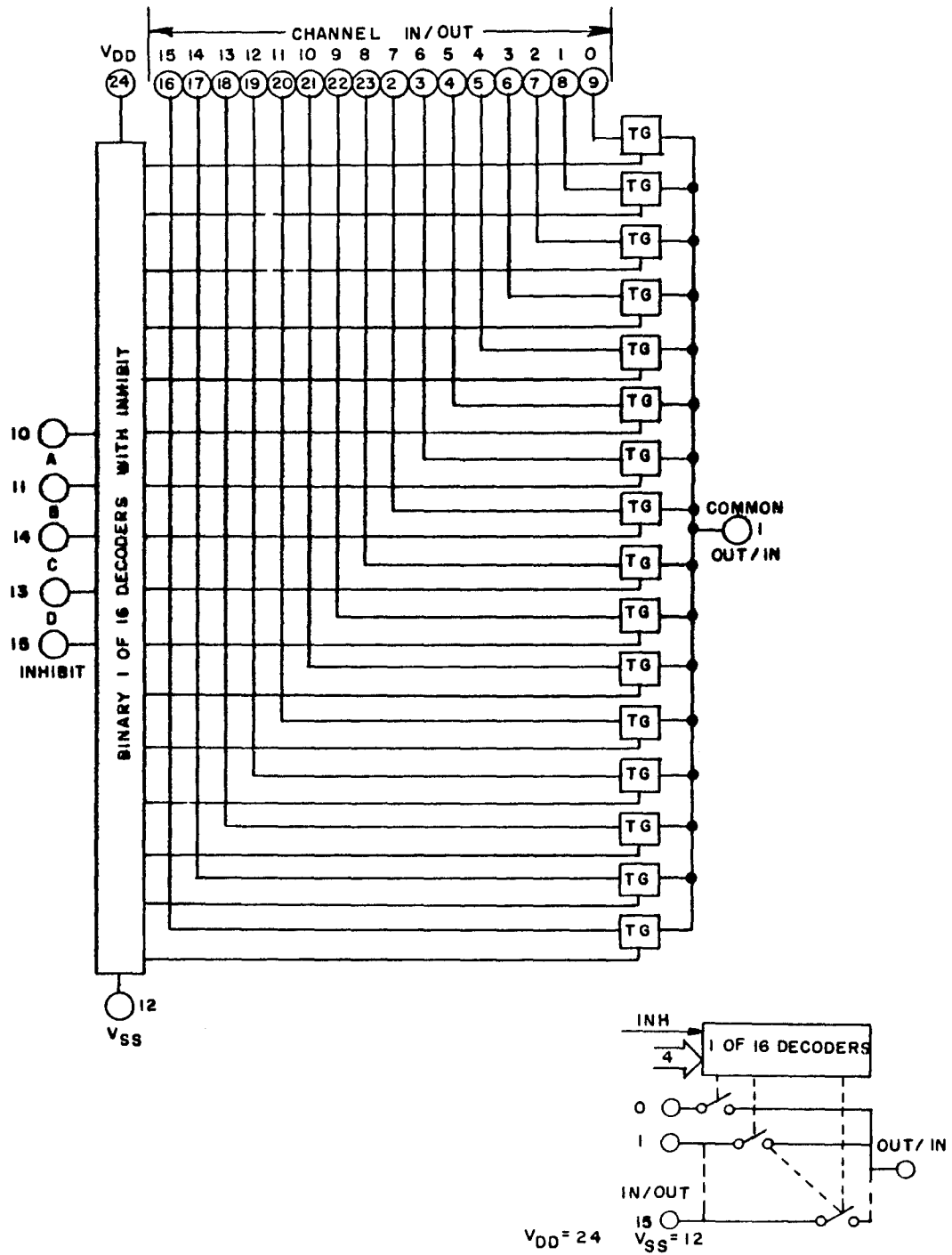


FIGURE 2. Logic diagrams.

Device type 02

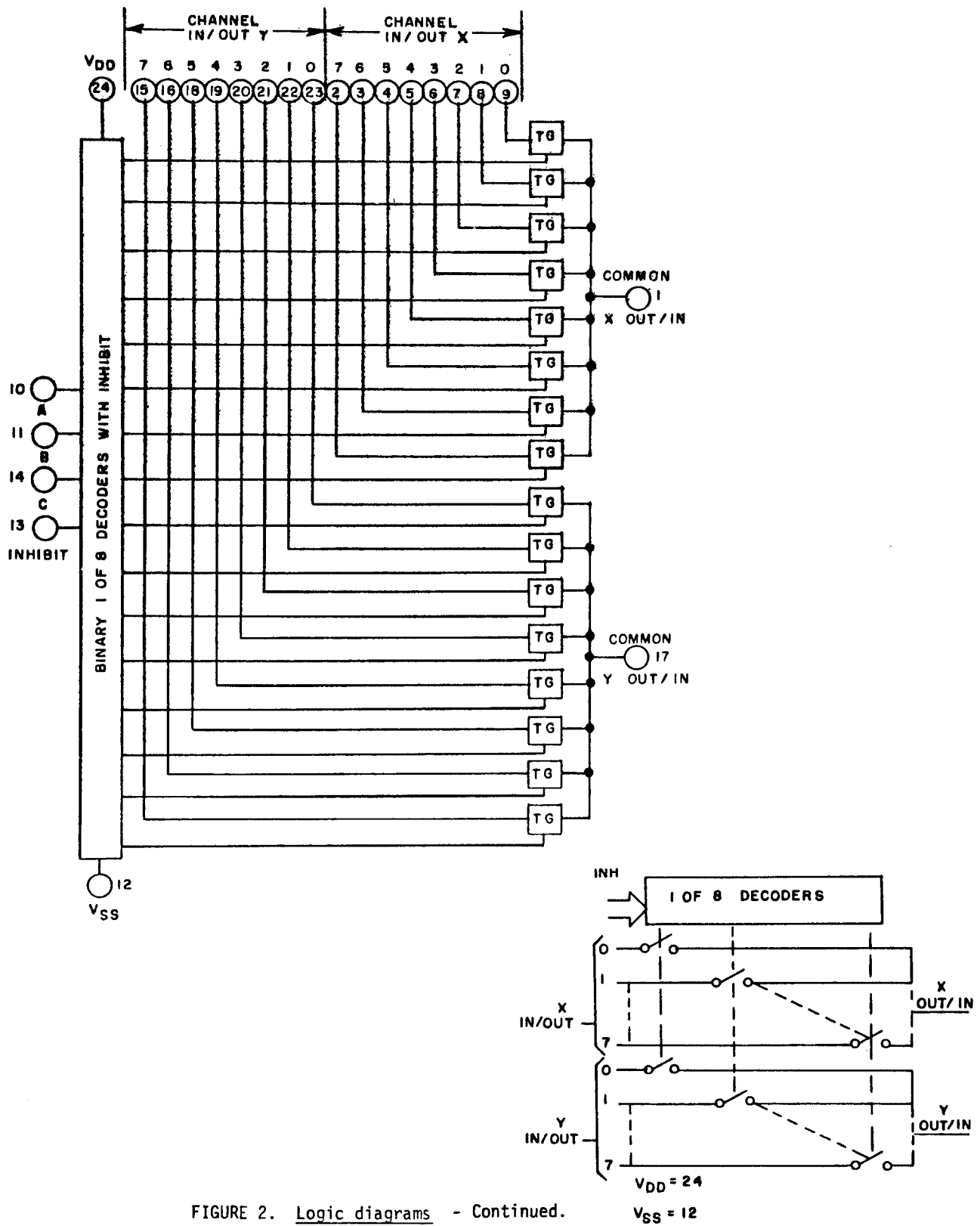


FIGURE 2. Logic diagrams - Continued.

Device type 03

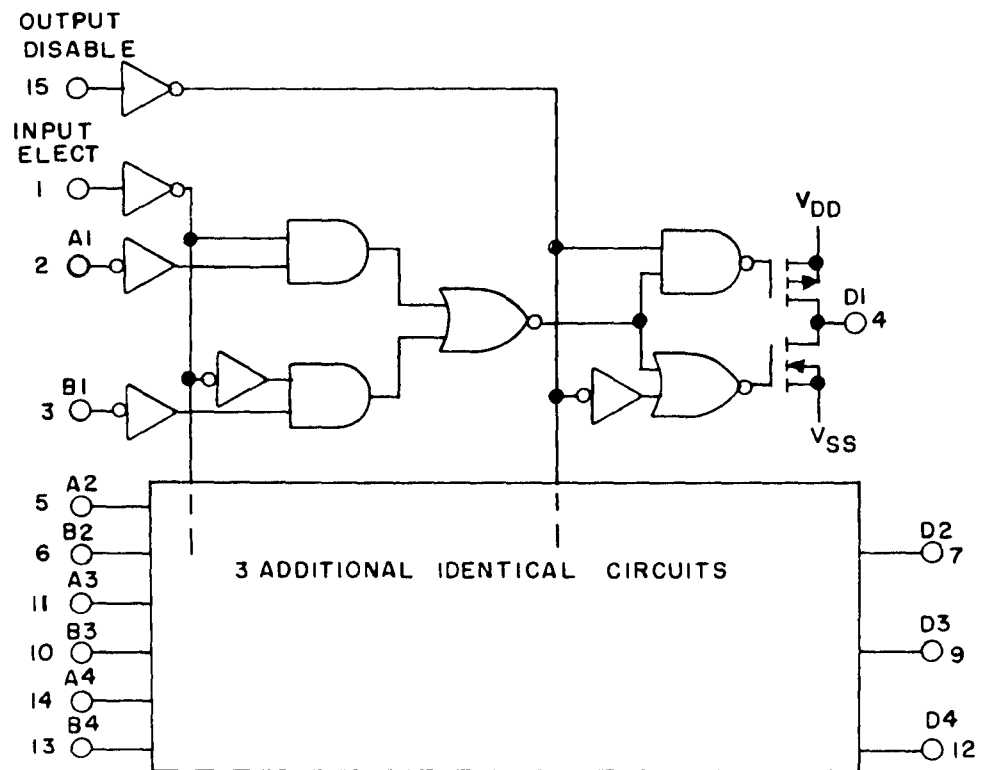


FIGURE 2. Logic diagrams - Continued.

Device type 01

A	B	C	D	INH	SELECTED CHANNEL
X	X	X	X	1	None
0	0	0	0	0	0
1	0	0	0	0	1
0	1	0	0	0	2
1	1	0	0	0	3
0	0	1	0	0	4
1	0	1	0	0	5
0	1	1	0	0	6
1	1	1	0	0	7
0	0	0	1	0	8
1	0	0	1	0	9
0	1	0	1	0	10
1	1	0	1	0	11
0	0	1	1	0	12
1	0	1	1	0	13
0	1	1	1	0	14
1	1	1	1	0	15

Device type 02

A	B	C	INH	SELECTED CHANNEL
X	X	X	1	None
0	0	0	0	0X, 0Y
1	0	0	0	1X, 1Y
0	1	0	0	2X, 2Y
1	1	0	0	3X, 3Y
0	0	1	0	4X, 4Y
1	0	1	0	5X, 5Y
0	1	1	0	6X, 6Y
1	1	1	0	7X, 7Y

X = DON'T CARE

LOGIC 1 = HIGH

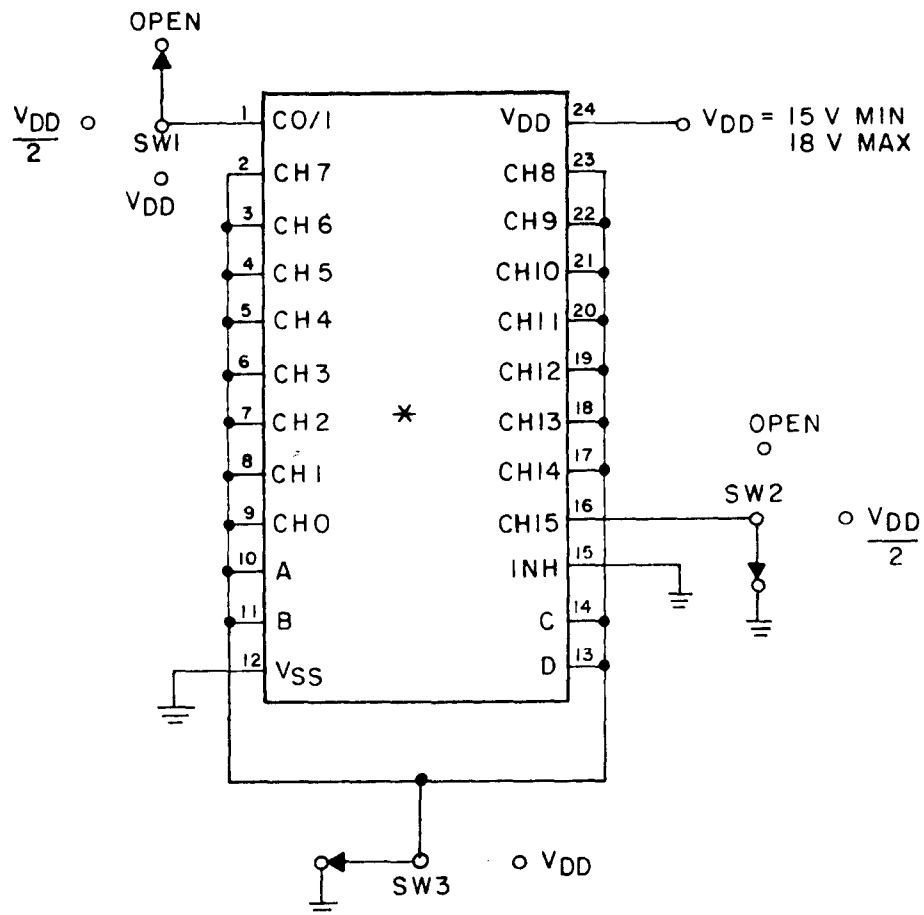
LOGIC 0 = LOW

Z = HIGH IMPEDANCE

Device type 03

INPUTS				OUTPUT
3 - STATE OUTPUT DISABLE	SELECT	A	B	D
1	X	X	X	Z
0	0	0	X	0
0	0	1	X	1
0	1	X	0	0
0	1	X	1	1

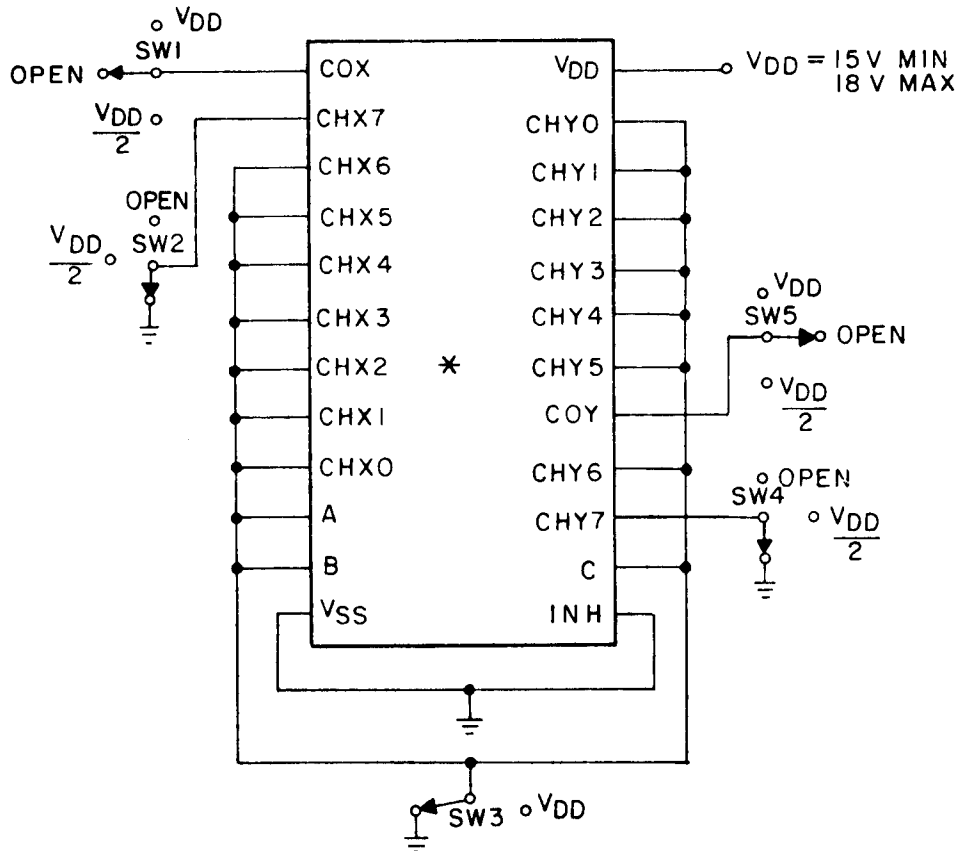
FIGURE 3. Truth tables.

Device type 01

NOTES:

1. For static burn-in I, connect the switches as follows: Switch 1 = open or $V_{DD}/2$, switch 2 = GND, switch 3 = GND.
2. For static burn-in II, connect the switches as follows: Switch 1 = V_{DD} , switch 2 = open or $V_{DD}/2$, switch 3 = V_{DD} .
3. Except for V_{DD} and V_{SS} , each terminal shall be connected through a resistor whose value is $2\text{ k}\Omega$ to $47\text{ k}\Omega$. The actual measured value of the resistor selected shall not exceed $\pm 20\%$ of its branded value due to use, heat, or age.

FIGURE 4. Static burn-in tests.

Device type 02

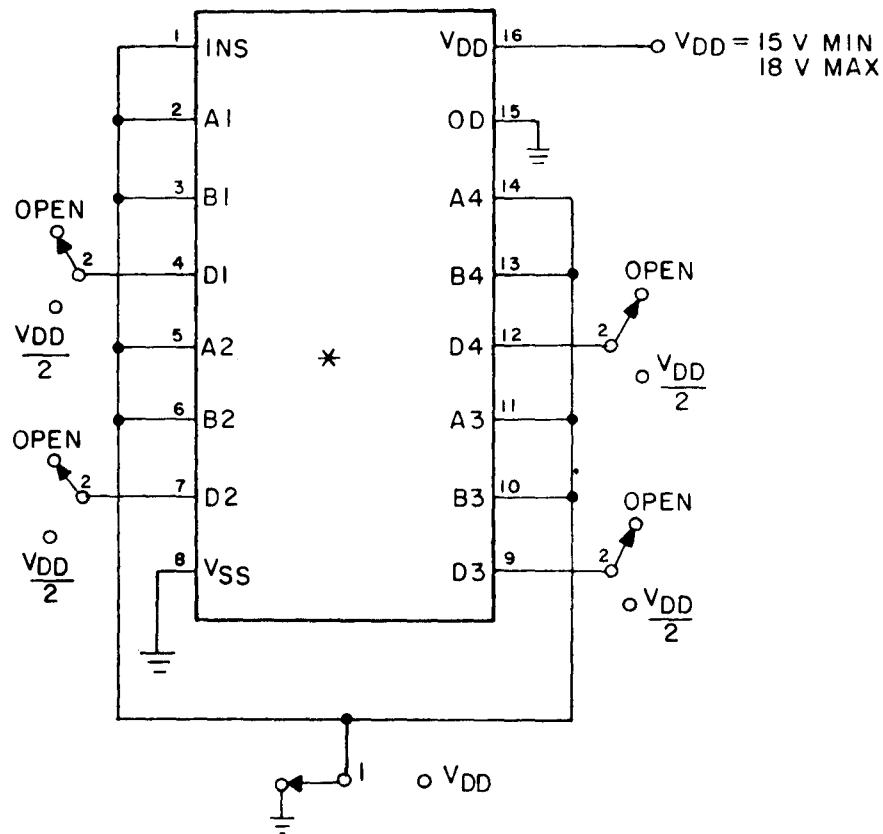
* SEE NOTE 3

NOTES:

1. For static burn-in I, connect the switches as follows: Switches 1 and 5 = open or $V_{DD}/2$, switches 2, 3 and 4 = GND.
2. For static burn-in II, connect the switches as follows: Switches 1, 3 and 5 = V_{DD} , switches 2 and 4 = open or $V_{DD}/2$.
3. Except for V_{DD} and V_{SS} , each terminal shall be connected directly to V_{DD} or V_{SS} , or through a resistor whose value is 2 k Ω to 47 k Ω . The actual measured value of the resistor selected shall not exceed $\pm 20\%$ of its branded value due to use, heat, or age.

FIGURE 4. Static burn-in tests - Continued.

Device type 03

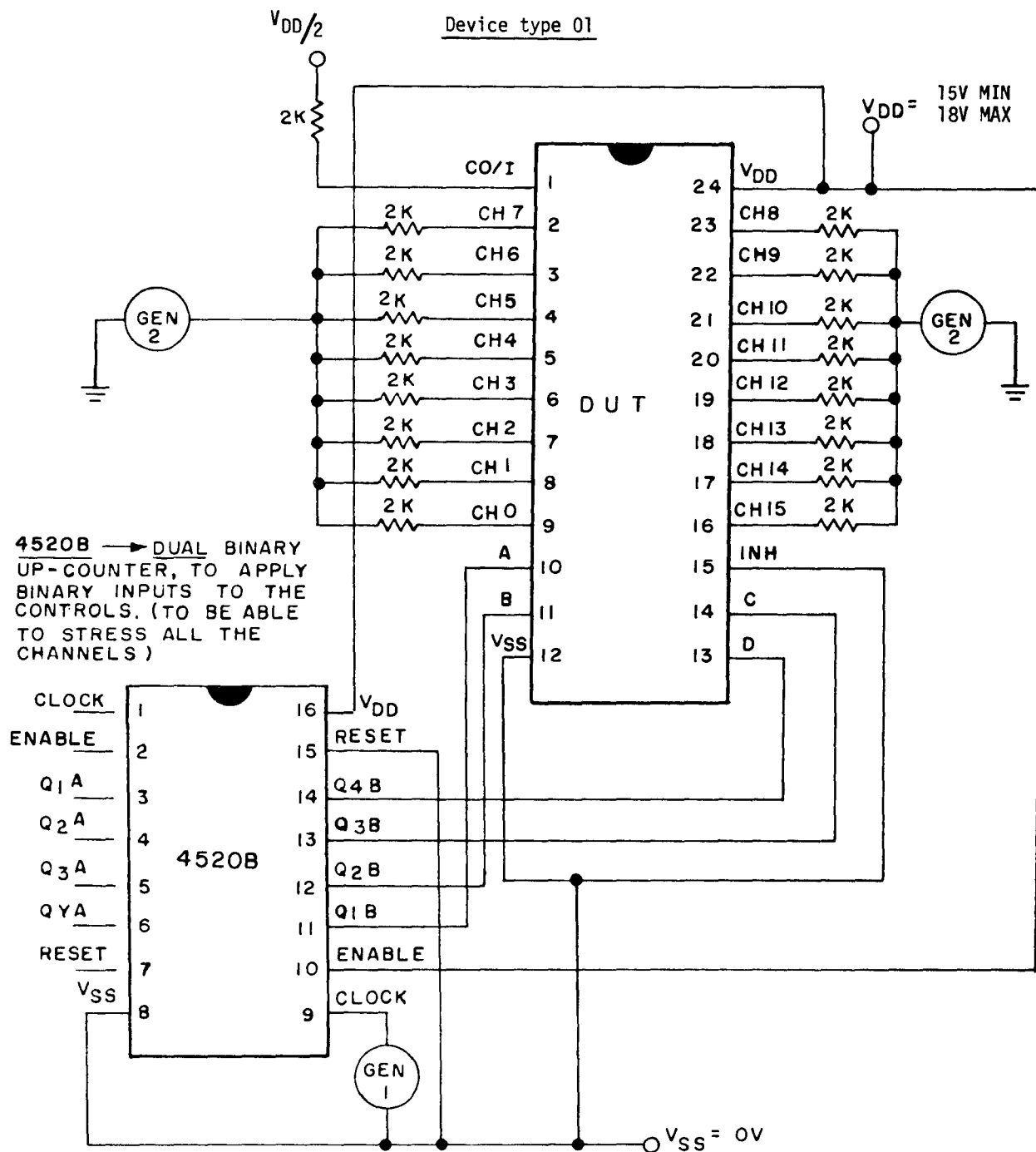


* SEE NOTE 3

NOTES:

1. For static burn-in I, all inputs are connected to 0 volts, switch position 1.
2. For static burn-in II, all inputs are connected to V_{DD} , switch position 2.
3. Except for V_{DD} and V_{SS} , each terminal shall be connected through a resistor whose value is $2\text{ k}\Omega$ to $47\text{ k}\Omega$. The actual measured value of the resistor selected shall not exceed $\pm 20\%$ of its branded value due to use, heat or age.
4. Output may be in switch position 1 or 2.
5. $V_{DD}/2 = V_{DD}/2 \pm 1.0\text{ V}$.

FIGURE 4. Static burn-in tests - Continued.

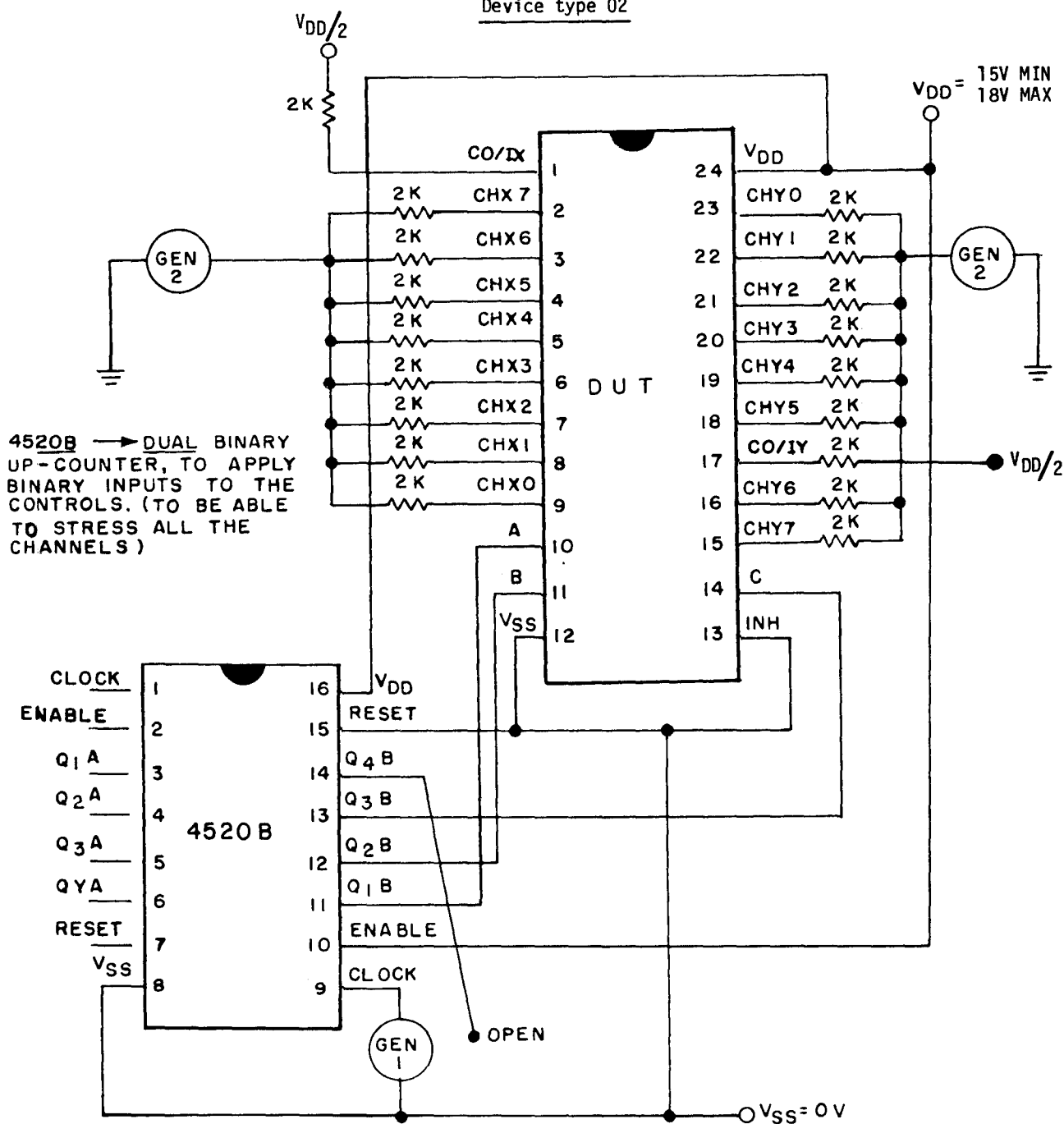


NOTES:

1. Except for V_{DD} and V_{SS} , each terminal shall be connected through a resistor whose value is 2 k Ω to 47 k Ω . The actual measured value of the resistor selected shall not exceed $\pm 20\%$ of its branded value due to use, heat or age.
2. Input signal requirements:
 - a. Square wave, 50% duty cycle.
 - b. 25 kHz < PRR < 1 MHz.
 - c. t_{TLH} and t_{THL} < 1 μ s.
 - d. Voltage level:
 - Minimum = $V_{SS} - 0.5$ V, +10% V_{DD} .
 - Maximum = $V_{DD} + 0.5$, -10% V_{DD} .

FIGURE 5. Dynamic burn-in and steady state life test circuits.

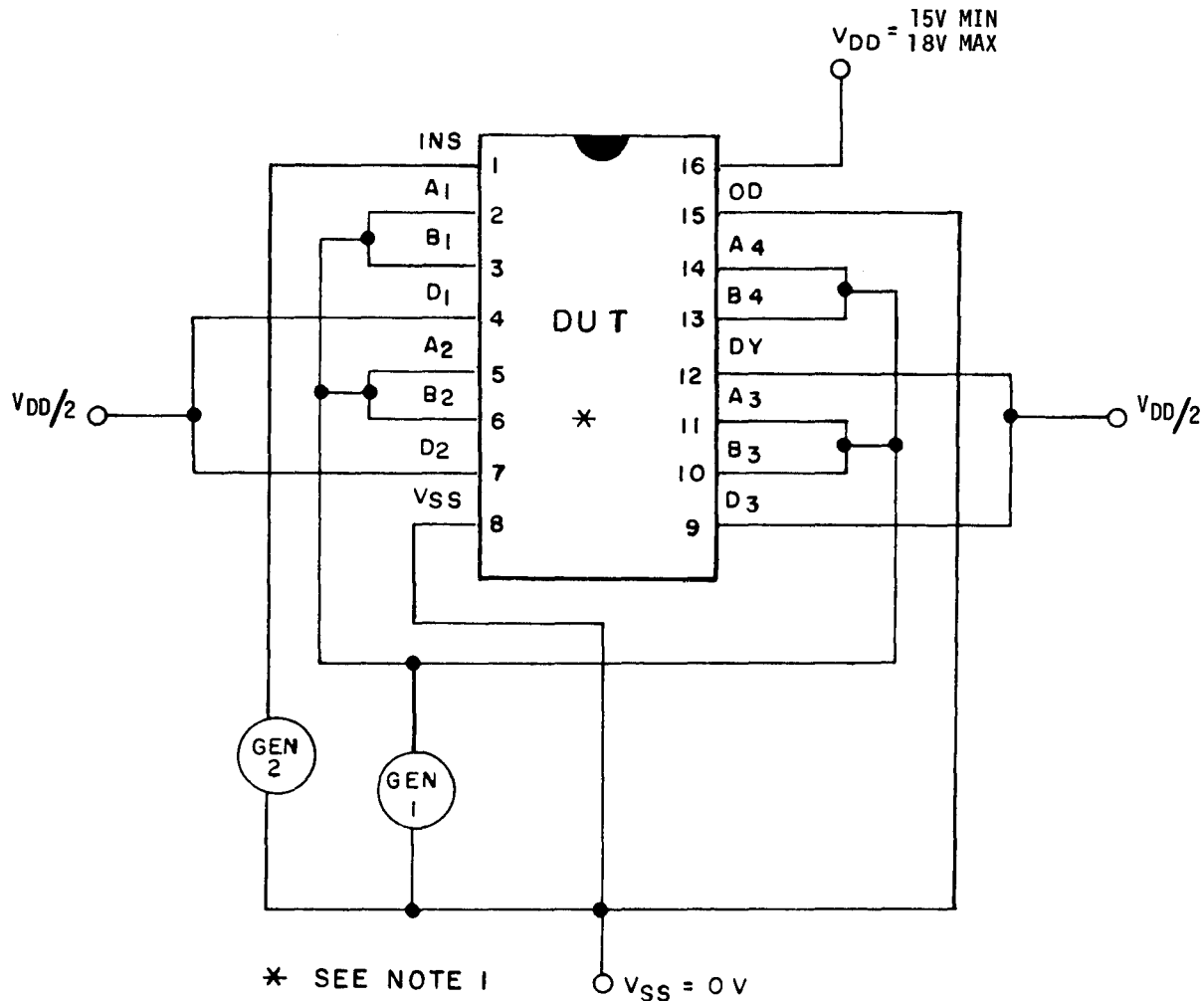
Device type 02



NOTES:

- Except for V_{DD} and V_{SS}, each terminal shall be connected through a resistor whose value is 2 kΩ to 47 kΩ. The actual measured value of the resistor selected shall not exceed ±20% of its branded value due to use, heat or age.
- Input signal requirements:
 - Square wave, 50% duty cycle.
 - 25 kHz < PRR < 1 MHz.
 - t_{PLH} and t_{PHL} < 1 μs.
 - Voltage level:
 - Minimum = V_{SS} - 0.5 V, +10% V_{DD}.
 - Maximum = V_{DD} + 0.5 V, -10% V_{DD}.

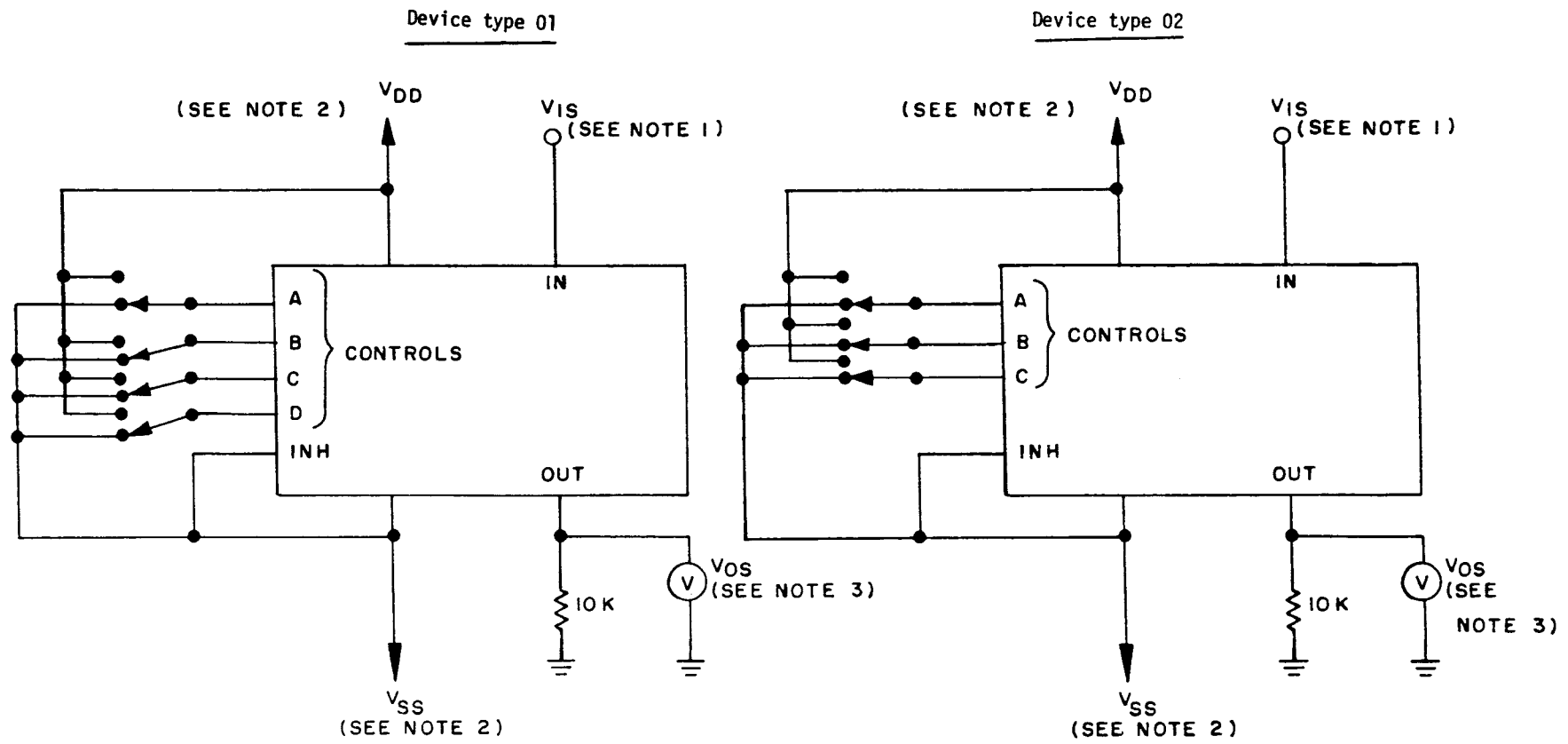
FIGURE 5. Dynamic burn-in and steady state life test circuits - Continued.

Device type 03

NOTES:

1. Except for V_{DD} and V_{SS} , each terminal shall be connected through a resistor whose value is 2 k Ω to 47 k Ω . The actual measured value of the resistor selected shall not exceed $\pm 20\%$ of its branded value due to use, heat or age.
2. Input signal requirements:
 - a. Square wave, 50% duty cycle.
 - b. 25 kHz < PRR < 1 MHz.
 - c. t_{TLH} and t_{THL} < 1 μ s.
 - d. Voltage level:
 - Minimum = $V_{SS} - 0.5$ V, +10% V_{DD} .
 - Maximum = $V_{DD} + 0.5$, -10% V_{DD} .
3. Generators 1 and 2 should have frequencies which are dissonant and free-running with respect with each other.

FIGURE 5. Dynamic burn-in and steady state life test circuits. - Continued.



NOTES:

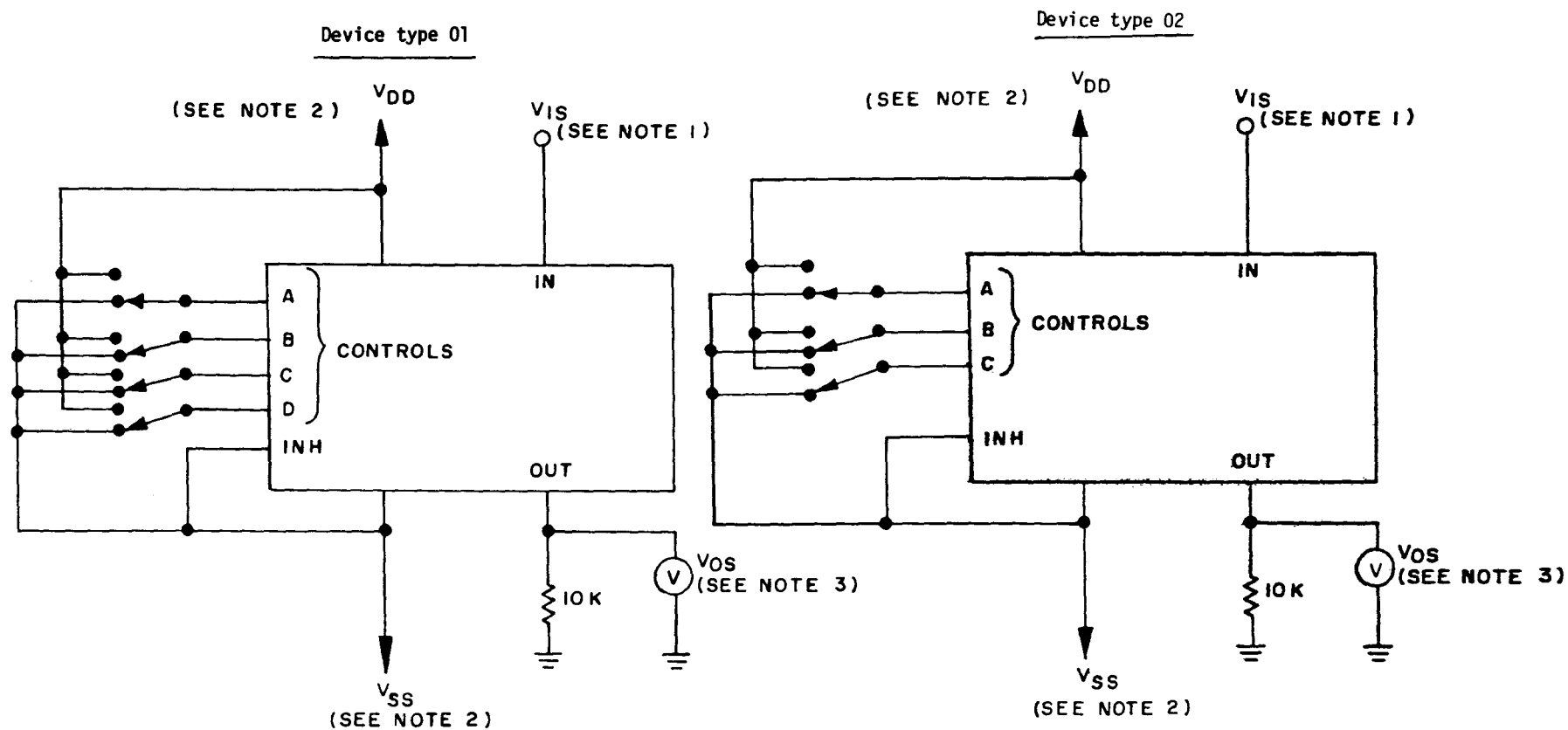
	R_{ON1} number	R_{ON1} (1)	R_{ON1} (2)	R_{ON1} (3)	R_{ON1} (4)
1.	V_{IS}	-2.0 V	-0.9 V	+1.0 V	+2.0 V

2. Conditions V_{DD} V_{SS} : $V_{DD} = 2.5$ V, $V_{SS} = -2.5$ V3. Translation from V_{OS} to R_{ON} :

$$R_{ON} = \frac{V_{IS} - V_{OS}}{V_{OS}/10 \text{ k}\Omega}$$

4. See table III for complete terminal conditions.

FIGURE 6. ON resistance test.



NOTES:	R_{ON2} number	R_{ON2} (1)	R_{ON2} (2)	R_{ON2} (3)	R_{ON2} (4)
1.	V_{IS}	-5.0 V	-3.0 V	+3.5 V	+5.0 V

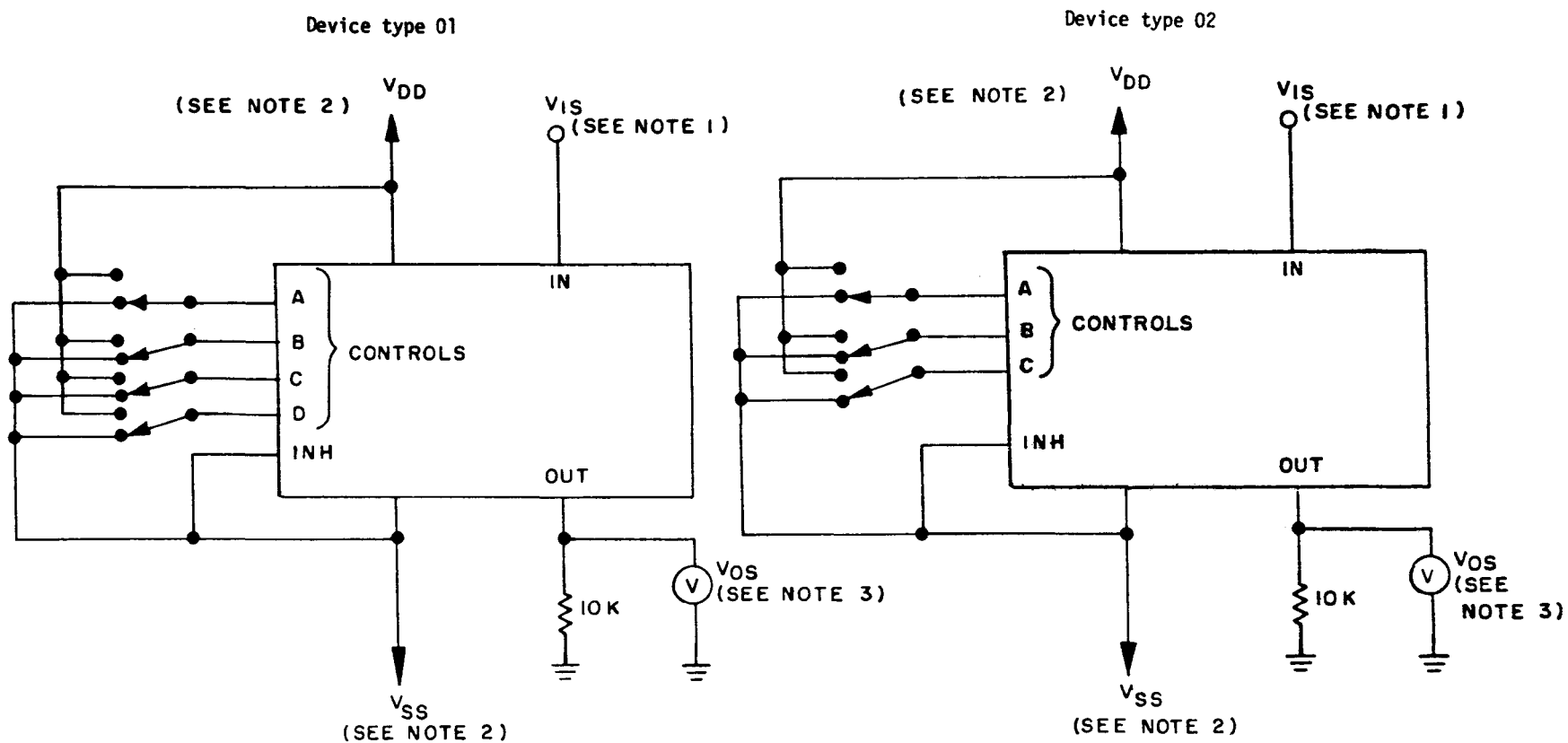
2. Conditions V_{DD} and V_{SS} : $V_{DD} = 5\text{ V}$, $V_{SS} = -5\text{ V}$

3. Translation from V_{OS} to R_{ON} :

$$R_{ON} = \frac{V_{IS} - V_{OS}}{V_{OS}/10\text{ k}\Omega}$$

4. See table III for complete terminal conditions.

FIGURE 7. On resistance test.



NOTES:

NOTES:	R_{ON3} number	R_{ON3} (1)	R_{ON3} (2)	R_{ON3} (3)	R_{ON3} (4)	R_{ON3} (5)
1.	V_{IS}	-7.5 V	-5.0V	0V	+6.0 V	+7.5 V

2. Conditions V_{DD} and V_{SS} : $V_{DD} = 7.5$ V, $V_{SS} = -7.5$ V3. Translation from V_{OS} to R_{ON} :

$$R_{ON} = \frac{V_{IS} - V_{OS}}{V_{OS}/10 \text{ k}\Omega}$$

4. See table III for complete terminal conditions.

FIGURE 8. ON resistance test.

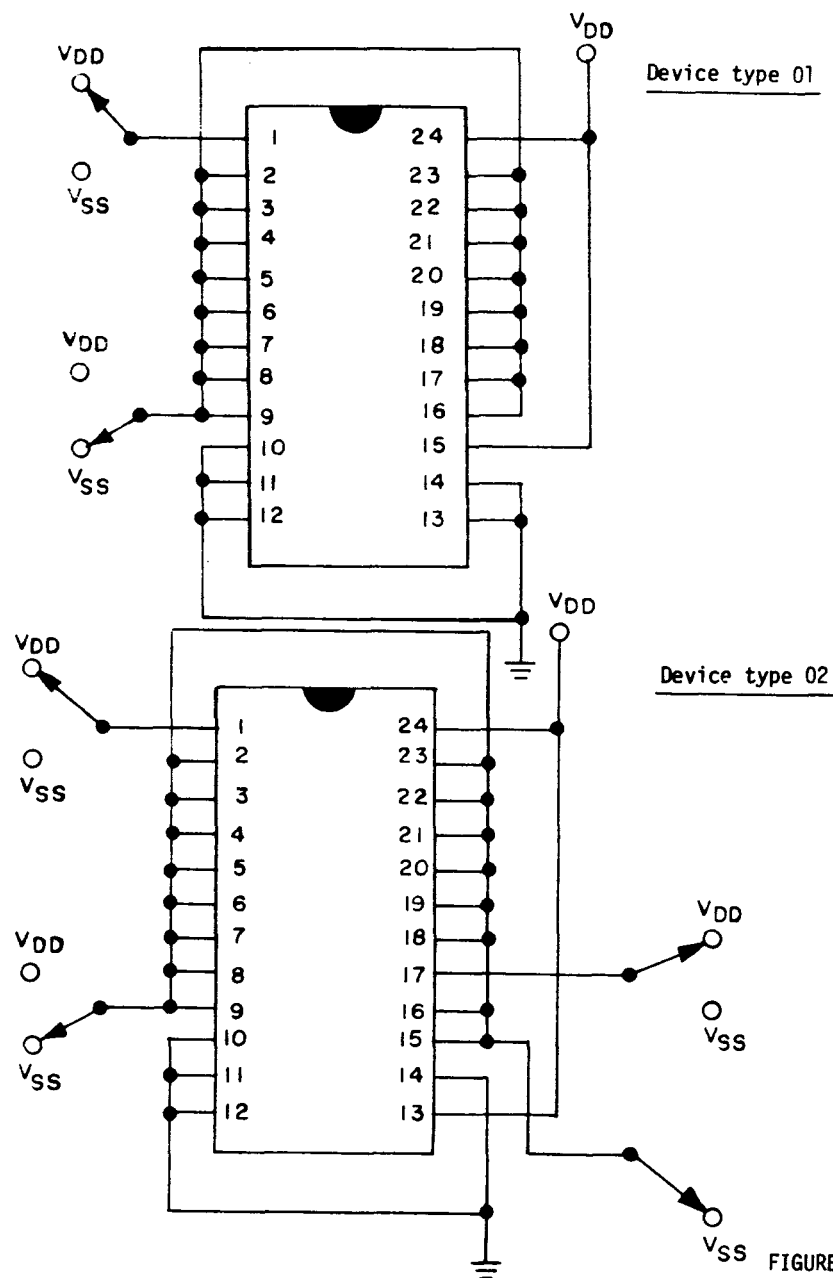
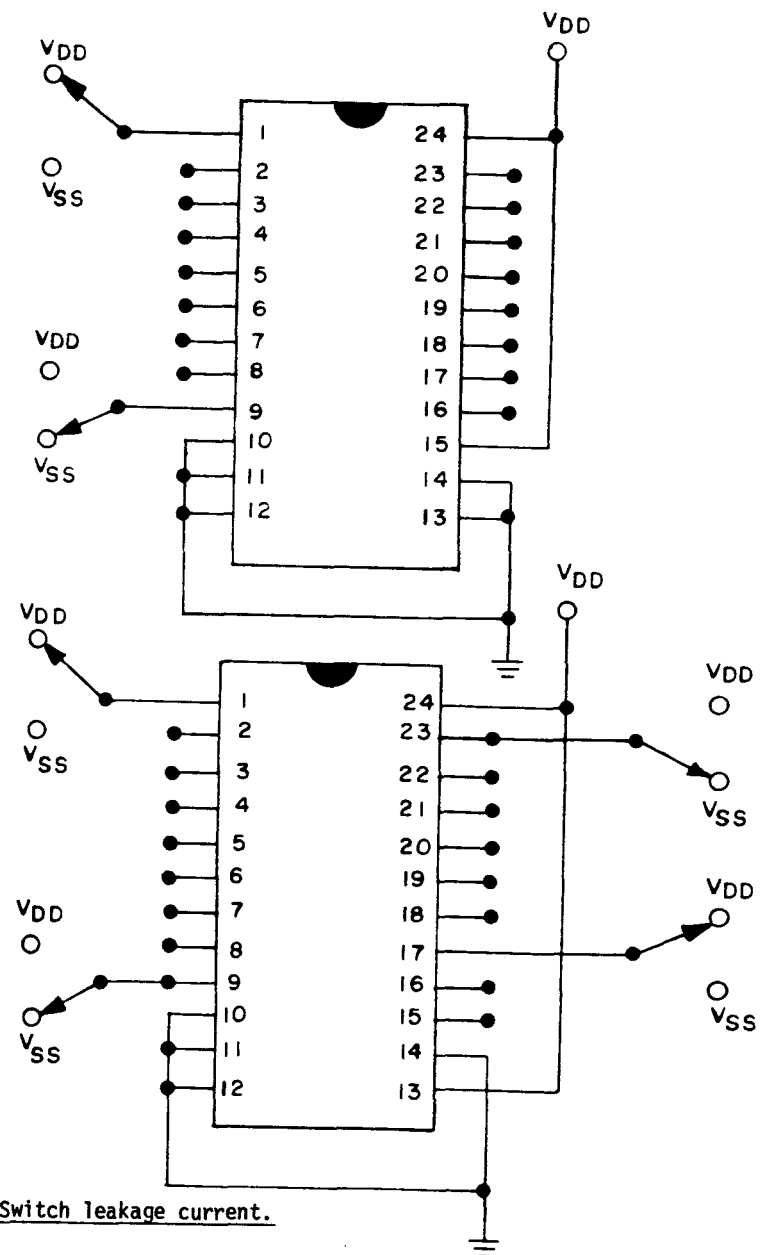
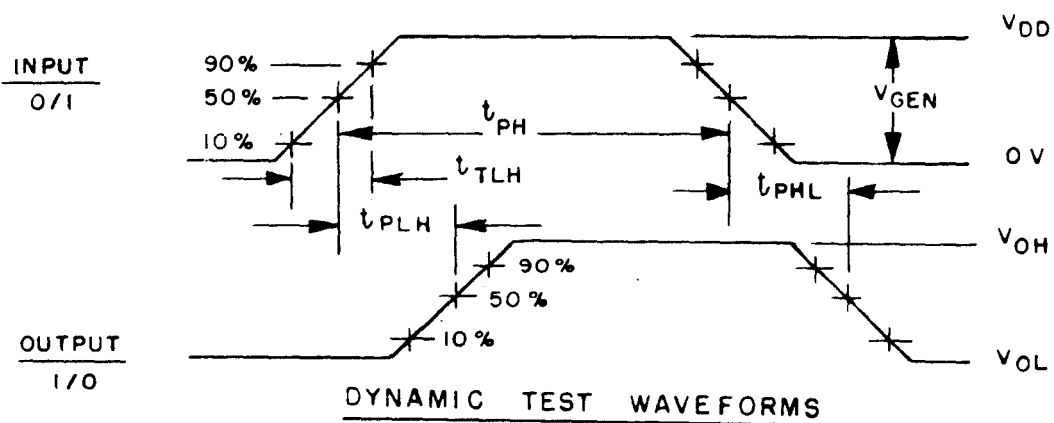
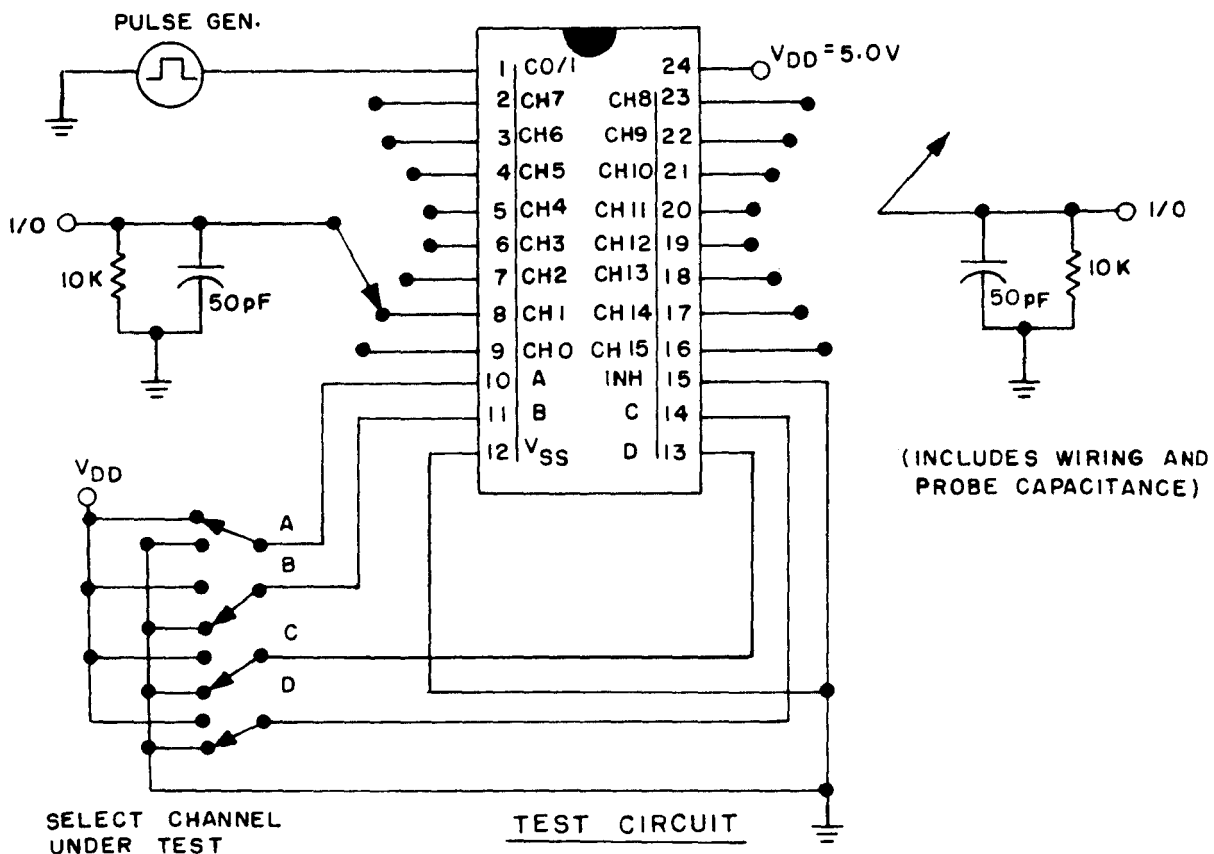


FIGURE 9. Switch leakage current.

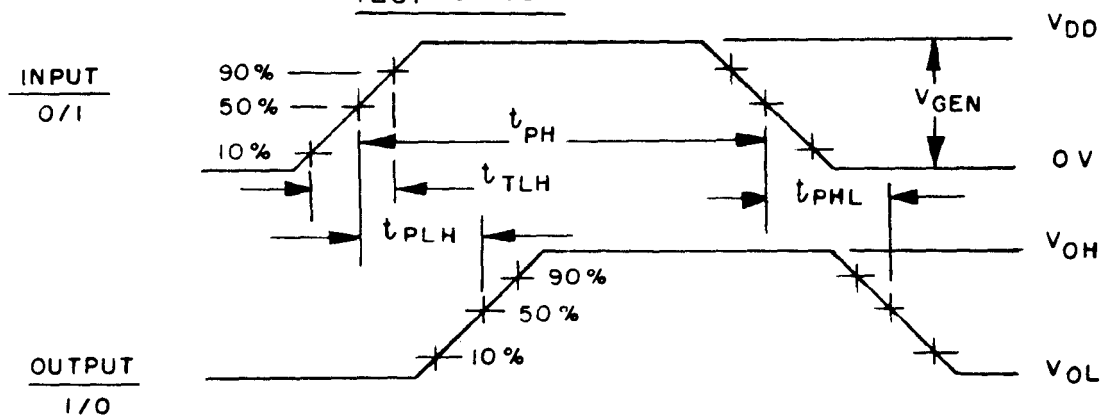
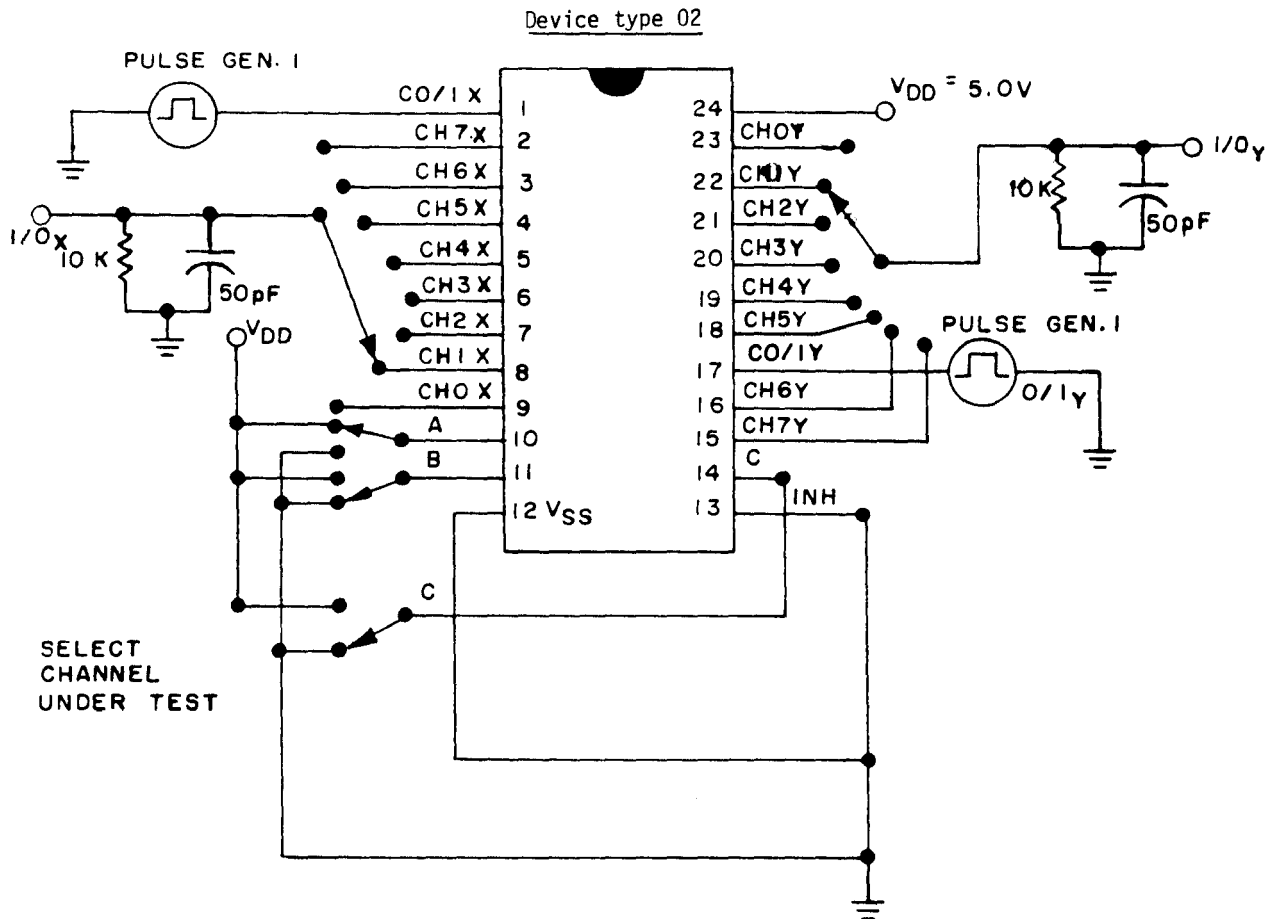


Device type 01



Input pulse
 $V_{GEN} = V_{DD} \pm 1.0\%$
 $t_{PH} = 1.0 \pm 0.1 \mu s$
 $t_{THL1} = t_{TLH1} = 20 \pm 2 ns$
 $PRR = 200 KHz$

FIGURE 10. Switching times test circuit and waveforms.
 (O/I to I/O)



Input pulse

$$V_{GEN} = V_{DD} \pm 1.0\%$$

$$t_{PH} = 1.0 \pm 0.1 \mu s$$

$$t_{THL1} = t_{TLH1} = 20 \pm 2 \text{ ns}$$

$$PRR = 200 \text{ KHz}$$

FIGURE 11. Switching times test circuit and waveforms.

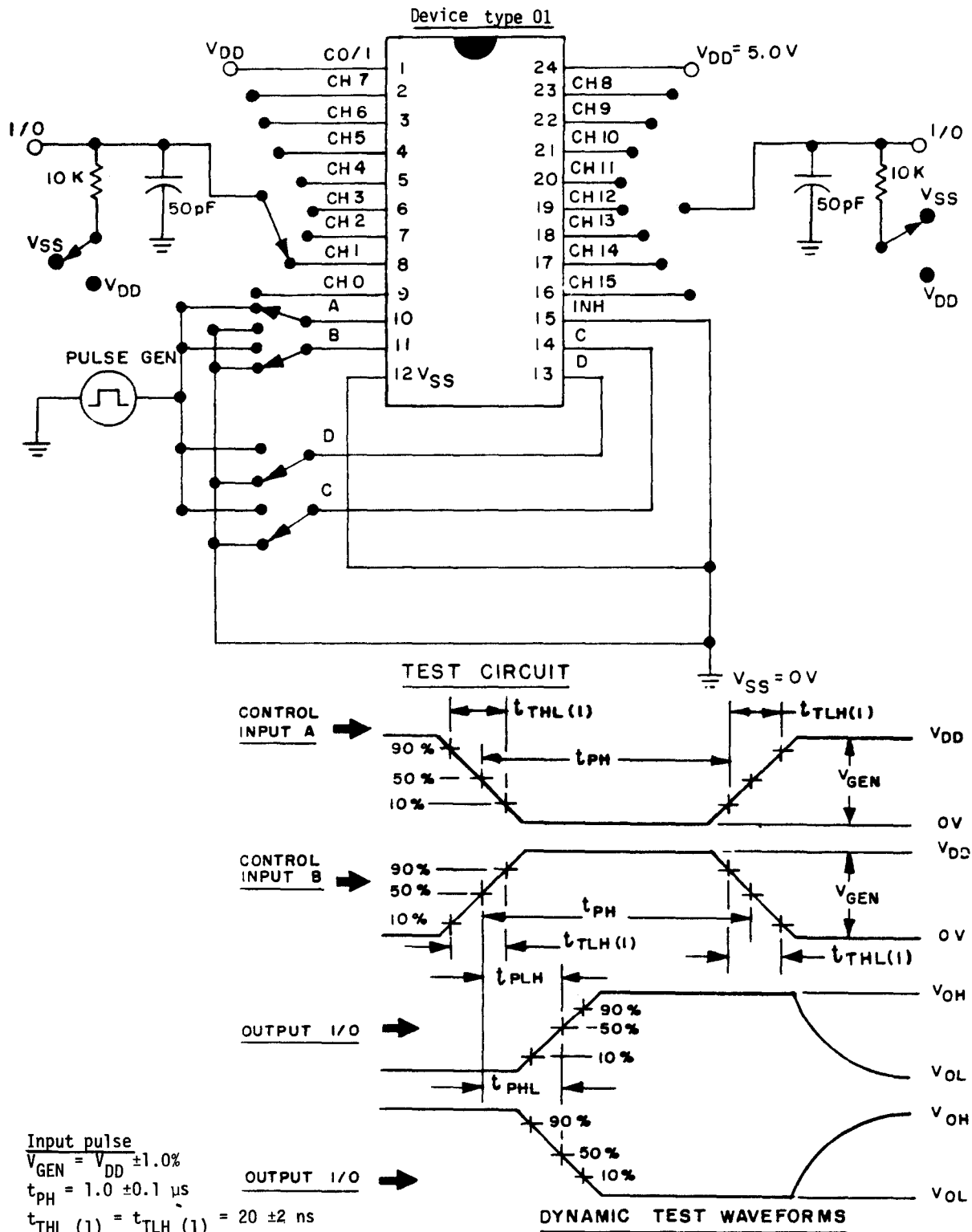
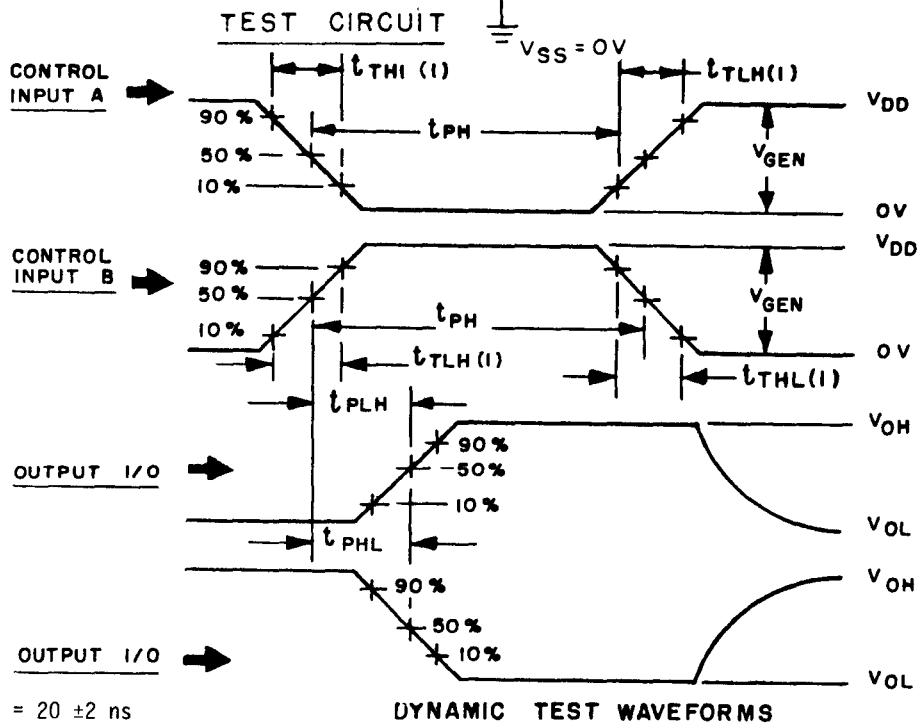
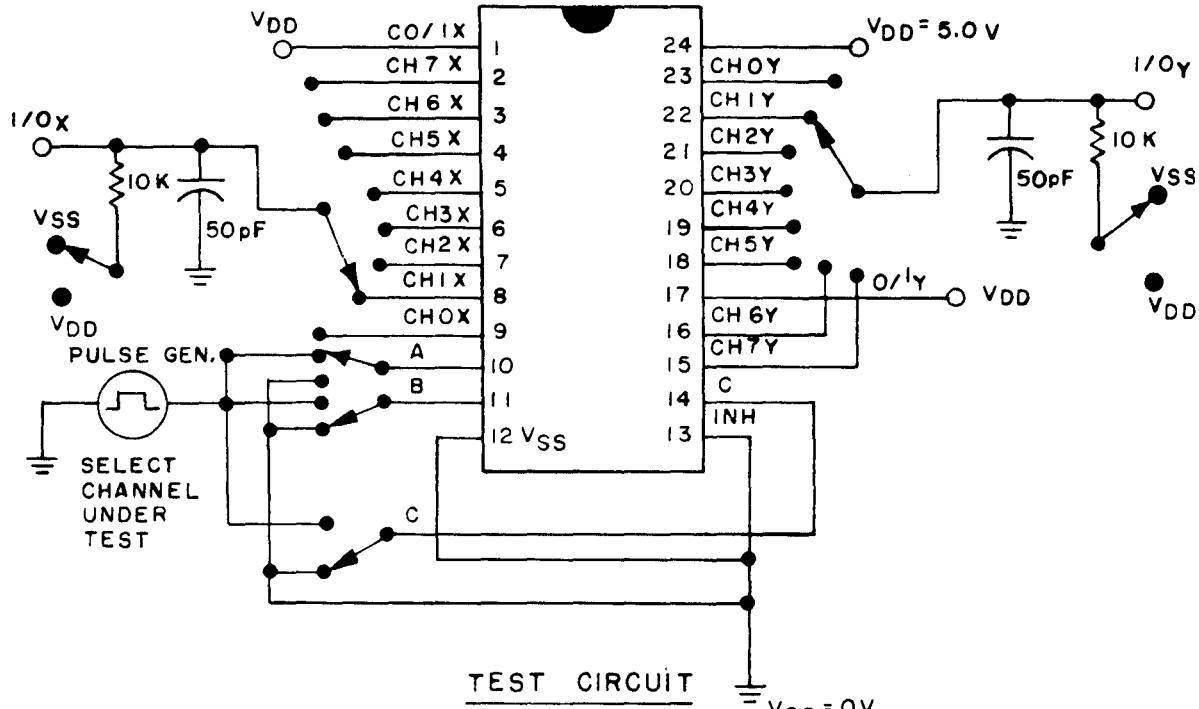


FIGURE 12. Switching times test circuit and waveforms.
 (Control inputs to I/O)



Input pulse
 $V_{GEN} = V_{DD} \pm 1.0\%$
 $t_{PH} = 1.0 \pm 0.1 \mu s$

$$t_{\text{THL1}}(1) = t_{\text{TLH}}(1) = 20 \pm 2 \text{ ns}$$

PRR = 200 KHz

Input A used for t_{PIH} test of CH0 and for t_{PHI} test of CH1 through CH7

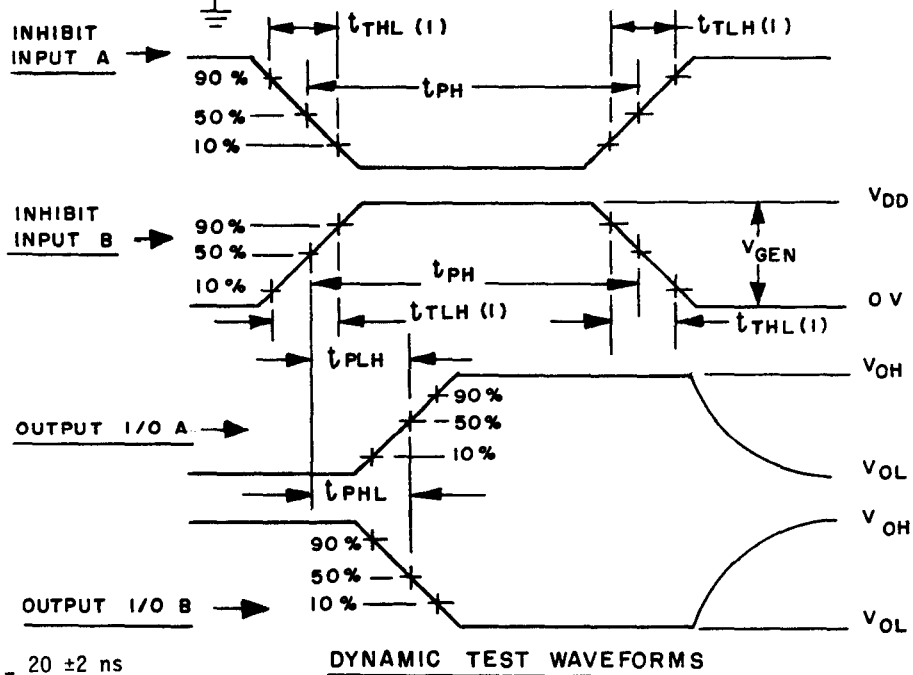
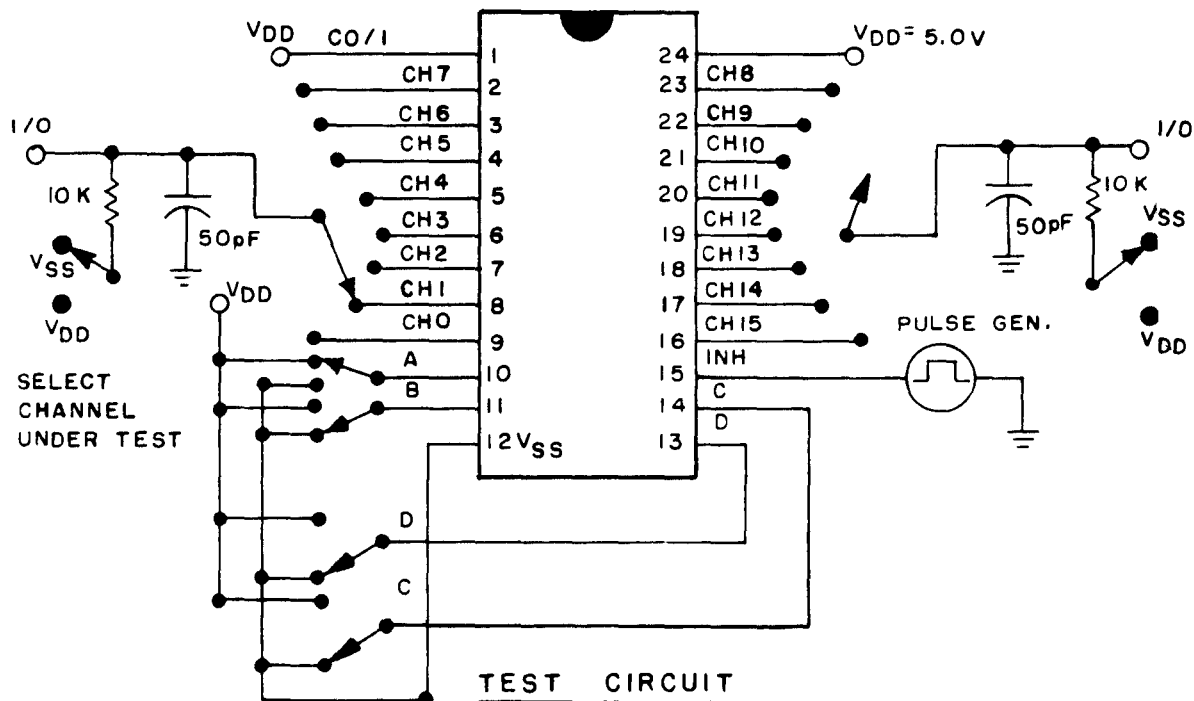
Input B used for t_{PHL} test of CH0 and for t_{PLH} test of CH1 through CH7

NOTE $R_L = 10\text{ k}\Omega$ to V_{SS} for t_{PLH}

$$R_L = 10 \text{ k}\Omega \text{ to } V_{DD} \text{ for } t_{PHL}$$

FIGURE 13. Switching times test circuit and waveforms.
(Control inputs to I/O)

Device type 01



Input pulse

$$V_{GEN} = V_{DD} \pm 1.0\%$$

$$t_{PH} = 1.0 \pm 0.1 \mu s$$

$$t_{THL(1)} = t_{TLH(1)} = 20 \pm 2 ns$$

PRR = 200 KHz

Input A used for t_{PLH} tests. Input B used
for t_{PHL} tests

NOTE: $R_L = 10K$ to V_{SS} for t_{PLH}
 $R_L = 10K$ to V_{DD} for t_{PHL}

FIGURE 14. Switching times test circuit and waveforms.
(Inhibit to I/O)

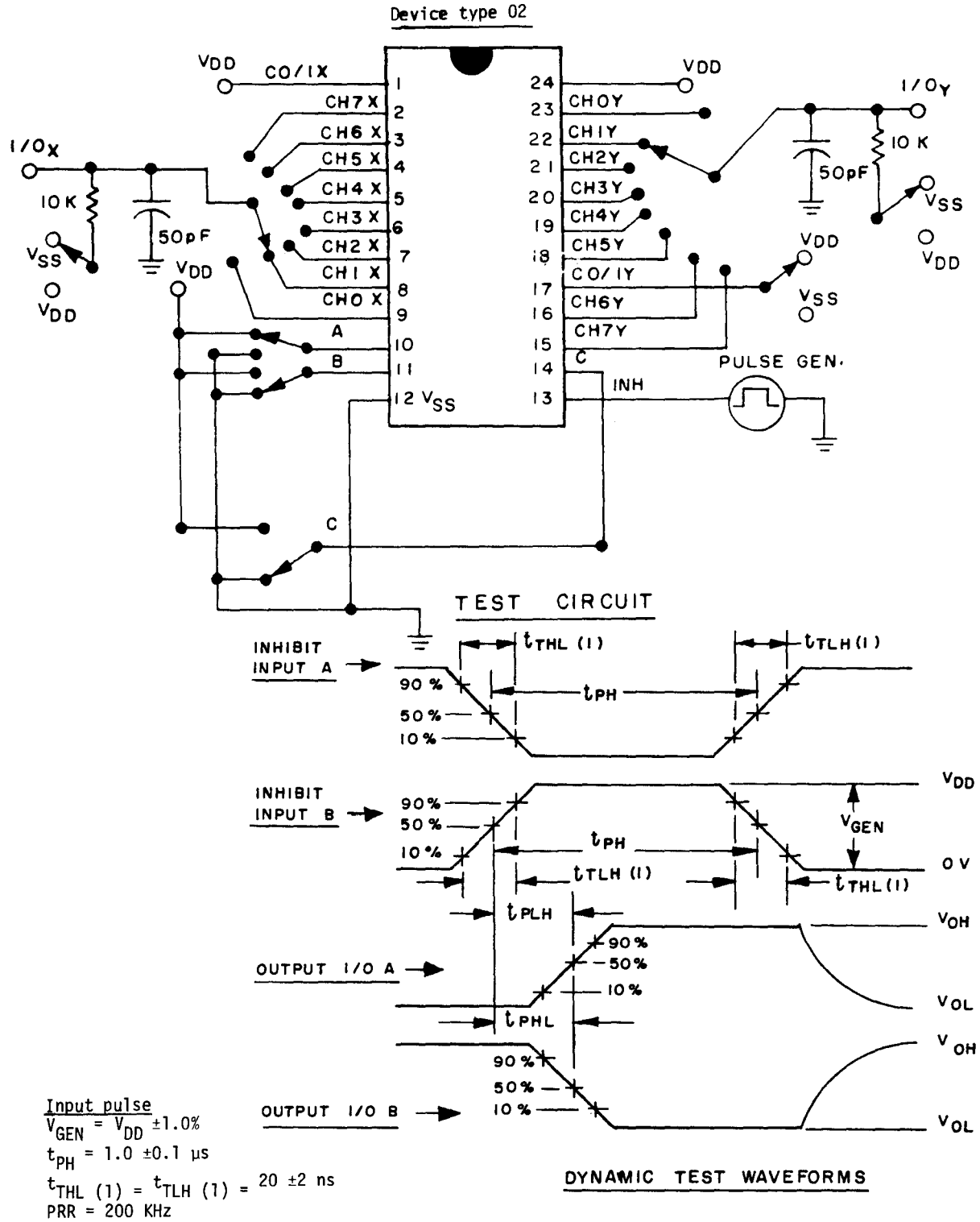
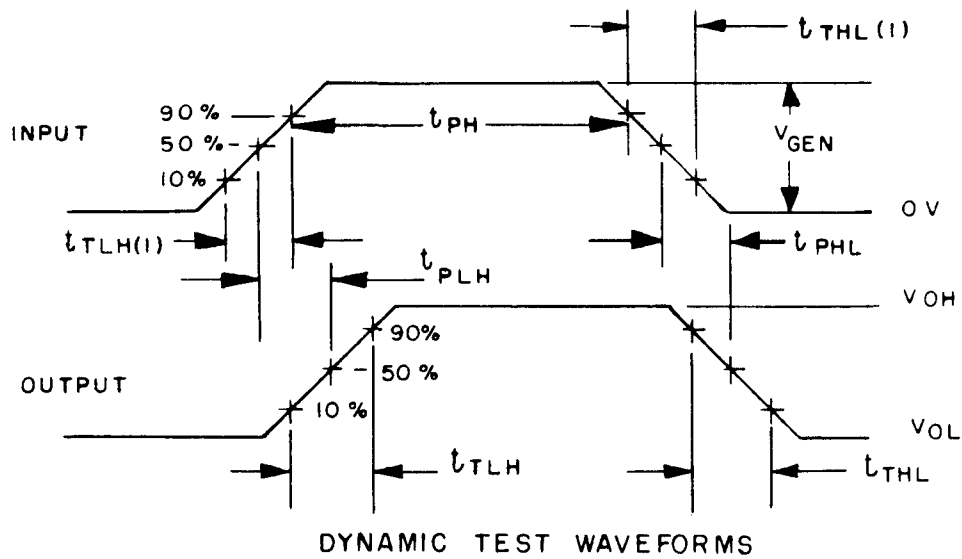
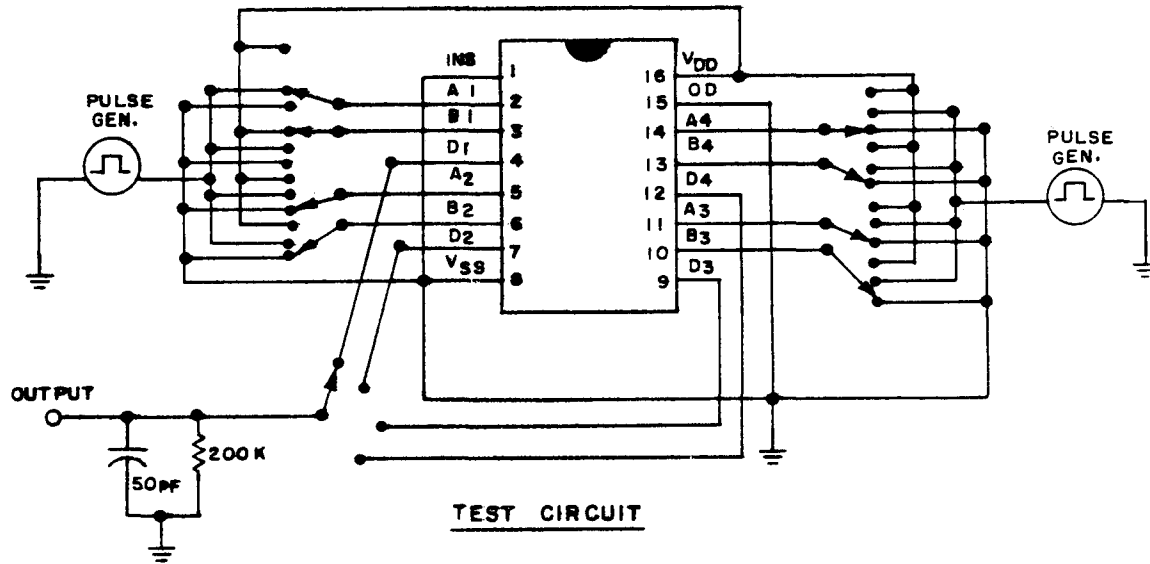


FIGURE 15. Switching times test circuit and waveforms.

Device type 03



Input pulse

$$V_{GEN} = V_{DD} \pm 1.0\%$$

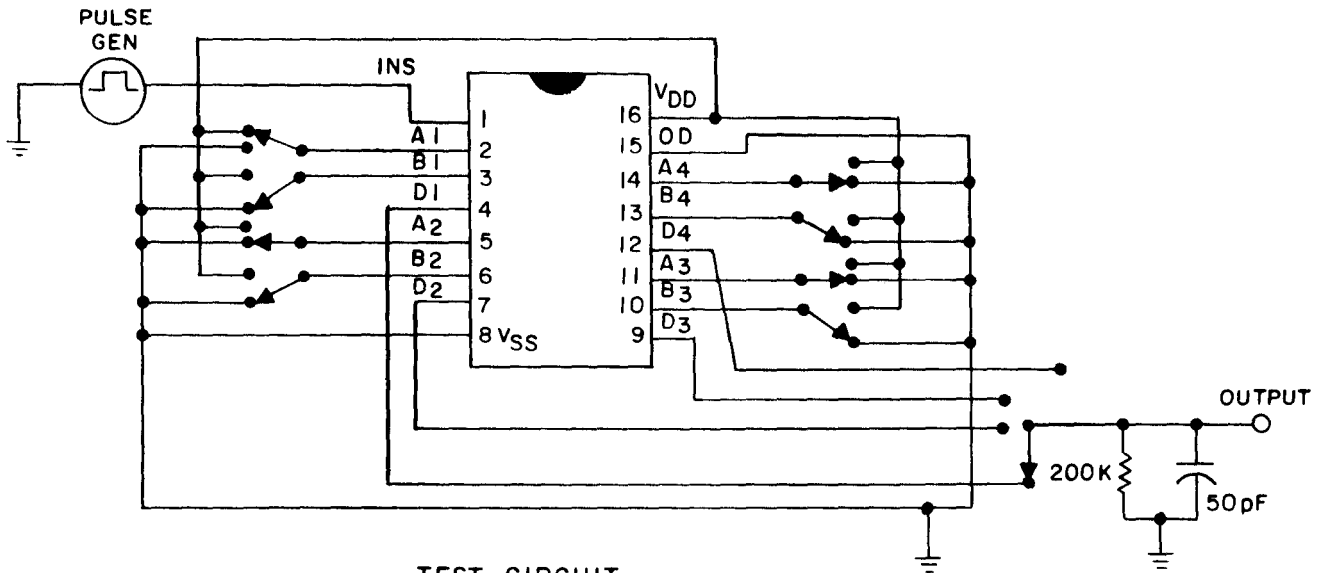
$$t_{PH} = 1.0 \pm 0.1 \mu s$$

$$t_{THL(1)} = t_{TLH(1)} = 20 \pm 2 \text{ ns}$$

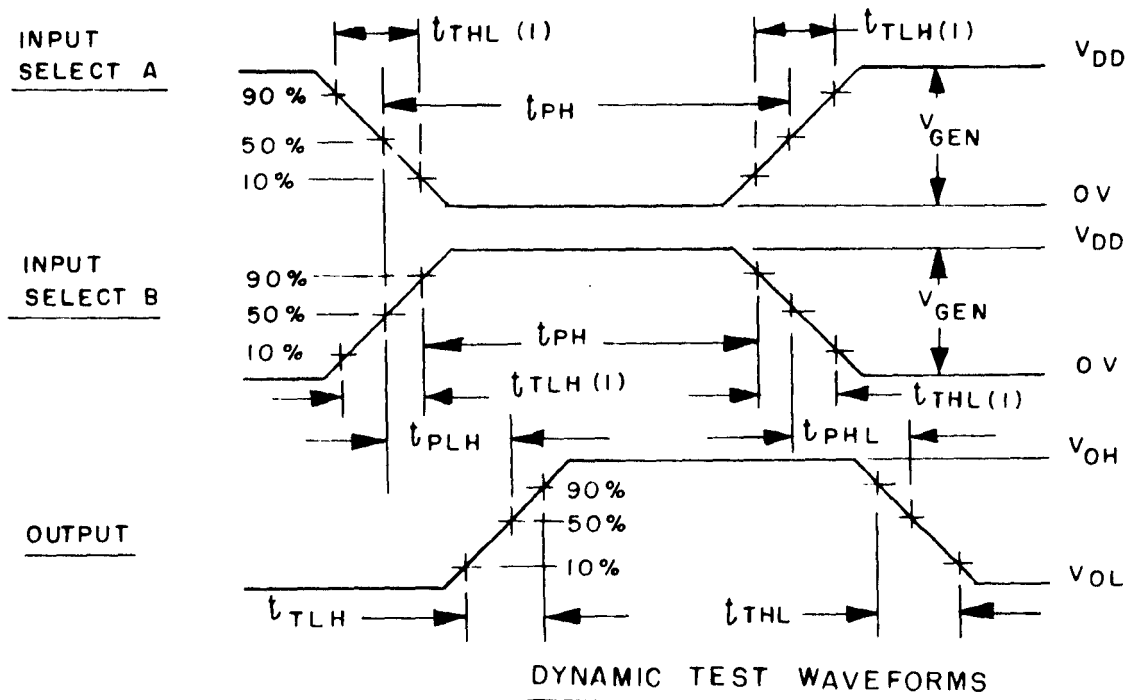
$$PRR = 200 \text{ KHz}$$

FIGURE 16. Switching times test circuit and waveforms.
(Data input to output)

Device type 03



TEST CIRCUIT



DYNAMIC TEST WAVEFORMS

Input pulse

$$V_{GEN} = V_{DD} \pm 1.0\%$$

$$t_{PH} = 1.0 \pm 0.1 \mu s$$

$$t_{THL}(1) = t_{TLH}(1) = 20 \pm 2 \text{ ns}$$

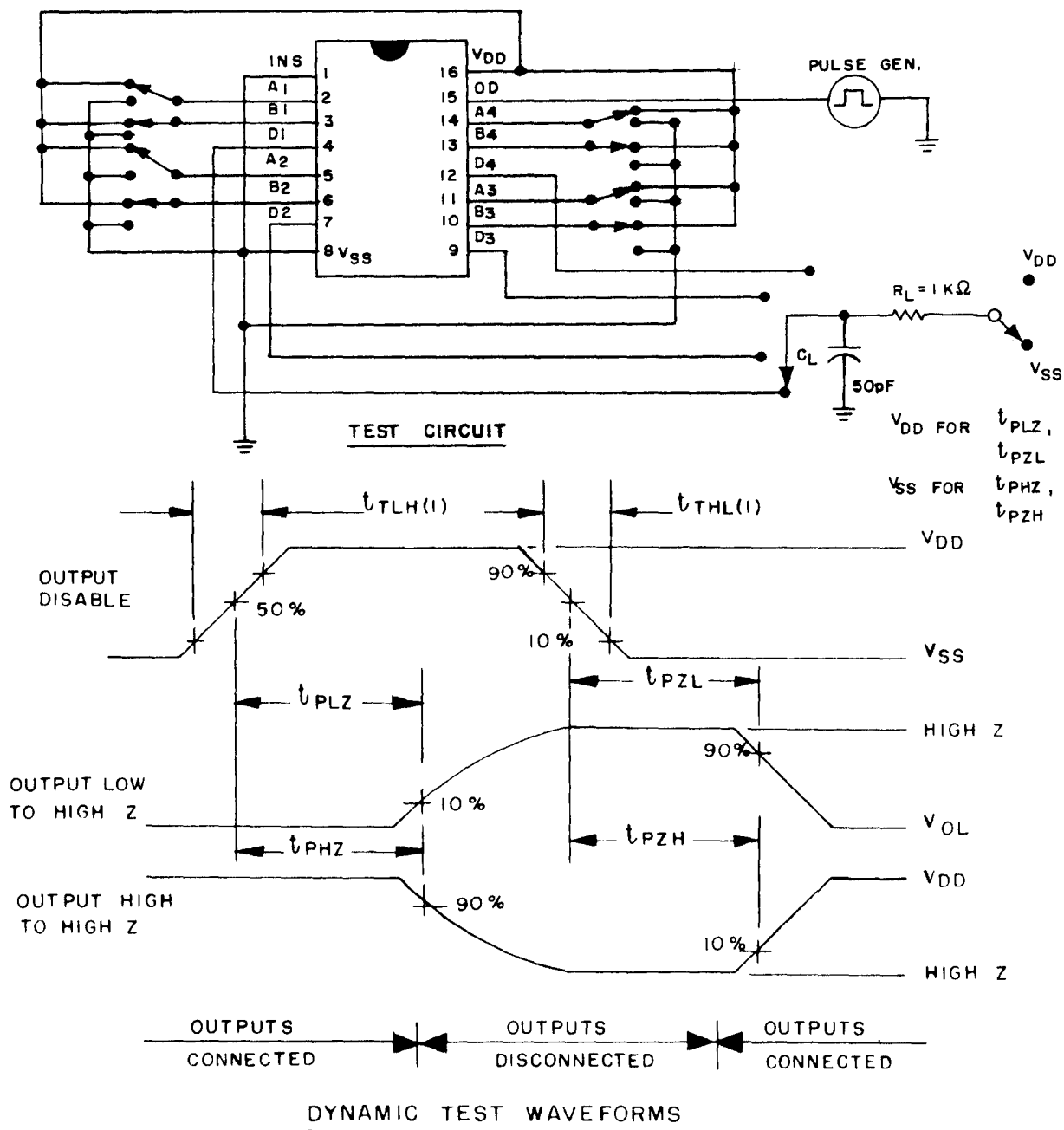
$$PRR = 200 \text{ KHz}$$

Input A used for tests 171, 173, 175, 177 where A = H, B = L

Input B used for tests 172, 174, 176, 178 where A = L, B = H

FIGURE 17. Switching times test circuit and waveforms.
(Input select to output)

Device type 03

Input pulse

$$V_{\text{GEN}} = V_{\text{DD}} \pm 1.0\%$$

$$t_{\text{PH}} = 1.0 \pm 0.1 \mu\text{s}$$

$$t_{\text{THL}}(1) = t_{\text{TLH}}(1) = 20 \pm 2 \text{ ns}$$

$$\text{PRR} = 200 \text{ KHz}$$

FIGURE 18. Switching times test circuit and waveforms.
(Output disable to output)

TABLE III. Group A Inspection for device type 01.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions J/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	CO ₁	CH ₇	CH ₆	CH ₅	CH ₄	CH ₃	CH ₂	CH ₁	CH ₀	A	B	V _{SS}	D	C	INH	CH ₁₅	CH ₁₄	CH ₁₃	CH ₁₂	CH ₁₁	CH ₁₀	CH ₉	CH ₈		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
V _{IC} (pos) ↓		1		1 mA																							GND	CH ₇		1.5				V _{dc}	
	2			1 mA																							CH ₆								
	3				1 mA																						CH ₅								
	4					1 mA																					CH ₄								
	5						1 mA																				CH ₃								
	6							1 mA																			CH ₂								
	7								1 mA																		CH ₁								
	8									1 mA																	CH ₀								
	9										1 mA																A								
	10											1 mA															B								
	11												1 mA														D								
	12													1 mA													C								
	13														1 mA												INH								
	14															1 mA											CH ₁₅								
	15																1 mA										CH ₁₄								
	16																	1 mA									CH ₁₃								
	17																		1 mA								CH ₁₂								
	18																			1 mA							CH ₁₁								
	19																				1 mA						CH ₁₀								
	20																					1 mA					CH ₉								
	21																						1 mA				CH ₈								
	22		1 mA																						1 mA			CO ₁							
V _{IC} (neg) ↓		23		-1 mA										GND													CH ₇		-6.0						
	24				-1 mA																						CH ₆								
	25					-1 mA																					CH ₅								
	26						-1 mA																				CH ₄								
	27							-1 mA																			CH ₃								

See footnotes at end of table.

TABLE III. Group A inspection for device type D1 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
			Symbol	CO/I	CH ₇	CH ₆	CH ₅	CH ₄	CH ₃	CH ₂	CH ₁	CH ₀	A	B	V _{SS}	D	C	INH	CH ₁₅	CH ₁₄	CH ₁₃	CH ₁₂	CH ₁₁	CH ₁₀	CH ₉	CH ₈		V _{DD}	Min	Max	Min	Max	Min		Max																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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V _{IC(neg)}			28																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			

See footnotes at end of table.

TABLE III. Group A inspection for device type 01 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C				
			Symbol	CO/I	CH ₇	CH ₆	CH ₅	CH ₄	CH ₃	CH ₂	CH ₁	CH ₀	A	B	V _{SS}	D	C	INH	CH ₁₅	CH ₁₄	CH ₁₃	CH ₁₂	CH ₁₁	CH ₁₀	CH ₉	CH ₈		V _{DD}	Min		Max		Min		Max	
			Test No.																																	
V _{OH1}	3006	54									15.0 V	15.0 V	GND	15.0 V	15.0 V	GND	15.0 V									15.0 V	CO/I	14.95		14.95		14.95		V _{dc}		
		55	15.0 V									GND	GND		GND	GND											CH ₀									
		56										15.0 V	GND														CH ₁									
		57										GND	15.0 V														CH ₂									
		58										15.0 V	15.0 V														CH ₃									
		59										GND	GND			15.0 V											CH ₄									
		60										15.0 V	GND														CH ₅									
		61										GND	15.0 V														CH ₆									
		62										15.0 V	15.0 V														CH ₇									
		63										GND	GND		15.0 V	GND											CH ₈									
		64										15.0 V	GND														CH ₉									
		65										GND	15.0 V														CH ₁₀									
		66										15.0 V	15.0 V														CH ₁₁									
		67										GND	GND			15.0 V											CH ₁₂									
		68										15.0 V	GND														CH ₁₃									
		69										GND	15.0 V														CH ₁₄									
		70										15.0 V	15.0 V														CH ₁₅									
V _{OL1}	3007	71								GND	GND	GND		GND	GND	GND											CO/I		0.05		0.05		0.05			
		72	GND									GND	GND														CH ₀									
		73										15.0 V	GND														CH ₁									
		74										GND	15.0 V														CH ₂									
		75										15.0 V	15.0 V														CH ₃									
		76										GND	GND			15.0 V											CH ₄									
		77										15.0 V	GND														CH ₅									
		78										GND	15.0 V														CH ₆									
		79										15.0 V	15.0 V														CH ₇									
		80										GND	GND		15.0 V	GND											CH ₈									

See footnotes at end of table.

TABLE III. Group A inspection for device type 01 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, L, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	CO/I	CH ₇	CH ₆	CH ₅	CH ₄	CH ₃	CH ₂	CH ₁	CH ₀	A	B	V _{SS}	D	C	INH	CH ₁₅	CH ₁₄	CH ₁₃	CH ₁₂	CH ₁₁	CH ₁₀	CH ₉	CH ₈		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
V _{OL1}	3007	81	GND								15.0 V	GND	GND	15.0 V	GND	GND										15.0 V	CH ₉		0.05		0.05		0.05	Vdc	
		82									GND	15.0 V														CH ₁₀									
		83									15.0 V	15.0 V														CH ₁₁									
		84									GND	GND			15.0 V											CH ₁₂									
		85									15.0 V	GND														CH ₁₃									
		86									GND	15.0 V														CH ₁₄									
		87									15.0 V	15.0 V														CH ₁₅									
I _{IH1} 3/	3010	88		18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V		18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	A11 inputs		21					nA			
I _{IH2} 3/		89	18.0 V								GND	GND		GND	GND	GND										CO/I		1.0		45					
		90		GND	GND	GND	GND	GND	GND	GND	GND	18.0 V	GND			GND	GND									A									
		91										GND	18.0 V			GND										B									
		92											GND			18.0 V										C									
		93													18.0 V	GND										D									
		94															18.0 V									INH									
		95																								CH ₀									
		96																								CH ₁									
		97																								CH ₂									
		98																								CH ₃									
		99																								CH ₄									
		100																								CH ₅									
		101																								CH ₆									
		102		18.0 V	GND																					CH ₇									
		103		GND																						CH ₈									
		104																								CH ₉									
		105																								CH ₁₀									
		106																								CH ₁₁									
		107																								CH ₁₂									

See footnotes at end of table.

TABLE III. Group A inspection for device type 01 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	CO/I	CH ₇	CH ₆	CH ₅	CH ₄	CH ₃	CH ₂	CH ₁	CH ₀	A	B	V _{SS}	D	C	INH	CH ₁₅	CH ₁₄	CH ₁₃	CH ₁₂	CH ₁₁	CH ₁₀	CH ₉	CH ₈		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
I _{IH2} 3/	3010	108		GND	GND	GND	GND	GND	GND	GND	18.0 V	GND	GND	18.0 V	18.0 V	GND	GND	GND	18.0 V	GND	GND	GND	GND	GND	GND	GND	18.0 V	CH ₁₃		1.0		45			nA
I _{IH2} 3/	3010	109									GND	18.0 V		18.0 V	18.0 V		GND	18.0 V	GND	GND	GND	GND	GND	GND	GND		CH ₁₄		1.0		45				
I _{IH2} 3/	3010	110									18.0 V	18.0 V		18.0 V	18.0 V		18.0 V	GND	GND	GND	GND	GND	GND	GND	GND		CH ₁₅		1.0		45				
I _{IL1}	3009	111									GND	GND		GND	GND		GND	GND	GND	GND	GND	GND	GND	GND	GND		All Inputs		-21						
I _{IL2} 3/		112	GND								18.0 V	18.0 V		18.0 V	18.0 V											CO/I		-1.0		-45					
		113		18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	GND	18.0 V			18.0 V		18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V		A								
		114									18.0 V	GND			18.0 V												B								
		115										18.0 V			GND												C								
		116										18.0 V		GND	18.0 V												D								
		117										18.0 V		18.0 V	18.0 V												INH								
		118												GND	GND												CH ₀								
		119												GND	18.0 V		18.0 V	GND									CH ₁								
		120												GND	18.0 V												CH ₂								
		121												18.0 V	18.0 V												CH ₃								
		122													GND	GND											CH ₄								
		123													18.0 V												CH ₅								
		124														GND	18.0 V										CH ₆								
		125														18.0 V	18.0 V										CH ₇								
		126														GND	GND										CH ₈								
		127														18.0 V	GND										CH ₉								
		128															18.0 V										CH ₁₀								
		129															18.0 V	18.0 V									CH ₁₁								
		130															GND	GND									CH ₁₂								
		131															18.0 V	GND									CH ₁₃								
		132																18.0 V	18.0 V								CH ₁₄								
		133																GND	18.0 V	18.0 V	18.0 V						CH ₁₅								

See footnotes at end of table.

TABLE III. Group A inspection for device type 01 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U Symbol	Terminal conditions 1/																								Measured terminal	Test limits						Units
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C		
			CO/I	CH ₇	CH ₆	CH ₅	CH ₄	CH ₃	CH ₂	CH ₁	CH ₀	A	B	V _{SS}	D	C	INH	CH ₁₅	CH ₁₄	CH ₁₃	CH ₁₂	CH ₁₁	CH ₁₀	CH ₉	CH ₈	V _{DD}		Min	Max	Min	Max	Min	Max	
Test No.																																		
RON11	Fig. 6	134	V _{IS} = -2.0 V								V _{OS}	-2.5 V	-2.5 V	-2.5 V	-2.5 V	-2.5 V	-2.5 V									2.5 V	CH ₀		500		700		350	Ω
		135										2.5 V	-2.5 V														CH ₁							
		136										-2.5 V	2.5 V														CH ₂							
		137										2.5 V	2.5 V														CH ₃							
		138					V _{OS}					-2.5 V	-2.5 V			2.5 V											CH ₄							
		139				V _{OS}						2.5 V	-2.5 V														CH ₅							
		140			V _{OS}							-2.5 V	2.5 V														CH ₆							
		141		V _{OS}								2.5 V	2.5 V														CH ₇							
		142										-2.5 V	-2.5 V		2.5 V	-2.5 V									V _{OS}	CH ₈								
		143										2.5 V	-2.5 V														CH ₉							
		144										-2.5 V	2.5 V											V _{OS}			CH ₁₀							
		145										2.5 V	2.5 V														CH ₁₁							
		146										-2.5 V	-2.5 V			2.5 V											CH ₁₂							
		147										2.5 V	-2.5 V														CH ₁₃							
		148										-2.5 V	2.5 V														CH ₁₄							
		149										2.5 V	2.5 V					V _{OS}									CH ₁₅							
RON12		150-165	Same tests and terminal conditions as for tests 134-149, except V _{IS} = -0.9 V and limits are as shown.																									700		900		900		
RON13		166-181	Same tests and terminal conditions as for tests 134-149, except V _{IS} = 1.0 V and limits are as shown.																									600		800		400		
RON14		182-197	Same tests and terminal conditions as for tests 134-149, except V _{IS} = 2.0 V and limits are as shown.																									500		700		300		
RON11		198	V _{OS}								V _{IS} = -2.0 V	-2.5 V	-2.5 V	-2.5 V	-2.5 V	-2.5 V	-2.5 V								2.5 V	CO/I						350		
RON11		199	V _{OS}								V _{IS} = -2.0 V	2.5 V	-2.5 V	-2.5 V	-2.5 V	-2.5 V	-2.5 V								2.5 V	CO/I						350		
RON11		200	V _{OS}								V _{IS} = -2.0 V	-2.5 V	2.5 V	-2.5 V	-2.5 V	-2.5 V	-2.5 V								2.5 V	CO/I						350		

See footnotes at end of table.

TABLE III. Group A inspection for device type 01 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z	Terminal conditions 1/																								Measured terminal	Test limits						Units		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C				
			Symbol	CO/I	CH ₇	CH ₆	CH ₅	CH ₄	CH ₃	CH ₂	CH ₁	CH ₀	A	B	V _{SS}	D	C	INH	CH ₁₅	CH ₁₄	CH ₁₃	CH ₁₂	CH ₁₁	CH ₁₀	CH ₉	CH ₈		V _{DD}	Min	Max	Min	Max	Min		Max	
Test No.																																				
R _{ON11}	Fig. 6	201	V _{OS}											2.5 V	2.5 V	-2.5 V	-2.5 V	-2.5 V	-2.5 V									2.5 V	CO/I		500		700		350	Ω
		202												-2.5 V	-2.5 V			2.5 V																		
		203												2.5 V	-2.5 V																					
		204												-2.5 V	2.5 V																					
		205												2.5 V	2.5 V																					
		206												-2.5 V	-2.5 V		2.5 V	-2.5 V																		
		207												2.5 V	-2.5 V																					
		208												-2.5 V	2.5 V																					
		209												2.5 V	2.5 V																					
		210												-2.5 V	-2.5 V			2.5 V																		
		211												2.5 V	-2.5 V																					
		212												-2.5 V	2.5 V																					
213												2.5 V	2.5 V																							
R _{ON12}		214-229	Same tests and terminal conditions as for tests 198-213, except V _{IS} = -0.9 V and limits are as shown.																									700		900		500				
R _{ON13}		230-245	Same tests and terminal conditions as for tests 198-213, except V _{IS} = 1.0 V and limits are as shown.																									600		800		400				
R _{ON14}		246-261	Same tests and terminal conditions as for tests 198-213, except V _{IS} = 2.0 V and limits are as shown.																									500		700		300				
R _{ON21}	Fig. 7	262	V _{IS} = -5.0 V									V _{OS}	-5.0 V	-5.0 V	-5.0 V	-5.0 V	-5.0 V	-5.0 V									5.0 V	CH ₀		200		260		140	↓	

See footnotes at end of table.

TABLE III. Group A inspection for device type 01 - Continued.

TABLE III. Group A Inspection for device type 01 - Continued.																																				
Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 2 T _A = -55°C				
			Symbol	CO/1	CH ₇	CH ₆	CH ₅	CH ₄	CH ₃	CH ₂	CH ₁	CH ₀	A	B	V _{SS}	D	C	INH	CH ₁₅	CH ₁₄	CH ₁₃	CH ₁₂	CH ₁₁	CH ₁₀	CH ₉	CH ₈		V _{DD}	Min	Max	Min	Max	Min		Max	
			Test No.																																	
R _{ON21}	Fig. 7	263	V _{IS} = -5.0 V									V _{OS}			5.0 V	-5.0 V	-5.0 V	-5.0 V	-5.0 V	-5.0 V								5.0 V	CH ₁		200		260		140	Ω
		264										V _{OS}			-5.0 V	5.0 V			-5.0 V										CH ₂							
		265										V _{OS}			5.0 V	5.0 V			-5.0 V										CH ₃							
		266										V _{OS}			-5.0 V	-5.0 V			5.0 V										CH ₄							
		267										V _{OS}			5.0 V	-5.0 V													CH ₅							
		268										V _{OS}			-5.0 V	5.0 V													CH ₆							
		269										V _{OS}			5.0 V	5.0 V													CH ₇							
		270										V _{OS}			-5.0 V	-5.0 V			5.0 V			-5.0 V							CH ₈							
		271										V _{OS}			5.0 V	-5.0 V													CH ₉							
		272										V _{OS}			-5.0 V	5.0 V													CH ₁₀							
		273										V _{OS}			5.0 V	5.0 V													CH ₁₁							
		274										V _{OS}			-5.0 V	-5.0 V			5.0 V										CH ₁₂							
		275										V _{OS}			5.0 V	-5.0 V													CH ₁₃							
		276										V _{OS}			-5.0 V	5.0 V													CH ₁₄							
		277										V _{OS}			5.0 V	5.0 V													CH ₁₅							
R _{ON22}		278-293	Same tests and terminal conditions as for tests 262-277, except V _{IS} = -3.0 V and limits are as shown.																										250		325		175			
R _{ON23}		294-309	Same tests and terminal conditions as for tests 262-277, except V _{IS} = 3.5 V and limits are as shown.																										250		325		175			
R _{ON24}		310-325	Same tests and terminal conditions as for tests 262-277, except V _{IS} = 5.0 V and limits are as shown.																										200		260		140			

See footnotes at end of table.

TABLE III. Group A inspection for device type 01 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	CO ₁	CH ₇	CH ₆	CH ₅	CH ₄	CH ₃	CH ₂	CH ₁	CH ₀	A	B	V _{SS}	D	C	INH	CH ₁₅	CH ₁₄	CH ₁₃	CH ₁₂	CH ₁₁	CH ₁₀	CH ₉	CH ₈		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
R _{ON21}	Fig. 7	326	V _{OS}										V _{IS} = -5.0 V	-5.0 V	-5.0 V	-5.0 V	-5.0 V	-5.0 V									5.0 V	CO ₁	200		260		140	Ω	
		327											V _{IS} = -5.0 V	5.0 V	-5.0 V																				
		328											V _{IS} = -5.0 V	-5.0 V	5.0 V																				
		329											V _{IS} = -5.0 V	5.0 V	5.0 V																				
		330											V _{IS} = -5.0 V	-5.0 V	-5.0 V			5.0 V																	
		331											V _{IS} = -5.0 V	5.0 V	-5.0 V																				
		332											V _{IS} = -5.0 V	-5.0 V	5.0 V																				
		333											V _{IS} = -5.0 V	5.0 V	5.0 V																				
		334											V _{IS} = -5.0 V	-5.0 V	-5.0 V		5.0 V	-5.0 V								V _{IS} = -5.0 V									
		335												5.0 V	-5.0 V											V _{IS} = -5.0 V									
		336												-5.0 V	5.0 V										V _{IS} = -5.0 V										
		337												5.0 V	5.0 V									V _{IS} = -5.0 V											
		338												-5.0 V	-5.0 V		5.0 V								V _{IS} = -5.0 V										
		339												5.0 V	-5.0 V											V _{IS} = -5.0 V									
		340												-5.0 V	5.0 V																				
		341												5.0 V	5.0 V											V _{IS} = -5.0 V									

See footnotes at end of table.

TABLE III. Group A inspection for device type 01 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U Symbol	Terminal conditions 1/ Test No.																								Measured terminal	Test limits						Units
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C		
			CO ₁	CH ₇	CH ₆	CH ₅	CH ₄	CH ₃	CH ₂	CH ₁	CH ₀	A	B	V _{SS}	D	C	INH	CH ₁₅	CH ₁₄	CH ₁₃	CH ₁₂	CH ₁₁	CH ₁₀	CH ₉	CH ₈	V _{DD}		Min	Max	Min	Max	Min	Max	
R _{ON22}	Fig. 7	342-357	Same tests and terminal conditions as for tests 326-241, except V _{IS} = -3.0 V and limits are as shown.																										250		325		175	n
R _{ON23}	Fig. 7	358-373	Same tests and terminal conditions as for tests 326-341, except V _{IS} = 3.5 V and limits are as shown.																										250		325		175	
R _{ON24}	Fig. 7	374-389	Same tests and terminal conditions as for tests 326-341, except V _{IS} = 5.0 V and limits are as shown.																										200		260		140	
R _{ON31}	Fig. 8	390-405	V _{IS} = -7.5 V									V _{OS}	-7.5 V	-7.5 V	-7.5 V	-7.5 V	-7.5 V	-7.5 V							7.5 V	CH ₀	150		200	100				
		391										V _{OS}	7.5 V	-7.5 V													CH ₁							
		392										V _{OS}	-7.5 V	7.5 V													CH ₂							
		393										V _{OS}	7.5 V	7.5 V													CH ₃							
		394										V _{OS}	-7.5 V	-7.5 V													CH ₄							
		395										V _{OS}	7.5 V	-7.5 V													CH ₅							
		396										V _{OS}	-7.5 V	7.5 V													CH ₆							
		397										V _{OS}	7.5 V	7.5 V													CH ₇							
		398										V _{OS}	-7.5 V	-7.5 V													CH ₈							
		399										V _{OS}	7.5 V	-7.5 V													CH ₉							
		400										V _{OS}	-7.5 V	7.5 V													CH ₁₀							
		401										V _{OS}	7.5 V	7.5 V													CH ₁₁							
		402										V _{OS}	-7.5 V	-7.5 V													CH ₁₂							
		403										V _{OS}	7.5 V	-7.5 V													CH ₁₃							
		404										V _{OS}	-7.5 V	7.5 V													CH ₁₄							
		405										V _{OS}	7.5 V	7.5 V													CH ₁₅							
R _{ON32}		406-421	Same tests and terminal conditions as for tests 390-405, except V _{IS} = -5.0 V and limits are as shown.																										170		230		120	
R _{ON33}		422-437	Same tests and terminal conditions as for tests 390-405, except V _{IS} = 0 V and limits are as shown.																										170		230		120	
R _{ON34}		438-453	Same tests and terminal conditions as for tests 390-405, except V _{IS} = 6.0 V and limits are as shown.																										170		230		120	
R _{ON35}		454-469	Same tests and terminal conditions as for tests 390-405, except V _{IS} = 7.5 V and limits are as shown.																										150		200		100	

See footnotes at end of table.

TABLE III. Group A inspection for device type 01 - Continued.

TABLE III. Group A inspection for device type 01 - Continued.																																			
Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	CO ₁	CH ₇	CH ₆	CH ₅	CH ₄	CH ₃	CH ₂	CH ₁	CH ₀	A	B	V _{SS}	D	C	INH	CH ₁₅	CH ₁₄	CH ₁₃	CH ₁₂	CH ₁₁	CH ₁₀	CH ₉	CH ₈		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
RON31	Fig. 8		470	V _{OS}									V _{IS} = -7.5 V	-7.5 V	-7.5 V	-7.5 V	-7.5 V	-7.5 V									7.5 V	CO ₁		150		200		100	Ω
			471										V _{IS} = -7.5 V		7.5 V	-7.5 V																			
			472										V _{IS} = -7.5 V		-7.5 V	7.5 V																			
			473										V _{IS} = -7.5 V		7.5 V	7.5 V																			
			474										V _{IS} = -7.5 V		-7.5 V	-7.5 V																			
			475										V _{IS} = -7.5 V		7.5 V	-7.5 V																			
			476										V _{IS} = -7.5 V		-7.5 V	7.5 V																			
			477										V _{IS} = -7.5 V		7.5 V	7.5 V																			
			478												-7.5 V	-7.5 V		7.5 V	-7.5 V									V _{IS} = -7.5 V							
			479												7.5 V	-7.5 V												V _{IS} = -7.5 V							
			480												-7.5 V	7.5 V												V _{IS} = -7.5 V							
			481												7.5 V	7.5 V												V _{IS} = -7.5 V							
			482												-7.5 V	-7.5 V		7.5 V									V _{IS} = -7.5 V								
			483												7.5 V	-7.5 V												V _{IS} = -7.5 V							
			484												-7.5 V	7.5 V												V _{IS} = -7.5 V							
			485												7.5 V	7.5 V												V _{IS} = -7.5 V							

See footnotes at end of table.

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TABLE III. Group A inspection for device type 01 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C																
			Symbol	CO ₁	CH ₇	CH ₆	CH ₅	CH ₄	CH ₃	CH ₂	CH ₁	CH ₀	A	B	V _{SS}	D	C	INH	CH ₁₅	CH ₁₄	CH ₁₃	CH ₁₂	CH ₁₁	CH ₁₀	CH ₉	CH ₈		V _{DD}	Min	Max	Min	Max	Min		Max													
			Test No.																																													
R _{ON32}	Fig. 8	486-501	Same tests and terminal conditions as for tests 470-485, except V _{IS} = -5.0 V and limits are as shown.																																													
R _{ON33}		502-517	Same tests and terminal conditions as for tests 470-485, except V _{IS} = 0 V and limits are as shown.																																													
R _{ON34}		518-533	Same tests and terminal conditions as for tests 470-485, except V _{IS} = 6.0 V and limits are as shown.																																													
R _{ON35}		534-549	Same tests and terminal conditions as for tests 470-485, except V _{IS} = 7.5 V and limits are as shown.																																													
V _{IH1}	Z/	550	5.0 V									GND	GND	GND	GND	GND	GND									5.0 V	CH ₀	4.5		4.5		4.5	Vdc															
		551										3.5 V	GND														CH ₁																					
		552										GND	3.5 V														CH ₂																					
		553										3.5 V	3.5 V														CH ₃																					
		554										GND	GND														CH ₄																					
		555										3.5 V	GND														CH ₅																					
		556										GND	3.5 V														CH ₆																					
		557										3.5 V	3.5 V														CH ₇																					
		558										GND	GND														CH ₈																					
		559										3.5 V	GND														CH ₉																					
		560										GND	3.5 V														CH ₁₀																					
		561										3.5 V	3.5 V														CH ₁₁																					
		562										GND	GND														CH ₁₂																					
		563										3.5 V	GND														CH ₁₃																					
		564										GND	3.5 V														CH ₁₄																					
		565										3.5 V	3.5 V														CH ₁₅																					
V _{IH2}		566	10.0 V									GND	GND													10.0 V	CH ₀	9.0		9.0		9.0																
		567										7.0 V	GND														CH ₁																					
		568										GND	7.0 V														CH ₂																					
		569										7.0 V	7.0 V														CH ₃																					
		570										GND	GND														CH ₄																					

See footnotes at end of table.

TABLE III. Group A inspection for device type 01 - Continued.

TABLE 111. Group A inspection for device type 01 - Continued.																																			
Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	CO ₁	CH ₇	CH ₆	CH ₅	CH ₄	CH ₃	CH ₂	CH ₁	CH ₀	A	B	V _{SS}	D	C	INH	CH ₁₅	CH ₁₄	CH ₁₃	CH ₁₂	CH ₁₁	CH ₁₀	CH ₉	CH ₈		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
V _{IH2}	2/	571	10.0 V										7.0 V	GND	GND	GND	7.0 V	GND									10.0 V	CH ₅	9.0		9.0		9.0		V _{dc}
		572											GND	7.0 V		GND	7.0 V											CH ₆							
		573											7.0 V	7.0 V		GND	7.0 V											CH ₇							
		574											GND	GND		7.0 V	GND											CH ₈							
		575											7.0 V	GND														CH ₉							
		576											GND	7.0 V														CH ₁₀							
		577											7.0 V	7.0 V														CH ₁₁							
		578											GND	GND			7.0 V											CH ₁₂							
		579											7.0 V	GND														CH ₁₃							
		580											GND	7.0 V														CH ₁₄							
		581											7.0 V	7.0 V														CH ₁₅							
V _{IH3}		582	15.0 V										GND	GND		GND	GND									15.0 V	CH ₀	13.5		13.5		13.5			
		583											11.0 V	GND														CH ₁							
		584											GND	11.0 V														CH ₂							
		585											11.0 V	11.0 V														CH ₃							
		586											GND	GND			11.0 V											CH ₄							
		587											11.0 V	GND														CH ₅							
		588											GND	11.0 V														CH ₆							
		589											11.0 V	11.0 V														CH ₇							
		590											GND	GND		11.0 V	GND											CH ₈							
		591											11.0 V	GND														CH ₉							
		592											GND	11.0 V														CH ₁₀							
		593											11.0 V	11.0 V														CH ₁₁							
		594											GND	GND			11.0 V											CH ₁₂							
		595											11.0 V	GND														CH ₁₃							
		596											GND	11.0 V														CH ₁₄							
		597											11.0 V	11.0 V														CH ₁₅							

See footnotes at end of table

See footnotes at end of table.

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TABLE III. Group A inspection for device type D1 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, L, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C		
			Symbol	CO ₁	CH ₇	CH ₆	CH ₅	CH ₄	CH ₃	CH ₂	CH ₁	CH ₀	A	B	V _{SS}	D	C	INH	CH ₁₅	CH ₁₄	CH ₁₃	CH ₁₂	CH ₁₁	CH ₁₀	CH ₉	CH ₈		V _{DD}	Min	Max	Min	Max	Min	
Test No.																																		
V _{IL1}	Z/	598	5.0 V										GND	GND	GND	GND	GND	5.0 V								5.0 V	CH ₀	0.5		0.5		0.5	V _{dc}	
		599											1.5 V	GND													CH ₁							
		600											GND	1.5 V													CH ₂							
		601											1.5 V	1.5 V													CH ₃							
		602											GND	GND			1.5 V										CH ₄							
		603											1.5 V	GND													CH ₅							
		604											GND	1.5 V													CH ₆							
		605											1.5 V	1.5 V													CH ₇							
		606											GND	GND		1.5 V	GND										CH ₈							
		607											1.5 V	GND													CH ₉							
		608											GND	1.5 V													CH ₁₀							
		609											1.5 V	1.5 V													CH ₁₁							
		610											GND	GND			1.5 V										CH ₁₂							
611											1.5 V	GND													CH ₁₃									
612											GND	1.5 V													CH ₁₄									
613											1.5 V	1.5 V													CH ₁₅									
V _{IL2}		614	10.0 V										GND	GND		GND	GND	10.0 V								10.0 V	CH ₀	1.0		1.0		1.0		
		615											3.0 V	GND													CH ₁							
		616											GND	3.0 V													CH ₂							
		617											3.0 V	3.0 V													CH ₃							
		618											GND	GND			3.0 V										CH ₄							
		619											3.0 V	GND													CH ₅							
		620											GND	3.0 V													CH ₆							
		621											3.0 V	3.0 V													CH ₇							
		622											GND	GND		3.0 V	GND										CH ₈							
		623											3.0 V	GND		3.0 V	GND										CH ₉							
		624											GND	3.0 V		3.0 V	GND										CH ₁₀							

See footnotes at end of table.

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TABLE III. Group A inspection for device type 01 - Continued.

TABLE III. Group A inspection for device type 01 - Continued.																																		
Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C		
			Symbol	CO/I	CH ₇	CH ₆	CH ₅	CH ₄	CH ₃	CH ₂	CH ₁	CH ₀	A	B	V _{SS}	D	C	INH	CH ₁₅	CH ₁₄	CH ₁₃	CH ₁₂	CH ₁₁	CH ₁₀	CH ₉	CH ₈		V _{DD}	Min	Max	Min	Max	Min	
Test No.																																		
V _{IL2}	Z/	625	10.0 V									3.0 V	3.0 V	GND	3.0 V	GND	10.0 V									10.0 V	CH ₁₁		1.0		1.0		1.0	V _{dc}
		626										GND	GND			3.0 V											CH ₁₂							
		627										3.0 V	GND														CH ₁₃							
		628										GND	3.0 V														CH ₁₄							
		629										3.0 V	3.0 V														CH ₁₅							
V _{IL3}		630	15.0 V									GND	GND		GND	GND	15.0 V								15.0 V	CH ₀		1.5		1.5		1.5		
		631										4.0 V	GND													CH ₁								
		632										GND	4.0 V													CH ₂								
		633										4.0 V	4.0 V													CH ₃								
		634										GND	GND			4.0 V										CH ₄								
		635										4.0 V	GND													CH ₅								
		636										GND	4.0 V													CH ₆								
		637										4.0 V	4.0 V													CH ₇								
		638										GND	GND		4.0 V	GND										CH ₈								
		639										4.0 V	GND													CH ₉								
		640										GND	4.0 V													CH ₁₀								
		641										4.0 V	4.0 V													CH ₁₁								
		642										GND	GND			4.0 V										CH ₁₂								
		643										4.0 V	GND													CH ₁₃								
		644										GND	4.0 V													CH ₁₄								
		645										4.0 V	4.0 V													CH ₁₅								
I _{DOFF}	Fig. 9	646	5.0 V	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND		GND	GND	5.0 V	GND	GND	GND	GND	GND	GND	GND	5.0 V	CO/I		±100		±100		±100	nA	
		647																								CH ₀								
		648																								CH ₁								
		649																								CH ₂								
		650																								CH ₃								
651																									CH ₄									

See footnotes at end of table.

MIL-883C/17A

See footnotes at end of table.

TABLE III. Group A inspection for device type 01 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, L, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	CO/1	CH ₇	CH ₆	CH ₅	CH ₄	CH ₃	CH ₂	CH ₁	CH ₀	A	B	V _{SS}	D	C	INH	CH ₁₅	CH ₁₄	CH ₁₃	CH ₁₂	CH ₁₁	CH ₁₀	CH ₉	CH ₈		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
I _{DOFF}	Fig. 9		652	5.0 V			GND					GND	GND	GND	GND	GND	5.0 V										5.0 V	CH ₅		±100		±100		±100	nA
			653																									CH ₆							
			654		GND																							CH ₇							
			655																									CH ₈							
			656																									CH ₉							
			657																									CH ₁₀							
			658																									CH ₁₁							
			659																									CH ₁₂							
			660																									CH ₁₃							
			661																									CH ₁₄							
			662																									CH ₁₅							
			663	GND	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	CO/1								
			664																									CH ₀							
			665																									CH ₁							
			666																									CH ₂							
			667																									CH ₃							
			668																									CH ₄							
			669																									CH ₅							
			670																									CH ₆							
			671																									CH ₇							
			672																									CH ₈							
			673																									CH ₉							
			674																									CH ₁₀							
			675																									CH ₁₁							
			676																									CH ₁₂							
			677																									CH ₁₃							
			678																									CH ₁₄							
			679																									CH ₁₅							

See footnotes at end of table.

TABLE III. Group A inspection for device type 01 - Continued.

[illegible]

See footnotes at end of table.

TABLE III. Group A inspection for device type 01 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, L, V, U	Terminal conditions 1/																								Measured terminal	Test limits						Units
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 4 T _A = 25°C						
			Symbol	CO ₁	CH ₇	CH ₆	CH ₅	CH ₄	CH ₃	CH ₂	CH ₁	CH ₀	A	B	V _{SS}	D	C	INH	CH ₁₅	CH ₁₄	CH ₁₃	CH ₁₂	CH ₁₁	CH ₁₀	CH ₉	CH ₈		V _{DD}	Min	Max	Min	Max	Min	
Test No.																																		
C _{10S}	3012	770	6/										6/	GND	GND	GND	GND	GND	GND								GND	CH ₀ → CO ₁		0.4				pF
		771												6/													CH ₁ → CO ₁							
		772																									CH ₂ → CO ₁							
		773																									CH ₃ → CO ₁							
		774						6/																			CH ₄ → CO ₁							
		775				6/																					CH ₅ → CO ₁							
		776			6/																						CH ₆ → CO ₁							
		777		6/																							CH ₇ → CO ₁							
		778																							6/		CH ₈ → CO ₁							
		779																						6/			CH ₉ → CO ₁							
		780																									CH ₁₀ → CO ₁							
		781																						6/			CH ₁₁ → CO ₁							
		782																									CH ₁₂ → CO ₁							
		783																									CH ₁₃ → CO ₁							
		784																	6/		6/						CH ₁₄ → CO ₁							
		785																	6/								CH ₁₅ → CO ₁							
																												Subgroup 9 T _A = 25°C		Subgroup 10 T _A = 125°C		Subgroup 11 T _A = -55°C		
																												Min	Max	Min	Max	Min	Max	
*PLH1 and *PHL1	3003 Fig. 10	786	IN									OUT	GND	GND	GND	GND	GND	GND								5.0 V	CO ₁ → CH ₀	3	55	4	77	3	55	ns
		787											5.0 V	GND													CO ₁ → CH ₁							
		788											GND	5.0 V													CO ₁ → CH ₂							
		789											5.0 V	5.0 V													CO ₁ → CH ₃							
		790											GND	GND													CO ₁ → CH ₄							
		791					OUT						5.0 V	GND													CO ₁ → CH ₅							
		792			OUT								GND	5.0 V													CO ₁ → CH ₆							
		793		OUT									5.0 V	5.0 V													CO ₁ → CH ₇							

See footnotes at end of table.

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TABLE III. Group A inspection for device type 01 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 9 T _A = 25°C		Subgroup 10 T _A = 125°C		Subgroup 11 T _A = -55°C			
			Symbol	CO ₁	CH ₇	CH ₆	CH ₅	CH ₄	CH ₃	CH ₂	CH ₁	CH ₀	A	B	V _{SS}	D	C	INH	CH ₁₅	CH ₁₄	CH ₁₃	CH ₁₂	CH ₁₁	CH ₁₀	CH ₉	CH ₈		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
t _{PLH1} and t _{PHL1}	3003 Fig. 10	794	IN										GND	GND													CO ₁ → CH ₈	3	55	4	77	3	55	ns	
		795											5.0 V	GND												OUT									
		796											GND	5.0 V										OUT			CO ₁ → CH ₁₀								
		797											5.0 V	5.0 V									OUT			CO ₁ → CH ₁₁									
		798											GND	GND			5.0 V									CO ₁ → CH ₁₂									
		799											5.0 V	GND												CO ₁ → CH ₁₃									
		800											GND	5.0 V												CO ₁ → CH ₁₄									
		801											5.0 V	5.0 V					OUT							CO ₁ → CH ₁₅									
t _{PLH2}	3003 Fig. 12	802	5.0 V										IN	GND													A → CH ₀	30	600	41	830	30	600	MIL-38510/178A	
		803											IN	GND													A → CH ₁								
		804											GND	IN													B → CH ₂								
		805											IN	IN													B → CH ₃								
		806											GND	GND													C → CH ₄								
		807											IN	GND													A → CH ₅								
		808											GND	IN													B → CH ₆								
		809		OUT									IN	IN													C → CH ₇								
		810											GND	GND													D → CH ₈								
		811											IN	GND													A → CH ₉								
		812											GND	IN													B → CH ₁₀								
		813											IN	IN													D → CH ₁₁								
		814											GND	GND													C → CH ₁₂								
		815											IN	GND													A → CH ₁₃								
		816											GND	IN													B → CH ₁₄								
		817											IN	IN													D → CH ₁₅								
t _{PHL2}		818-833	Same tests and terminal conditions as for tests 802-817, except limits are as shown.																									20	400	28	560	20	400		

See footnotes at end of table.

TABLE III. Group A inspection for device type 01 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 9 T _A = 25°C		Subgroup 10 T _A = 125°C		Subgroup 11 T _A = -55°C			
			Symbol	CO ₁	CH ₇	CH ₆	CH ₅	CH ₄	CH ₃	CH ₂	CH ₁	CH ₀	A	B	V _{SS}	D	C	INH	CH ₁₅	CH ₁₄	CH ₁₃	CH ₁₂	CH ₁₁	CH ₁₀	CH ₉	CH ₈		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
t _{PLH3} ↓	3003 Fig. 14 ↓	834	5.0 V									OUT	GND	GND	GND	GND	IN									5.0 V	INH → CH ₀	30	600	41	830	30	600	ns	
		835									OUT	5.0 V	GND														INH → CH ₁								
		836										GND	5.0 V														INH → CH ₂								
		837								OUT		5.0 V	5.0 V														INH → CH ₃								
		838					OUT		OUT			GND	GND			5.0 V											INH → CH ₄								
		839										5.0 V	GND														INH → CH ₅								
		840			OUT							GND	5.0 V														INH → CH ₆								
		841		OUT								5.0 V	5.0 V														INH → CH ₇								
		842										GND	GND		5.0 V	GND										OUT	INH → CH ₈								
		843										5.0 V	GND												OUT		INH → CH ₉								
		844										GND	5.0 V											OUT			INH → CH ₁₀								
		845										5.0 V	5.0 V														INH → CH ₁₁								
		846										GND	GND			5.0 V					OUT						INH → CH ₁₂								
		847										5.0 V	GND														INH → CH ₁₃								
		848										GND	5.0 V						OUT								INH → CH ₁₄								
		849										5.0 V	5.0 V					OUT									INH → CH ₁₅								
t _{PHL3}	3003 Fig. 14	850-865	Same tests and terminal conditions as for tests 834-849, except limits are as shown.																									20	400	28	560	20	400		
																												Subgroup 12 T _A = 25°C							
																												Min	Max						
t _{PLH1} t _{PHL1}	3003 Fig. 10	866-881	Same tests and terminal conditions as for tests 786-801, except V _{DD} = 10.0 V and limits are as shown.																									1	25					ns	
t _{PLH2} t _{PHL2}	3003 Fig. 12	882-913	Same tests and terminal conditions as for tests 802-833, except CO ₁ =V _{DD} =10.0 V and limits are as shown.																									13	250						
t _{PLH3} t _{PHL3}	3003 Fig. 14	914-945	Same tests and terminal conditions as for tests 834-865, except CO ₁ =V _{DD} =10.0 V and limits are as shown.																									13	250						
																												8	150						

See footnotes at end of table.

TABLE III. Group A inspection for device type 02.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	COY	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
V _{IC} (pos) ↓		1		1 mA																						GND	CHX ₇		1.5					Vdc	
	2			1 mA																						CHX ₆									
	3				1 mA																					CHX ₅									
	4					1 mA																				CHX ₄									
	5						1 mA																			CHX ₃									
	6							1 mA																		CHX ₂									
	7								1 mA																	CHX ₁									
	8									1 mA																CHX ₀									
	9										1 mA															A									
	10											1 mA														B									
	11												1 mA													INH									
	12													1 mA												C									
	13														1 mA											CHY ₇									
	14															1 mA										CHY ₆									
	15																1 mA									CHY ₅									
	16																	1 mA								CHY ₄									
	17																		1 mA							CHY ₃									
	18																			1 mA						CHY ₂									
	19																				1 mA					CHY ₁									
	20																					1 mA				CHY ₀									
	21																						1 mA			COY									
	22		1 mA																							↓	COX								
V _{IC} (neg) ↓		23		-1 mA									GND													CHX ₇			-6.0						
	24				-1 mA																					CHX ₆									
	25					-1 mA																				CHX ₅									
	26						-1 mA																			CHX ₄									
	27							-1 mA																		CHX ₃									

See footnotes at end of table.

TABLE III. Group A inspection for device type Q2 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, L, Y, Z	Terminal conditions 1/																								Measured terminal	Test limits						Units																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	COY	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀		V _{DD}	Min	Max	Min	Max	Min		Max																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
			Test No.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
V _{IC} (neg)			28																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

See footnotes at end of table.

TABLE III. Group A inspection for device type 02 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	COY	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
V _{OH1}	3006	55		15.0 V							15.0 V	15.0 V	GND	GND	15.0 V										15.0 V	COX	14.95			14.95			14.95	V _{dc}	
		56										15.0 V	15.0 V			15.0 V	15.0 V									COY									
		57	15.0 V									GND	GND			GND			GND							CHX ₀									
		58										15.0 V	GND													CHX ₁									
		59										GND	15.0 V													CHX ₂									
		60										15.0 V	15.0 V													CHX ₃									
		61										GND	GND			15.0 V										CHX ₄									
		62										15.0 V	GND													CHX ₅									
		63										GND	15.0 V													CHX ₆									
		64										15.0 V	15.0 V													CHX ₇									
		65	GND									GND	GND			GND			15.0 V							CHY ₀									
		66										15.0 V	GND													CHY ₁									
		67										GND	15.0 V													CHY ₂									
		68										15.0 V	15.0 V													CHY ₃									
69										GND	GND			15.0 V										CHY ₄											
70										15.0 V	GND													CHY ₅											
71										GND	15.0 V													CHY ₆											
72										15.0 V	15.0 V													CHY ₇											
V _{OL1}	3007	73								GND	GND	GND		15.0 V	GND										COX		0.05			0.05			0.05		
		74										GND													COY										
		75	GND									GND													CHX ₀										
		76										15.0 V							GND							CHX ₁									
		77										GND	15.0 V													CHX ₂									
		78										15.0 V	15.0 V													CHX ₃									
		79										GND	GND													CHX ₄									
		80										15.0 V	GND													CHX ₅									
		81										GND	15.0 V													CHX ₆									

See footnotes at end of table.

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TABLE III. Group A inspection for device type 02 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	COY	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
V _{OL1}	3007	82	GND								15.0 V	15.0 V	GND	15.0 V	15.0 V			GND							15.0 V	CHX ₇	0.05		0.05		0.05	V _{dc}			
		83									GND	GND			GND											CHY ₀									
		84									15.0 V	GND														CHY ₁									
		85									GND	15.0 V			15.0 V	15.0 V										CHY ₂									
		86									15.0 V	15.0 V														CHY ₃									
		87									GND	GND			15.0 V											CHY ₄									
		88									15.0 V	GND														CHY ₅									
		89									GND	15.0 V														CHY ₆									
		90									15.0 V	15.0 V														CHY ₇									
I _{IH1} 3/	3010	91		18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V		18.0 V	18.0 V	18.0 V			18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	All inputs	20					nA			
I _{IH2} 3/		92	18.0 V								GND	GND		GND	GND					18.0 V						COX	1.0		45						
		93									GND	GND														COY									
		94		GND	GND	GND	GND	GND	GND	GND	18.0 V	GND				GND	GND			GND	GND	GND	GND	GND	GND	A									
		95									GND	18.0 V														B									
		96										GND														C									
		97												18.0 V	GND											INH									
		98												GND	GND											CHX ₀									
		99									18.0 V															CHX ₁									
		100									GND	18.0 V														CHX ₂									
		101									18.0 V	18.0 V														CHX ₃									
		102									GND	GND														CHX ₄									
		103									18.0 V	GND														CHX ₅									
		104									GND	18.0 V														CHX ₆									
		105		18.0 V	GND	GND	GND				18.0 V	18.0 V														CHX ₇									
		106									GND	GND														CHY ₀									
		107									18.0 V	GND														CHY ₁									
		108									GND	18.0 V														CHY ₂									

See footnotes at end of table.

TABLE III. Group A inspection for device type 02 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, L, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C		
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	COY	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀		V _{DD}	Min	Max	Min	Max	Min	
Test No.																																		
I _{TH2} 3/	3010	109									18.0 V	18.0 V	GND	GND	GND	GND	GND			GND	GND	18.0 V	GND	GND	18.0 V	CHY ₃		1.0		45			nA	
		110									GND	GND			18.0 V		GND			GND	18.0 V	GND			CHY ₄									
		111									18.0 V	GND				GND				18.0 V	GND				CHY ₅									
		112									GND	18.0 V					18.0 V			GND					CHY ₆									
		113									18.0 V	18.0 V				18.0 V	GND			GND					CHY ₇									
I _{IL1} 3/	3009	114		GND	GND	GND	GND	GND		GND	GND	GND	GND		GND	GND	GND			GND					All inputs		-20							
I _{IL2} 3/		115	GND								18.0 V	18.0 V				18.0 V				GND					COX		-1.0		-45					
		116									18.0 V	18.0 V													COY									
		117		18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	GND	18.0 V			18.0 V	18.0 V			18.0 V	18.0 V	18.0 V	18.0 V	A									
		118									18.0 V	18.0 V													B									
		119									18.0 V	18.0 V			GND										C									
		120									18.0 V	18.0 V			18.0 V										INH									
		121									GND	GND			GND										CHX ₀									
		122									18.0 V	18.0 V	GND												CHX ₁									
		123									GND	18.0 V													CHX ₂									
		124									18.0 V	18.0 V													CHX ₃									
		125									GND	GND			18.0 V										CHX ₄									
		126									18.0 V	GND													CHX ₅									
		127									GND	18.0 V													CHX ₆									
		128		GND	18.0 V	18.0 V	18.0 V				18.0 V	18.0 V													CHX ₇									
		129									GND	GND			GND	18.0 V	18.0 V		18.0 V	18.0 V	18.0 V	18.0 V	GND		CHY ₀									
		130									18.0 V	GND													CHY ₁									
		131									GND	18.0 V													CHY ₂									
		132									18.0 V	18.0 V													CHY ₃									
		133									GND	GND			18.0 V										CHY ₄									
		134									18.0 V	GND													CHY ₅									
		135									GND	18.0 V													CHY ₆									
		136									18.0 V	18.0 V													CHY ₇									

See footnotes at end of table.

TABLE III. Group A inspection for device type 02 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	COY	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
R _{ON11}	Fig. 6		137	V _{IS} = -2.0 V							V _{OS}		-2.5 V	-2.5 V	-2.5 V	-2.5 V	-2.5 V									2.5 V	CHX ₀		500		700		350	Ω	
			138								V _{OS}		2.5 V	-2.5 V													CHX ₁								
			139								V _{OS}		-2.5 V	2.5 V													CHX ₂								
			140								V _{OS}		2.5 V	2.5 V													CHX ₃								
			141								V _{OS}		-2.5 V	-2.5 V			2.5 V										CHX ₄								
			142								V _{OS}		2.5 V	-2.5 V													CHX ₅								
			143								V _{OS}		-2.5 V	2.5 V													CHX ₆								
			144								V _{OS}		2.5 V	2.5 V													CHX ₇								
			145										-2.5 V	-2.5 V			-2.5 V			V _{IS} = -2.0 V					V _{OS}	CHY ₀									
			146										2.5 V	-2.5 V											V _{OS}		CHY ₁								
			147										-2.5 V	2.5 V										V _{OS}		CHY ₂									
			148										2.5 V	2.5 V										V _{OS}		CHY ₃									
	149										-2.5 V	-2.5 V			2.5 V						V _{OS}		CHY ₄												
	150										2.5 V	-2.5 V						V _{OS}						CHY ₅											
	151										-2.5 V	2.5 V					V _{OS}							CHY ₆											
	152										2.5 V	2.5 V				V _{OS}								CHY ₇											

See footnotes at end of table.

TABLE III. Group A inspection for device type 02 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions I/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	COY	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
R _{ON12}	Fig. 6	153-168	Same tests and terminal conditions as for tests 137-152, except V _{IS} = -0.9 V and limits are as shown.																										700		900		500.	Ω	
R _{ON13}		169-184	Same tests and terminal conditions as for tests 137-152, except V _{IS} = 1.0 V and limits are as shown.																										600		800		400		
R _{ON14}		185-200	Same tests and terminal conditions as for tests 137-152, except V _{IS} = 2.0 V and limits are as shown.																										500		700		300		
R _{ON11}		201	V _{OS}									V _{IS} = -2.0 V	-2.5 V	-2.5 V	-2.5 V	-2.5 V	-2.5 V									2.5 V	COX		500		700		350		
		202										V _{IS} = -2.0 V	2.5 V	-2.5 V																					
		203										V _{IS} = -2.0 V	-2.5 V	2.5 V																					
		204										V _{IS} = -2.0 V	2.5 V	2.5 V																					
		205										V _{IS} = -2.0 V	-2.5 V	-2.5 V			2.5 V																		
		206										V _{IS} = -2.0 V	2.5 V	-2.5 V																					
		207										V _{IS} = -2.0 V	-2.5 V	2.5 V																					
		208										V _{IS} = -2.0 V	2.5 V	2.5 V																					
		209										V _{IS} = -2.0 V	-2.5 V	-2.5 V			-2.5 V			V _{OS}															
		210										V _{IS} = -2.0 V	2.5 V	-2.5 V																					
		211										V _{IS} = -2.0 V	-2.5 V	2.5 V																					
		212										V _{IS} = -2.0 V	2.5 V	2.5 V																					
		213										V _{IS} = -2.0 V	-2.5 V	-2.5 V			2.5 V																		

See footnotes at end of table.

TABLE III. Group A inspection for device type 02 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C		
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	COY	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀		V _{DD}	Min	Max	Min	Max	Min	
Test No.																																		
R _{ON11} ↓	Fig. 6 ↓	214									2.5 V	-2.5 V	-2.5 V	-2.5 V	2.5 V			V _{OS}	V _{IS} = -2.0 V						2.5 V	COY		500		700		350	Ω	
		215									-2.5 V	2.5 V						V _{IS} = -2.0 V																
		216										2.5 V	2.5 V	↓	↓	↓		V _{IS} = -2.0 V	↓						↓	↓		↓		↓		↓		
R _{ON12}		217-232	Same tests and terminal conditions as for tests 201-216, except V _{IS} = -0.9 V and limits are as shown.																									700		900		500		
R _{ON13}		233-248	Same tests and terminal conditions as for tests 201-216, except V _{IS} = 1.0 V and limits are as shown.																									600		800		400		
R _{ON14} ↓		249-264	Same tests and terminal conditions as for tests 201-216, except V _{IS} = 2.0 V and limits are as shown.																									500		700		300		
R _{ON21} ↓	Fig. 7 ↓	265	V _{IS} = -5.0 V								V _{OS}	-5.0 V	-5.0 V	-5.0 V	-5.0 V	-5.0 V									5.0 V	CHX ₀		200		260		140		
		266									V _{OS}	5.0 V	-5.0 V													CHX ₁								
		267									V _{OS}	-5.0 V	5.0 V													CHX ₂								
		268									V _{OS}	5.0 V	5.0 V													CHX ₃								
		269									V _{OS}	-5.0 V	-5.0 V													CHX ₄								
		270									V _{OS}	5.0 V	-5.0 V													CHX ₅								
		271									V _{OS}	-5.0 V	5.0 V													CHX ₆								
		272									V _{OS}	5.0 V	5.0 V													CHX ₇								
		273										-5.0 V	-5.0 V	↓	↓	-5.0 V			V _{IS} = -5.0 V						V _{OS}	CHY ₀		↓		↓		↓	↓	

See footnotes at end of table.

TABLE III. Group A inspection for device type 02 - Continued.

TABLE 111. Group A Inspection for device type UC - Continued.																																		
Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C		
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	COY	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀		V _{DD}	Min	Max	Min	Max	Min	
Test No.																																		
R _{ON21}	Fig. 7	274									5.0 V	-5.0 V	-5.0 V	-5.0 V	-5.0 V				V _{IS} = -5.0 V					V _{OS}		5.0 V	CHY ₁		200		260		140	Ω
		275										-5.0 V	5.0 V											V _{OS}			CHY ₂							
		276										5.0 V	5.0 V										V _{OS}			CHY ₃								
		277										-5.0 V	-5.0 V			5.0 V					V _{OS}					CHY ₄								
		278										5.0 V	-5.0 V						V _{OS}							CHY ₅								
		279										-5.0 V	5.0 V					V _{OS}								CHY ₆								
		280										5.0 V	5.0 V				V _{OS}									CHY ₇								
R _{ON22}		281-296	Same tests and terminal conditions as for tests 265-280, except V _{IS} = -3.0 V and limits are as shown.																									250		325		175		
R _{ON23}		297-312	Same tests and terminal conditions as for tests 265-280, except V _{IS} = 3.5 V and limits are as shown.																									250		325		175		
R _{ON24}		313-328	Same tests and terminal conditions as for tests 265-280, except V _{IS} = 5.0 V and limits are as shown.																									200		260		140		
R _{ON21}		329	V _{OS}								V _{IS} = -5.0 V	-5.0 V	-5.0 V	-5.0 V	-5.0 V											5.0 V	COX							
		330										5.0 V	-5.0 V																					
		331										-5.0 V	5.0 V																					
		332										5.0 V	5.0 V																					
		333										-5.0 V	-5.0 V			5.0 V																		
		334										5.0 V	-5.0 V			5.0 V																		

See footnotes at end of table.

TABLE III. Group A inspection for device type 02 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	COY	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
R _{ON21}	Fig. 7		335	V _{OS}		V _{IS} = -5.0 V								-5.0 V	5.0 V	-5.0 V	-5.0 V	5.0 V									5.0 V	COX		200		260		140	Ω
			336	V _{OS}	V _{IS} = -5.0 V											5.0 V	5.0 V			5.0 V									COX						
			337													-5.0 V	-5.0 V			-5.0 V						V _{IS} = -5.0 V	COY								
			338													5.0 V	-5.0 V									V _{IS} = -5.0 V									
			339													-5.0 V	5.0 V									V _{IS} = -5.0 V									
			340													5.0 V	5.0 V									V _{IS} = -5.0 V									
			341													-5.0 V	-5.0 V			5.0 V						V _{IS} = -5.0 V									
			342													5.0 V	-5.0 V									V _{IS} = -5.0 V									
			343													-5.0 V	5.0 V									V _{IS} = -5.0 V									
			344													5.0 V	5.0 V			V _{IS} = -5.0 V															
R _{ON22}			345-360	Same tests and terminal conditions as for tests 329-344, except V _{IS} = -3.0 V and limits are as shown.																									250		325		175		
R _{ON23}			361-376	Same tests and terminal conditions as for tests 329-344, except V _{IS} = 3.5 V and limits are as shown.																									250		325		175		
R _{ON24}			377-392	Same tests and terminal conditions as for tests 329-344, except V _{IS} = 5.0 V and limits are as shown.																									200		260		140		
R _{ON31}	Fig. 8		393	V _{IS} = -7.5 V								V _{OS}	-7.5 V	-7.5 V	-7.5 V	-7.5 V	-7.5 V									7.5 V	CHX ₀	150		200		100			
R _{ON31}	Fig. 8		394	V _{IS} = -7.5 V								V _{OS}	7.5 V	-7.5 V	-7.5 V	-7.5 V	-7.5 V									7.5 V	CHX ₁	150		200		100	↓		

See footnotes at end of table.

TABLE III. Group A inspection for device type 02 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	COY	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀		V _{DD}	Min	Max	Min	Max	Min		Max
Test No.																																			
R _{ON} 31	Fig. 8	395	V _{IS} = -7.5 V									-7.5 V	7.5 V	-7.5 V	-7.5 V	-7.5 V											7.5 V	CHX ₂		150		200		100	Ω
		396											7.5 V	7.5 V			-7.5 V												CHX ₃						
		397											-7.5 V	-7.5 V			7.5 V												CHX ₄						
		398											7.5 V	-7.5 V																CHX ₅					
		399											-7.5 V	7.5 V																CHX ₆					
		400											7.5 V	7.5 V																CHX ₇					
		401											-7.5 V	-7.5 V			-7.5 V												CHY ₀						
		402											7.5 V	-7.5 V																CHY ₁					
		403											-7.5 V	7.5 V																CHY ₂					
		404											7.5 V	7.5 V																CHY ₃					
		405											-7.5 V	-7.5 V			7.5 V													CHY ₄					
		406											7.5 V	-7.5 V																CHY ₅					
		407											-7.5 V	7.5 V																CHY ₆					
		408											7.5 V	7.5 V																CHY ₇					
R _{ON} 32		409-424	Same tests and terminal conditions as for tests 393-408, except V _{IS} = -5.0 V and limits are as shown.																									170		230		120			
R _{ON} 33		425-440	Same tests and terminal conditions as for tests 393-408, except V _{IS} = 0 V and limits are as shown.																									170		230		120			
R _{ON} 34		441-456	Same tests and terminal conditions as for tests 393-408, except V _{IS} = 6.0 V and limits are as shown.																									170		230		120			
R _{ON} 35		457-472	Same tests and terminal conditions as for tests 393-408, except V _{IS} = 7.5 V and limits are as shown.																									150		200		100			

TABLE III. Group A inspection for device type 02 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	COY	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
RON31	Fig. 8	473	V _{OS}								V _{IS} = -7.5 V	-7.5 V	-7.5 V	-7.5 V	-7.5 V											7.5 V	COX		150		200		100	Ω	
		474									V _{IS} = -7.5 V	7.5 V	-7.5 V																						
		475									V _{IS} = -7.5 V	-7.5 V	7.5 V																						
		476									V _{IS} = -7.5 V	7.5 V	7.5 V																						
		477									V _{IS} = -7.5 V	-7.5 V	-7.5 V			7.5 V																			
		478									V _{IS} = -7.5 V	7.5 V	-7.5 V																						
		479									V _{IS} = -7.5 V	-7.5 V	7.5 V																						
		480		V _{IS} = -7.5 V								7.5 V	7.5 V																						
		481										-7.5 V	-7.5 V			-7.5 V			V _{OS}							V _{IS} = -7.5 V	COY								
		482										7.5 V	-7.5 V																						
		483										-7.5 V	7.5 V																						
		484										7.5 V	7.5 V																						
		485										-7.5 V	-7.5 V			7.5 V																			
		486										7.5 V	-7.5 V							V _{IS} = -7.5 V															
		487										-7.5 V	7.5 V																						
		488										7.5 V	7.5 V																						

See footnotes at end of table.

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TABLE III. Group A inspection for device type 02 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	COY	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
R _{OK32}	Fig. 8	489-504	Same tests and terminal conditions as for tests 473-488, except V _{IS} = -5.0 V and limits are as shown.																										170		230		120		Ω
R _{OK33}		505-520	Same tests and terminal conditions as for tests 473-488, except V _{IS} = 0 V and limits are as shown.																										170		230		120		
R _{OK34}		521-536	Same tests and terminal conditions as for tests 473-488, except V _{IS} = 6.0 V and limits are as shown.																										170		230		120		
R _{OK35}		537-552	Same tests and terminal conditions as for tests 473-488, except V _{IS} = 7.5 V and limits are as shown.																										150		200		100		↓
V _{IH1}	Z/	553	5.0 V										GND	GND	GND	GND	GND									5.0 V	CHX ₇	4.5		4.5		4.5		V _{dc}	
		554											3.5 V	GND													CHX ₆								
		555											GND	3.5 V													CHX ₅								
		556											3.5 V	3.5 V													CHX ₄								
		557											GND	GND													CHX ₃								
		558											3.5 V	GND													CHX ₂								
		559											GND	3.5 V													CHX ₁								
		560											3.5 V	3.5 V													CHX ₀								
		561	GND										GND	GND													CHY ₇								
		562											3.5 V	GND													CHY ₆								
		563											GND	3.5 V													CHY ₅								
		564											3.5 V	3.5 V													CHY ₄								
		565											GND	GND													CHY ₃								
		566											3.5 V	GND													CHY ₂								
		567											GND	3.5 V													CHY ₁								
		568											3.5 V	3.5 V													CHY ₀								
V _{IH2}		569	10.0 V										GND	GND													10.0 V	CHX ₇	9.0		9.0		9.0		
		570											7.0 V	GND														CHX ₆							
		571											GND	7.0 V														CHX ₅							
		572											7.0 V	7.0 V														CHX ₄							
		573											GND	GND														CHX ₃							

See footnotes at end of table.

TABLE III. Group A inspection for device type 02 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C		
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀	V _{DD}		Min	Max	Min	Max	Min	Max	
			Test No.																															
V _{IH2}	Z/	574	10.0 V									7.0 V	GND	GND	GND	7.0 V			GND							10.0 V	CHX ₂	9.0		9.0		9.0		V _{dc}
		575										GND	7.0 V			7.0 V			GND								CHX ₁							
		576										7.0 V	7.0 V			7.0 V			GND								CHX ₀							
		577	GND									GND	GND			GND			10.0 V								CHY ₇							
		578										7.0 V	GND														CHY ₆							
		579										GND	7.0 V														CHY ₅							
		580										7.0 V	7.0 V														CHY ₄							
		581										GND	GND			7.0 V											CHY ₃							
		582										7.0 V	GND														CHY ₂							
		583										GND	7.0 V														CHY ₁							
		584										7.0 V	7.0 V														CHY ₀							
V _{IH3}		585	15.0 V									GND	GND			GND			GND							15.0 V	CHX ₇	13.5		13.5		13.5		
		586										11.0 V	GND														CHX ₆							
		587										GND	11.0 V														CHX ₅							
		588										11.0 V	11.0 V														CHX ₄							
		589										GND	GND			11.0 V											CHX ₃							
		590										11.0 V	GND														CHX ₂							
		591										GND	11.0 V														CHX ₁							
		592										11.0 V	11.0 V														CHX ₀							
		593	GND									GND	GND			GND											CHY ₇							
		594										11.0 V	GND														CHY ₆							
		595										GND	11.0 V														CHY ₅							
		596										11.0 V	11.0 V														CHY ₄							
		597										GND	GND			11.0 V											CHY ₃							
		598										11.0 V	GND														CHY ₂							
		599										GND	11.0 V														CHY ₁							
		600										11.0 V	11.0 V														CHY ₀							

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See footnotes at end of table.

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TABLE III. Group A inspection for device type 02 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	COY	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
V _{IL1}	2/	601	5.0 V										GND	GND	GND	5.0 V	GND			GND							5.0 V	CHX ₇	0.5		0.5		0.5	Vdc	
		602												1.5 V	GND					GND								CHX ₆							
		603												GND	1.5 V													CHX ₅							
		604												1.5 V	1.5 V													CHX ₄							
		605												GND	GND			1.5 V										CHX ₃							
		606												1.5 V	GND													CHX ₂							
		607												GND	1.5 V													CHX ₁							
		608												1.5 V	1.5 V													CHX ₀							
		609	GND											GND	GND			GND			5.0 V							CHY ₇							
		610												1.5 V	GND													CHY ₆							
		611												GND	1.5 V													CHY ₅							
		612												1.5 V	1.5 V													CHY ₄							
		613												GND	GND			1.5 V										CHY ₃							
		614												1.5 V	GND													CHY ₂							
		615												GND	1.5 V													CHY ₁							
		616												1.5 V	1.5 V													CHY ₀							
V _{IL2}		617	10.0 V										GND	GND		10.0 V	GND			GND						10.0 V	CHX ₇	1.0		1.0		1.0			
		618												3.0 V	GND													CHX ₆							
		619												GND	3.0 V													CHX ₅							
		620												3.0 V	3.0 V													CHX ₄							
		621												GND	GND			3.0 V										CHX ₃							
		622												3.0 V	GND													CHX ₂							
		623												GND	3.0 V													CHX ₁							
		624												3.0 V	3.0 V													CHX ₀							
		625	GND											GND	GND			GND			10.0 V							CHY ₇							
		626	GND											3.0 V	GND			GND			10.0 V							CHY ₆							
		627	GND											GND	3.0 V			GND			10.0 V							CHY ₅							

See footnotes at end of table.

TABLE III. Group A inspection for device type Q2 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	COY	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀		V _{DD}	Min	Max	Min	Max	Min		Max
Test No.																																			
V _{IL2} ↓	Z/	628	GND										3.0 V	3.0 V	GND	10.0 V	GND			10.0 V							10.0 V	CHY ₄		1.0		1.0		1.0	V _{dc}
		629											GND	GND			3.0 V											CHY ₃							
		630											3.0 V	GND														CHY ₂							
		631											GND	3.0 V														CHY ₁							
		632											3.0 V	3.0 V														CHY ₀							
V _{IL3} ↓		633	15.0 V										GND	GND		15.0 V	GND			GND						15.0 V	CHX ₇		1.5		1.5		1.5		
		634											4.0 V	GND														CHX ₆							
		635											GND	4.0 V														CHX ₅							
		636											4.0 V	4.0 V														CHX ₄							
		637											GND	GND			4.0 V											CHX ₃							
		638											4.0 V	GND														CHX ₂							
		639											GND	4.0 V														CHX ₁							
		640											4.0 V	4.0 V														CHX ₀							
		641	GND										GND	GND			GND			15.0 V								CHY ₇							
		642											4.0 V	GND														CHY ₆							
		643											GND	4.0 V														CHY ₅							
		644											4.0 V	4.0 V														CHY ₄							
		645											GND	GND			4.0 V											CHY ₃							
		646											4.0 V	GND														CHY ₂							
		647											GND	4.0 V														CHY ₁							
		648											4.0 V	4.0 V														CHY ₀							
I _{DOFF1} ↓	Fig. 9	649	5.0 V	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND		5.0 V	GND		GND	GND	5.0 V	GND	GND	GND	GND	GND	5.0 V	COX		+100		+100		+100	nA
		650																									COY								
		651	5.0 V																									CHX ₀							
		652																										CHX ₁							
		653																										CHX ₂							
654													GND														CHX ₃								

See footnotes at end of table.

TABLE III. Group A inspection for device type 02 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, V, Z, U	Terminal conditions 1/																								Measured terminal	Test limits						Units
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C		
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀	V _{DD}		Min	Max	Min	Max	Min	Max	
			Test No.																															
I _{DOFF1}	Fig. 9	655	5.0 V				GND				GND	GND	GND	5.0 V	GND										5.0 V	CHX ₄	±100		±100		±100	nA		
		656	↓				GND																		CHX ₅									
		657			GND																					CHX ₆								
		658	↓	GND																						CHX ₇								
		659																								CHY ₀								
		660																								CHY ₁								
		661																								CHY ₂								
		662																								CHY ₃								
		663																								CHY ₄								
		664																								CHY ₅								
		665																								CHY ₆								
		666																								CHY ₇								
		667	GND	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V							GND								COX								
		668																5.0 V	5.0 V							CHX ₀								
		669	GND																							CHX ₁								
		670	↓																							CHX ₂								
		671																								CHX ₃								
		672																								CHX ₄								
		673																								CHX ₅								
		674																								CHX ₆								
		675	↓																							CHX ₇								
		676		5.0 V																						CHY ₀								
		677																								CHY ₁								
		678																								CHY ₂								
		679																								CHY ₃								
		680																								CHY ₄								
		681																																

See footnotes at end of table.

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TABLE III. Group A inspection for device type 02 - Continued.

TABLE 111. GROUP A INSPECTION FOR DEVICE TYPE UC - CONTINUED.																																			
Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	COY	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
I _{DOFF1}	Fig. 9	682									GND	GND	GND	5.0 V	GND		5.0 V	GND	5.0 V						5.0 V	CHY ₅		+100		+100		+100	nA		
I _{DOFF1}		683									GND	GND	GND	5.0 V	GND		5.0 V	GND							5.0 V	CHY ₆		+100		+100		+100			
I _{DOFF1}		684									GND	GND	GND	5.0 V	GND	5.0 V	GND							5.0 V	CHY ₇		+100		+100		+100				
I _{DOFF2}		685-721	Same tests and terminal conditions as for tests 667-684, except V _{DD} = 10.0 V																									+200		+200		+200			
I _{DOFF3}		722-758	Same tests and terminal conditions as for tests 667-684, except V _{DD} = 15.0 V																									+200		+500		+500			
																										Subgroup 4 T _A = 25°C									
																										Min	Max								
C _C	3012	759								4/		GND													GND	A		7.5					pF		
		760									4/															B									
		761																								C									
		762											4/													INH									
C _{IS}		763								4/	GND	GND		GND	GND											CHX ₀									
		764																								CHX ₁									
		765																								CHX ₂									
		766																								CHX ₃									
		767																								CHX ₄									
		768																								CHX ₅									
		769																								CHX ₆									
		770			4/																					CHX ₇									
		771																								CHY ₀									
		772																							4/	CHY ₁									
		773																								CHY ₂									
		774																								CHY ₃									
		775																								CHY ₄									
		776																								CHY ₅									
		777																								CHY ₆									
		778																								CHY ₇									

See footnotes at end of table.

TABLE III. Group A inspection for device type 02 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Y, Z, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 4 T _A = 25°C							
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	COY	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
C _{OS}	3012	779	5/									GND	GND	GND	GND	GND										GND	COX	50					pF		
C _{OS}		780																									COY	50							
C _{IOS}		781	5/															5/										CHX ₀ →COX	0.4						
		782																										CHX ₁ →COX							
		783																										CHX ₂ →COX							
		784																										CHX ₃ →COX							
		785																										CHX ₄ →COX							
		786																										CHX ₅ →COX							
		787																										CHX ₆ →COX							
		788		5/																								CHX ₇ →COX							
		789																										CHY ₀ →COY							
		790																										CHY ₁ →COY							
		791																										CHY ₂ →COY							
		792																										CHY ₃ →COY							
		793																										CHY ₄ →COY							
		794																										CHY ₅ →COY							
		795																										CHY ₆ →COY							
		796																										CHY ₇ →COY							
																											Subgroup 9 T _A = 25°C		Subgroup 10 T _A = 125°C		Subgroup 11 T _A = -55°C				
																											Min	Max	Min	Max	Min	Max			
t _{PLH1} and t _{PHL1}	3003 Fig. 11	797	IN									OUT	OUT	GND	GND	GND	GND	GND								5.0 V	COX→CHX ₀	3	55	4	77	3	55	ns	
		798												5.0 V	GND												COX→CHX ₁								
		799												GND	5.0 V												COX→CHX ₂								
		800												5.0 V	5.0 V												COX→CHX ₃								
		801												GND	GND												COX→CHX ₄								
		802												5.0 V	GND												COX→CHX ₅								

See footnotes at end of table.

TABLE III. Group A inspection for device type 02 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 9 T _A = 25°C		Subgroup 10 T _A = 125°C		Subgroup 11 T _A = -55°C			
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	COY	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
t _{PLH1} and t _{PHL1}	3003 Fig. 11	803	IN		OUT							GND	5.0 V		GND	GND	5.0 V									5.0 V	COX→CHX ₆	3	55	4	77	3	55	ns	
		804	IN	OUT								5.0 V	5.0 V				5.0 V										COX→CHX ₇								
		805										GND	GND				GND		IN								COY→CHY ₀								
		806										5.0 V	GND											OUT			COY→CHY ₁								
		807										GND	5.0 V											OUT			COY→CHY ₂								
		808										5.0 V	5.0 V											OUT			COY→CHY ₃								
		809										GND	GND				5.0 V						OUT				COY→CHY ₄								
		810										5.0 V	GND														COY→CHY ₅								
		811										GND	5.0 V						OUT								COY→CHY ₆								
		812										5.0 V	5.0 V					OUT									COY→CHY ₇								
t _{PLH2}	3003 Fig. 13	813	5.0 V									IN	GND				GND										A→CHX ₀	30	600	41	830	30	600		
		814										IN	GND														A→CHX ₁								
		815										GND	IN														B→CHX ₂								
		816										IN	IN														B→CHX ₃								
		817										GND	GND				IN										C→CHX ₄								
		818										IN	GND														A→CHX ₅								
		819										GND	IN														B→CHX ₆								
		820		OUT								IN	IN														C→CHX ₇								
		821										IN	GND				GND										A→CHY ₀								
		822										IN	GND														A→CHY ₁								
		823										GND	IN														B→CHY ₂								
		824										IN	IN														B→CHY ₃								
		825										GND	GND				IN										C→CHY ₄								
		826										IN	GND														A→CHY ₅								
		827										GND	IN														B→CHY ₆								
		828										IN	IN					OUT									C→CHY ₇								
t _{PHL2}	3003 Fig. 13	829-844	Same tests and terminal conditions as for tests 814-829, except limits are as shown.																									20	400	28	560	20	400		

See footnotes at end of table.

TABLE III. Group A inspection for device type 02 - Continued.

Symbol	MIL-STD-883 method	Cases J, K, Z, Y, U	Terminal conditions 1/																								Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Subgroup 9 T _A = 25°C		Subgroup 10 T _A = 125°C		Subgroup 11 T _A = -55°C			
			Symbol	COX	CHX ₇	CHX ₆	CHX ₅	CHX ₄	CHX ₃	CHX ₂	CHX ₁	CHX ₀	A	B	V _{SS}	INH	C	CHY ₇	CHY ₆	COY	CHY ₅	CHY ₄	CHY ₃	CHY ₂	CHY ₁	CHY ₀		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																																
t _{PLH3}	3003 Fig. 15	845	5.0 V									OUT	GND	GND	GND	IN	GND									5.0 V	INH→CHX ₀	30	600	41	830	30	600	ns	
		846											5.0 V	GND													INH→CHX ₁								
		847											GND	5.0 V													INH→CHX ₂								
		848							OUT				5.0 V	5.0 V													INH→CHX ₃								
		849						OUT					GND	GND			5.0 V										INH→CHX ₄								
		850					OUT						5.0 V	GND													INH→CHX ₅								
		851				OUT							GND	5.0 V													INH→CHX ₆								
		852		OUT									5.0 V	5.0 V													INH→CHX ₇								
		853											GND	GND						5.0 V					OUT		INH→CHY ₀								
		854											5.0 V	GND													INH→CHY ₁								
		855											GND	5.0 V													INH→CHY ₂								
		856											5.0 V	5.0 V													INH→CHY ₃								
		857											GND	GND			5.0 V										INH→CHY ₄								
		858											5.0 V	GND													INH→CHY ₅								
		859											GND	5.0 V							OUT							INH→CHY ₆							
		860											5.0 V	5.0 V				OUT										INH→CHY ₇							
t _{PHL3}		861-876	Same tests and terminal conditions as for tests 846-861, except limits are as shown.																									20	400	28	560	20	400		
																										Measured terminal	Subgroup 12 T _A = 25°C						Units		
																											Min	Max							
t _{PLH1} t _{PHL1}	3003 Fig. 11	877-892	Same tests and terminal conditions as for tests 797-812, except V _{DD} = 10.0 V and limits are as shown.																									1	25					ns	
t _{PLH2} t _{PHL2}	3003 Fig. 13	893-924	Same tests and terminal conditions as for tests 813-844, except COX and COY = 10.0 V (where applicable) and V _{DD} = 10.0 V and limits are as shown.																									13	250						
t _{PLH3} t _{PHL3}	3003 Fig. 15	925-956	Same tests and terminal conditions as for tests 845-876, except COX and COY = 10.0 V (where applicable) and V _{DD} = 10.0 V and limits are as shown.																									13	250						
																											8	150							

See footnotes at end of table.

TABLE III. Group A inspection for device type 03.

Symbol	MIL-STD-883 method	Cases E,F,X	Terminal conditions 1/																Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	I _{N_S}	A ₁	B ₁	D ₁	A ₂	B ₂	D ₂	V _{SS}	D ₃	B ₃	A ₃	D ₄	B ₄	A ₄	O _D		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																		Min	Max	Min	Max	Min		Max
V _{IC} (pos) ↓		1	1 mA															GND	I _{N_S}		1.5					V _{dc}	
		2		1 mA															A ₁								
		3			1 mA														B ₁								
		4				1 mA													A ₂								
		5					1 mA												B ₂								
		6						1 mA					1 mA						B ₃								
		7										1 mA							A ₃								
		8												1 mA					B ₄								
		9													1 mA				A ₄								
		10														1 mA		↓	O _D								
V _{IC} (neg) ↓		11	-1 mA						GND										I _{N_S}		-6.0						
		12		-1 mA															A ₁								
		13			-1 mA														B ₁								
		14				-1 mA													A ₂								
		15					-1 mA												B ₂								
		16										-1 mA							B ₃								
		17											-1 mA						A ₃								
		18												-1 mA					B ₄								
		19													-1 mA				A ₄								
		20														-1 mA			O _D								
I _{SS} 2/ ↓	3005 ↓	21	18.0 V	18.0 V	18.0 V		18.0 V	18.0 V				18.0 V	18.0 V		18.0 V	18.0 V	GND	18.0 V	V _{SS}		-0.25		-2.5			μA	
		22	18.0 V	GND	GND		GND	GND				GND	GND		GND	GND		18.0 V	↓								
		23	GND	18.0 V	18.0 V		18.0 V	18.0 V				18.0 V	18.0 V		18.0 V	18.0 V	↓	↓	↓								
		24	GND	GND	GND		GND	GND				GND	GND		GND	GND	↓	↓	↓								

See footnotes at end of table.

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TABLE III. Group A inspection for device type 03 - Continued.

Symbol	MIL-STD-883 method	Cases E, F, X	Terminal conditions 1/																Measured terminal	Test limits						Units		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C				
		Symbol	I _{NS}	A ₁	B ₁	D ₁	A ₂	B ₂	D ₂	V _{SS}	D ₃	B ₃	A ₃	D ₄	B ₄	A ₄	O _D	V _{DD}		Min		Max		Min			Max	
		Test No.																		Min	Max	Min	Max	Min	Max			
V _{OH1}	3006	25	15.0 V	15.0 V	15.0 V		GND	GND		GND		GND	GND		GND	GND	GND	15.0 V	D ₁	14.95		14.95		14.95		V _{dc}		
		26		GND	GND		15.0 V	15.0 V				GND	GND		GND	GND			D ₂									
		27		GND	GND		GND	GND				15.0 V	15.0 V		GND	GND			D ₃									
		28		GND	GND		GND	GND				GND	GND		15.0 V	15.0 V			D ₄									
		29	GND	15.0 V	15.0 V		GND	GND				GND	GND		GND	GND			D ₁									
		30		GND	GND		15.0 V	15.0 V				GND	GND		GND	GND			D ₂									
		31					GND	GND				15.0 V	15.0 V		GND	GND			D ₃									
		32										GND	GND		15.0 V	15.0 V			D ₄									
V _{OL1}	3007	33	15.0 V											GND	GND	15.0 V		D ₁		0.05		0.05		0.05				
		34																D ₂										
		35																D ₃										
		36																D ₄										
		37	GND															D ₁										
		38																D ₂										
		39																D ₃										
		40																D ₄										
V _{IH1}		41	1.5 V	3.5 V	1.5 V												GND	5.0 V	D ₁	4.5		4.5		4.5				
		42		GND	GND		3.5 V	1.5 V											D ₂									
		43		GND	GND		GND	GND				1.5 V	3.5 V						D ₃									
		44		GND	GND		GND	GND				GND	GND		1.5 V	3.5 V			D ₄									
		45	5.0 V	1.5 V	3.5 V		GND	GND				GND	GND		GND	GND			D ₁									
		46		GND	GND		1.5 V	3.5 V				GND	GND		GND	GND			D ₂									
		47		GND	GND		GND	GND				3.5 V	1.5 V		GND	GND			D ₃									
		48		GND	GND		GND	GND				GND	GND		3.5 V	1.5 V			D ₄									
V _{IH2} V _{IH2} V _{IH2}		49	3.0 V	7.0 V	3.0 V		GND	GND				GND	GND		GND	GND	10.0 V	D ₁	9.0		9.0		9.0					
		50	3.0 V	GND	GND		7.0 V	3.0 V				GND	GND		GND	GND	10.0 V	D ₂	9.0		9.0		9.0					
		51	3.0 V	GND	GND		GND	GND				3.0 V	7.0 V		GND	GND	10.0 V	D ₃	9.0		9.0		9.0					

See footnotes at end of table.

TABLE III. Group A inspection for device type 03 - Continued.

Symbol	MIL-STD-883 method	Cases E,F,X	Terminal conditions 1/																Measured terminal	Test limits						Units
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C		
		Symbol	I _{NS}	A ₁	B ₁	D ₁	A ₂	B ₂	D ₂	V _{SS}	D ₃	B ₃	A ₃	D ₄	B ₄	A ₄	O _D	V _{DD}		Min	Max	Min	Max	Min	Max	
		Test No.																								
V _{IH2} ↓		52	3.0 V	GND	GND		GND	GND		GND		GND	GND		3.0 V	7.0 V	GND	10.0 V	D ₄	9.0		9.0		9.0		V _{dc}
		53	10.0 V	3.0 V	7.0 V		GND	GND				GND	GND		GND	GND			D ₁							
		54	↓	GND	GND		1.5 V	7.0 V				GND	GND		GND	GND			D ₂							
		55	↓	GND	GND		GND	GND				7.0 V	3.0 V		GND	GND			D ₃							
		56	↓	GND	GND		GND	GND				GND	GND		7.0 V	3.0 V			D ₄	↓		↓		↓		
V _{IH3} ↓		57	4.0 V	11.0 V	4.0 V		GND	GND				GND	GND		GND	GND		15.0 V	D ₁	13.5		13.5		13.5		
		58	↓	GND	GND		11.0 V	4.0 V				GND	GND		GND	GND			D ₂							
		59	↓	GND	GND		GND	GND				4.0 V	11.0 V		GND	GND			D ₃							
		60	↓	GND	GND		GND	GND				GND	GND		4.0 V	11.0 V			D ₄							
		61	15.0 V	4.0 V	11.0 V		GND	GND				GND	GND		GND	GND			D ₁							
		62	↓	GND	GND		4.0 V	11.0 V				GND	GND		GND	GND			D ₂							
		63	↓	GND	GND		GND	GND				11.0 V	4.0 V		GND	GND			D ₃							
		64	↓	GND	GND		GND	GND				GND	GND		11.0 V	4.0 V			D ₄	↓		↓		↓		
V _{IL1} ↓		65	1.5 V	1.5 V	1.5 V		GND	GND				GND	GND		GND	GND	5.0 V	5.0 V	D ₁		0.5		0.5		0.5	
		66	↓	GND	GND		1.5 V	1.5 V				GND	GND		GND	GND			D ₂							
		67	↓	GND	GND		GND	GND				1.5 V	1.5 V		GND	GND			D ₃							
		68	↓	GND	GND		GND	GND				GND	GND		1.5 V	1.5 V			D ₄							
		69	5.0 V	1.5 V	1.5 V		GND	GND				GND	GND		GND	GND			D ₁							
		70	↓	GND	GND		1.5 V	1.5 V				GND	GND		GND	GND			D ₂							
		71	↓	GND	GND		GND	GND				1.5 V	1.5 V		GND	GND			D ₃							
		72	↓	GND	GND		GND	GND				GND	GND		1.5 V	1.5 V			D ₄	↓		↓		↓		
V _{IL2} ↓		73	3.0 V	3.0 V	3.0 V		GND	GND				GND	GND		GND	GND	10.0 V	10.0 V	D ₁		1.0		1.0		1.0	
		74	↓	GND	GND		3.0 V	3.0 V				GND	GND		GND	GND			D ₂							
		75	↓	GND	GND		GND	GND				3.0 V	3.0 V		GND	GND			D ₃							
		76	↓	GND	GND		GND	GND				GND	GND		3.0 V	3.0 V			D ₄							
		77	10.0 V	3.0 V	3.0 V		GND	GND				GND	GND		GND	GND			D ₁							
		78	↓	GND	GND		3.0 V	3.0 V				GND	GND		GND	GND			D ₂							
		79	↓	GND	GND		GND	GND				3.0 V	3.0 V		GND	GND			D ₃							
		80	↓	GND	GND		GND	GND				GND	GND		3.0 V	3.0 V			D ₄	↓		↓		↓		

See footnotes at end of table.

TABLE III. Group A inspection for device type 03 - Continued.

Symbol	MIL-STD-883 method	Cases E,F,X	Terminal conditions 1/																Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	I _{NS}	A ₁	B ₁	D ₁	A ₂	B ₂	D ₂	V _{SS}	D ₃	B ₃	A ₃	D ₄	B ₄	A ₄	O _D		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																								
V _{IL3} ↓			81	4.0 V	4.0 V	4.0 V		GND	GND		GND		GND	GND		GND	GND	15.0 V	15.0 V	D ₁		1.5		1.5		1.5	V _{dc}
			82	↓	GND	GND		4.0 V	4.0 V				GND	GND		GND	GND	↓	↓	D ₂		↓		↓		↓	
			83	↓	GND	GND		GND	GND				4.0 V	4.0 V		GND	GND	↓	↓	D ₃		↓		↓		↓	
			84	↓	GND	GND		GND	GND				GND	GND		4.0 V	4.0 V	↓	↓	D ₄		↓		↓		↓	
			85	15.0 V	4.0 V	4.0 V		GND	GND				GND	GND		GND	GND	↓	↓	D ₁		↓		↓		↓	
			86	↓	GND	GND		4.0 V	4.0 V				GND	GND		GND	GND	↓	↓	D ₂		↓		↓		↓	
			87	↓	GND	GND		GND	GND				4.0 V	4.0 V		GND	GND	↓	↓	D ₃		↓		↓		↓	
			88	↓	GND	GND		GND	GND				GND	GND		4.0 V	4.0 V	↓	↓	D ₄		↓		↓		↓	
I _{IH1} 3/	3010	89	18.0 V	18.0 V	18.0 V		18.0 V	18.0 V				18.0 V	18.0 V		18.0 V	18.0 V	18.0 V	18.0 V	All inputs	10					nA		
I _{IH2} 3/	↓	90	18.0 V	GND	GND		GND	GND				GND	GND		GND	GND	GND		I _{NS}	1.0		45					
		91	GND	18.0 V	GND		GND					↓	↓		↓	↓	↓		A ₁	↓		↓		↓			
		92	↓	GND	18.0 V		GND												B ₁	↓		↓		↓			
		93	↓		GND		18.0 V												A ₂	↓		↓		↓			
		94	↓				GND	18.0 V					↓	↓		↓	↓		B ₂	↓		↓		↓			
		95	↓					GND	18.0 V					↓	↓		↓	↓	B ₃	↓		↓		↓			
		96	↓											↓	↓		↓	↓	A ₃	↓		↓		↓			
		97	↓											GND	18.0 V		↓	↓	B ₄	↓		↓		↓			
		98	↓												GND	18.0 V		↓	↓	A ₄	↓		↓		↓		
		99	↓												GND	GND	18.0 V		↓	O _D	↓		↓		↓		
I _{IL1} 3/	3009	100		↓	↓		↓	↓				↓	↓		GND	GND	GND		All inputs	-10							
I _{IL2} 3/	↓	101	↓	18.0 V	18.0 V		18.0 V	18.0 V				18.0 V	18.0 V		18.0 V	18.0 V			I _{NS}	-1.0		-45					
		102	18.0 V	GND	18.0 V		18.0 V												A ₁	↓		↓		↓			
		103	↓	18.0 V	GND		18.0 V												B ₁	↓		↓		↓			
		104	↓		18.0 V		GND												A ₂	↓		↓		↓			
		105	↓				18.0 V	GND											B ₂	↓		↓		↓			
		106	↓				18.0 V	18.0 V						↓	↓				B ₃	↓		↓		↓			
		107	↓				18.0 V	18.0 V						↓	↓				A ₃	↓		↓		↓			

See footnotes at end of table.

TABLE III. Group A inspection for device type 03 - Continued.

Symbol	MIL-STD-883 method	Cases E, F, X	Terminal conditions 1/																Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	I _{NS}	A ₁	B ₁	D ₁	A ₂	B ₂	D ₂	V _{SS}	D ₃	B ₃	A ₃	D ₄	B ₄	A ₄	O _D		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																								
I _{IL2} 3/	3009	108	18.0 V	18.0 V	18.0 V		18.0 V	18.0 V		GND		18.0 V	18.0 V		GND	18.0 V	GND	18.0 V	B ₄		-1.0		-45			nA	
I _{IL2} 3/	3009	109	18.0 V	18.0 V	18.0 V		18.0 V	18.0 V				18.0 V	18.0 V		18.0 V	GND		18.0 V	A ₄		-1.0		-45			nA	
I _{IL2} 3/	3009	110	18.0 V	18.0 V	18.0 V		18.0 V	18.0 V				18.0 V	18.0 V		18.0 V	18.0 V		18.0 V	O _D		-1.0		-45			nA	
I _{OL1} ↓		111	GND	GND	GND	0.4 V	GND	GND				GND	GND		GND	GND		5.0 V	D ₁	0.51		0.36		0.64		mA	
		112	↓	↓	↓				0.4 V			↓	↓		↓	↓			D ₂	↓		↓		↓			
		113									0.4 V								D ₃								
		114	↓											0.4 V					D ₄								
		115	5.0 V			0.4 V													D ₁								
		116	↑						0.4 V										D ₂								
		117		↓	↓		↓	↓			0.4 V								D ₃								
		118		↓	↓		↓	↓				↓	↓	0.4 V	↓	↓			D ₄	↓		↓		↓			
I _{OH1} ↓		119	↓	5.0 V	5.0 V	4.6 V	5.0 V	5.0 V				5.0 V	5.0 V		5.0 V	5.0 V			D ₁	-0.51		-0.36		-0.64			
		120							4.6 V										D ₂								
		121									4.6 V								D ₃								
		122	↓											4.6 V					D ₄								
		123	GND			4.6 V													D ₁								
		124							4.6 V										D ₂								
		125									4.6 V								D ₃								
		126		↓	↓		↓	↓				↓	↓	4.6 V	↓	↓			D ₄	↓		↓		↓			
I _{OL2} ↓		127	↓	GND	GND	1.5 V	GND	GND				GND	GND		GND	GND		15.0 V	D ₁	3.4		2.4		4.2			
		128							1.5 V										D ₂								
		129									1.5 V								D ₃								
		130												1.5 V					D ₄								
		131	15.0 V			1.5 V													D ₁								
		132							1.5 V										D ₂								
		133	↓								1.5 V								D ₃								
		134	↓	↓	↓		↓	↓				↓	↓	1.5 V	↓	↓			D ₄	↓		↓		↓			

See footnotes at end of table.

TABLE III. Group A inspection for device type 03 - Continued.

Symbol	MIL-STD-883 method	Cases E, F, X	Terminal conditions 1/																Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		Subgroup 1 T _A = 25°C		Subgroup 2 T _A = 125°C		Subgroup 3 T _A = -55°C			
			Symbol	I _{NS}	A ₁	B ₁	D ₁	A ₂	B ₂	D ₂	V _{SS}	D ₃	B ₃	A ₃	D ₄	B ₄	A ₄	O _D		V _{DD}	D ₁	D ₂	D ₃	D ₄	Min		Max
Test No.																											
I _{OH2} ↓		135	15.0 V	15.0 V	15.0 V	13.5 V	15.0 V	15.0 V		GND			15.0 V	15.0 V		15.0 V	15.0 V	GND	15.0 V	D ₁	-3.4		-2.4		-4.2		mA
		136	↓	↓	↓		↓	↓	13.5 V				↓	↓		↓	↓		↓	D ₂	↓		↓		↓		↓
		137									13.5 V									D ₃							
		138	↓												13.5 V					D ₄							
		139	GND			13.5 V														D ₁							
		140	↓	↓	↓		↓	↓	13.5 V											D ₂							
		141	↓	↓	↓		↓	↓			13.5 V		↓	↓		↓	↓	↓		D ₃	↓		↓		↓		↓
		142	↓	↓	↓		↓	↓				↓	↓	13.5 V	↓	↓	↓	↓		D ₄	↓		↓		↓		↓
I _{OC11}		143	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V			18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	18.0 V	All outputs		100					nA	
I _{OC12} ↓		144				18.0 V													D ₁		25		90				
		145							18.0 V										D ₂		↓		↓				
		146									18.0 V								D ₃								
		147												18.0 V					D ₄		↓		↓				
I _{OC21}		148				GND			GND		GND			GND					All outputs		-100		↓				
I _{OC22} ↓		149				GND													D ₁		-25		-90				
		150							GND										D ₂		↓		↓				
		151									GND								D ₃								
		152	↓	↓	↓		↓	↓		↓			↓	↓	GND	↓	↓	↓		D ₄		↓		↓		↓	
																				Subgroup 4 T _A = 25°C							
																					Min	Max					
C _{IS} ↓	3012 ↓	153	4/						GND									GND	I _{NS}		7.5					pF	
		154		4/						↓								↓	A ₁		↓						
		155			4/														B ₁								
		156					4/												A ₂								
		157							4/										B ₂								
		158									↓		4/					↓	B ₃		↓				↓		

See footnotes at end of table.

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TABLE III. Group A inspection for device type 03 - Continued.

Symbol	MIL-STD-883 method	Cases E, F, X	Terminal conditions 1/																Measured terminal	Test limits						Units						
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		Subgroup 4 T _A = 25°C												
			Symbol	IN _S	A ₁	B ₁	D ₁	A ₂	B ₂	D ₂	V _{SS}	D ₃	B ₃	A ₃	D ₄	B ₄	A ₄	O _D		V _{DD}	Min	Max	Min	Max	Min		Max					
			Test No.																													
C _{IS} ↓	3012 ↓	159 160 161 162												GND ↓			4/ ↓			4/ ↓					A ₃ B ₄ A ₄ O _D		7.5 ↓					pF ↓
																		Subgroup 9 T _A = 25°C		Subgroup 10 T _A = 125°C		Subgroup 11 T _A = -55°C										
																		Min		Max		Min		Max		Min		Max				
t _{PHL1} and t _{PLH1} ↓	3003 Fig. 16 ↓	163 164 165 166 167 168 169 170	GND 5.0 V GND 5.0 V GND 5.0 V GND 5.0 V	IN 5.0 V GND ↓ ↓ ↓ ↓	5.0 V IN GND ↓ ↓ ↓ ↓	OUT OUT OUT OUT OUT OUT OUT OUT	GND GND IN 5.0 V GND ↓ ↓ ↓	GND GND 5.0 V IN GND ↓ ↓ ↓		GND ↓ OUT OUT ↓ OUT OUT ↓	GND ↓ IN GND ↓ ↓ ↓		GND ↓ OUT OUT ↓ OUT OUT ↓	GND ↓ IN GND ↓ ↓ ↓	GND ↓ OUT OUT ↓ OUT OUT ↓	5.0 V ↓ ↓ ↓ ↓ ↓ ↓ ↓	A ₁ → D ₁ B ₁ → D ₁ A ₂ → D ₂ B ₂ → D ₂ A ₃ → D ₃ B ₃ → D ₃ A ₄ → D ₄ B ₄ → D ₄	15 ↓ ↓ ↓ ↓ ↓ ↓ ↓	300 ↓ ↓ ↓ ↓ ↓ ↓ ↓	21 ↓ ↓ ↓ ↓ ↓ ↓ ↓	420 ↓ ↓ ↓ ↓ ↓ ↓ ↓	15 ↓ ↓ ↓ ↓ ↓ ↓ ↓	300 ↓ ↓ ↓ ↓ ↓ ↓ ↓	ns								
t _{PHL2} and t _{PLH2} ↓	3003 Fig. 17 ↓	171 172 173 174 175 176 177 178	IN ↓ ↓ ↓ ↓ ↓ ↓ ↓	5.0 V GND ↓ ↓ ↓ ↓ ↓	5.0 V OUT ↓ ↓ ↓ ↓ ↓	OUT OUT OUT OUT OUT OUT OUT OUT	GND ↓ ↓ ↓ ↓ ↓ ↓ ↓	GND ↓ ↓ ↓ ↓ ↓ ↓ ↓			GND ↓ ↓ ↓ ↓ ↓ ↓ ↓	GND ↓ ↓ ↓ ↓ ↓ ↓ ↓		GND ↓ ↓ ↓ ↓ ↓ ↓ ↓	GND ↓ ↓ ↓ ↓ ↓ ↓ ↓		IN _S → D ₁ IN _S → D ₁ IN _S → D ₂ IN _S → D ₂ IN _S → D ₃ IN _S → D ₃ IN _S → D ₄ IN _S → D ₄	18 ↓ ↓ ↓ ↓ ↓ ↓ ↓	350 ↓ ↓ ↓ ↓ ↓ ↓ ↓	25 ↓ ↓ ↓ ↓ ↓ ↓ ↓	490 ↓ ↓ ↓ ↓ ↓ ↓ ↓	18 ↓ ↓ ↓ ↓ ↓ ↓ ↓	350 ↓ ↓ ↓ ↓ ↓ ↓ ↓									
t _{PZH} ↓	Fig. 18 ↓	179 180 181 182	GND ↓ ↓ ↓	5.0 V ↓ ↓ ↓	5.0 V ↓ ↓ ↓	OUT OUT OUT OUT	5.0 V ↓ ↓ ↓	5.0 V ↓ ↓ ↓			5.0 V ↓ ↓ ↓	5.0 V ↓ ↓ ↓		5.0 V ↓ ↓ ↓	IN ↓ ↓ ↓		O _D → D ₁ O _D → D ₂ O _D → D ₃ O _D → D ₄	9 ↓ ↓ ↓	180 ↓ ↓ ↓	13 ↓ ↓ ↓	250 ↓ ↓ ↓	9 ↓ ↓ ↓	180 ↓ ↓ ↓									

TABLE III. Group A inspection for device type 03 - Continued.

Symbol	MIL-STD-883 method	Cases E,F,X	Terminal conditions 1/																Measured terminal	Test limits						Units
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		Subgroup 9 T _A = 25°C		Subgroup 10 T _A = 125°C		Subgroup 11 T _A = -55°C		
			Symbol	IN _S	A ₁	B ₁	D ₁	A ₂	B ₂	D ₂	V _{SS}	D ₃	B ₃	A ₃	D ₄	B ₄	A ₄	O _D		V _{DD}	Min	Max	Min	Max	Min	
Test No.																										
t _{PHZ} ↓	Fig. 18	183	GND	5.0 V	5.0 V	OUT	5.0 V	5.0 V		GND		5.0 V	5.0 V		5.0 V	5.0 V	IN	5.0 V	O _D → D ₁	9	180	13	250	9	180	ns
		184							OUT										O _D → D ₂							
		185									OUT								O _D → D ₃							
		186												OUT					O _D → D ₄							
t _{PZL} ↓		187		GND	GND	OUT	GND	GND				GND	GND		GND	GND			O _D → D ₁							
		188							OUT										O _D → D ₂							
		189									OUT								O _D → D ₃							
		190											OUT						O _D → D ₄							
t _{PLZ} ↓		191				OUT													O _D → D ₁							
		192							OUT										O _D → D ₂							
		193									OUT								O _D → D ₃							
		194												OUT					O _D → D ₄							
t _{THL} and t _{TLH} ↓	3004	195		IN	5.0 V	OUT											GND		D ₁	10	200	14	280	10	200	
		196		5.0 V	IN	OUT													D ₁							
		197			IN		IN	5.0 V	OUT										D ₂							
		198					5.0 V	IN	OUT										D ₂							
		199					GND	GND			OUT			5.0 V	IN				D ₃							
		200										OUT		IN	5.0 V				D ₃							
		201												GND	GND	OUT	5.0 V	IN	D ₄							
		202												GND	GND	OUT	IN	5.0 V	D ₄							
																		Subgroup 12 T _A = 25°C								
																		Min	Max							
t _{PHL1} and t _{PLH1} ↓	3003 Fig. 16	203	GND	IN	10.0 V	OUT	GND	GND		GND		GND	GND		GND	GND	GND	10.0 V	A ₁ → D ₁	7	140					ns
		204		10.0 V	IN	OUT	GND	GND											B ₁ → D ₁							
		205		GND	GND		IN	10.0 V	OUT										A ₂ → D ₂							
		206		GND	GND		10.0 V	IN	OUT										B ₂ → D ₂							

See footnotes at end of table.

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TABLE III. Group A inspection for device type 03 - Continued.

Symbol	MIL-STD-883 method	Cases E,F,X	Terminal conditions 1/																Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		Subgroup 12 T _A = 25°C							
			Symbol	IN _S	A ₁	B ₁	D ₁	A ₂	B ₂	D ₂	V _{SS}	D ₃	B ₃	A ₃	D ₄	B ₄	A ₄	O _D		V _{DD}			Min	Max	Min		Max
			Test No.																			Min	Max	Min	Max		
t _{PHL1} and t _{PLH1} ↓	3003 Fig. 16 ↓	207	GND	GND	GND		GND	GND		GND	OUT	10.0 V	IN		GND	GND	GND	10.0 V	A ₃ → D ₃	7	140					ns	
		208	↓	↓	↓		↓	↓			OUT	IN	10.0 V		GND	GND			B ₃ → D ₃								
		209	↓	↓	↓							GND	GND	OUT	10.0 V	IN			A ₄ → D ₄								
		210	↓	↓	↓									OUT	IN	10.0 V			B ₄ → D ₄								
t _{PHL2} and t _{PLH2} ↓	3003 Fig. 17 ↓	211	IN	10.0 V	↓	OUT									GND	GND			IN _S → D ₁	8	170						
		212	↓	GND	10.0 V	OUT													IN _S → D ₁								
		213			GND		10.0 V		OUT										IN _S → D ₂								
		214					10.0 V	↓	OUT										IN _S → D ₂								
		215					GND	10.0 V											IN _S → D ₃								
		216						GND			OUT		10.0 V						IN _S → D ₃								
		217									OUT			GND	OUT	10.0 V			IN _S → D ₄								
		218	↓	↓	↓		↓	↓				GND	GND	OUT	10.0 V	GND			IN _S → D ₄								
t _{PZH} ↓	Fig. 18	219	GND	10.0 V	10.0 V	OUT	10.0 V	10.0 V				10.0 V	10.0 V			10.0 V	IN		D _D → D ₁	5	100						
		220	↓	↓	↓				OUT										D _D → D ₂								
		221									OUT								D _D → D ₃								
		222												OUT					D _D → D ₄								
t _{PHZ} ↓		223				OUT													D _D → D ₁								
		224																	D _D → D ₂								
		225										OUT							D _D → D ₃								
		226		↓	↓		↓	↓					OUT		↓	↓			D _D → D ₄								
t _{PZL} ↓		227		GND	GND	OUT	GND	GND				GND	GND		GND	GND			D _D → D ₁								
		228								OUT									D _D → D ₂								
		229									OUT								D _D → D ₃								
		230												OUT					D _D → D ₄								
		231				OUT													D _D → D ₁								
		232								OUT									D _D → D ₂								
		233																	D _D → D ₃								
		234												OUT					D _D → D ₄								

See footnotes at end of table.

TABLE III. Group A inspection for device type 03 - Continued.

Symbol	MIL-STD-883 method	Cases E, F, X	Terminal conditions 1/																Measured terminal	Test limits						Units	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		Subgroup 12 T _A = 25°C							
			Symbol	I _S	A ₁	B ₁	D ₁	A ₂	B ₂	D ₂	V _{SS}	D ₃	B ₃	A ₃	D ₄	B ₄	A ₄	O _D		V _{DD}	Min	Max	Min	Max	Min		Max
			Test No.																								
t _{THL} and t _{TLH}	3004	235	GND	IN	10.0 V	OUT	GND	GND		GND		GND	GND		GND	GND	GND	10.0 V	D ₁	5	100					ns	
		236		10.0 V	IN	OUT	GND	GND											D ₁								
		237		GND	GND		IN	10.0 V	OUT										D ₂								
		238					10.0 V	IN	OUT										D ₂								
		239					GND	GND		OUT			10.0 V	IN					D ₃								
		240								OUT			IN	10.0 V					D ₃								
		241											GND	GND	OUT	10.0 V	IN		D ₄								
		242											GND	GND	OUT	IN	10.0 V		D ₄								

1/ Pins not designated may be "high" level logic, "low" level logic or open. Exceptions are as follows: $V_{IC(POS)}$ tests, the V_{SS} terminal shall be open; $V_{IC(NEG)}$ tests, the V_{DD} terminal shall be open; I_{SS} tests, the output terminals shall be open.

2/ The I_{SS} measurements shall be performed in sequence.

3/ The device manufacturer may, at his option, measure I_{IL} and I_{IH} at 25°C for each individual input or measure all inputs together.

4/ C_C and C_{IS} - Connect capacitance bridge between measured input terminal and V_{SS} , frequency = 1 MHz, see 4.4.1.c.

5/ C_{OS} - Connect capacitance bridge between measured output terminal and V_{SS} , frequency = 1 MHz, see 4.4.1.c.

6/ C_{IOS} - Connect capacitance bridge between measured input and output terminals, frequency = 1 MHz, see 4.4.1.c.

7/ For V_{IH} : Measured terminal shall be connected to ground (GND) through a 3.1 Kohm resistor. All channels shall be connected to GND through a 3.1 Kohm resistor.

For V_{IL} : Measured terminals shall be connected to GND through a 470 Kohm resistor and all other channels shall be connected to GND through a 3.1 Kohm resistor. The current through the resistor shall not be greater than 1.05 μA .

4.4.3 Group C inspection. Group C inspection shall be in accordance with table III of method 5005 of MIL-STD-883 and as follows:

- a. End-point electrical parameters shall be as specified in table II herein. Delta limits shall apply only to subgroup 1 of group C inspection and shall consist of tests specified in table IV herein.
- b. Steady-state life test (method 1005 of MIL-STD-883) conditions:
 - (1) Test condition D and as specified in 4.5.2 herein and as shown on figure 5, or equivalent.
 - (2) $T_A = +125^\circ\text{C}$ minimum.
 - (3) Test duration, 1,000 hours, except as permitted by appendix B of MIL-M-38510 and method 1005 of MIL-STD-883.
- c. Subgroups 3 and 4 shall be added to the group C inspection requirements for class B devices, and shall consist of the tests, conditions, and limits as specified for subgroups 10 and 11 of group A.

4.4.4 Group D inspection. Group D inspection shall be in accordance with table IV of method 5005 of MIL-STD-883. End-point electrical parameters shall be as specified in table II herein.

4.4.5 Group E inspection. Group E inspection is required only for device types intended to be marked as radiation hardened (see 3.6.1). When group E testing is performed it shall be in accordance with table V of method 5005 of MIL-STD-883 and 4.5.5 herein.

4.5 Methods of inspection. Methods of inspection shall be specified as follows:

4.5.1 Voltage and current. Unless otherwise specified, all voltages given are referenced to the microcircuit V_{SS} terminal. Currents given are conventional current and positive when flowing into the referenced terminal.

4.5.2 Burn-in and life test cool down procedures. When the burn-in and life tests are completed and prior to removal of bias voltages, the devices under test (DUT) shall be cooled to a temperature of $25^\circ\text{C} \pm 3^\circ\text{C}$; then, electrical parameter end-point measurements shall be performed.

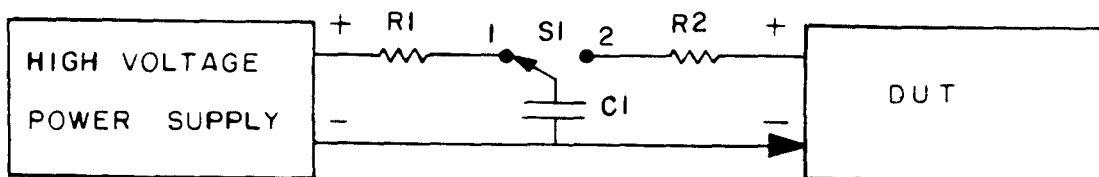
TABLE IV. Delta limits at 25°C .

Parameter <u>1/</u>	Device types		
I_{SS}	$\pm 10 \text{ nA}$	$\pm 10 \text{ nA}$	$\pm 10 \text{ nA}$
I_{OL1}	---	---	$\pm 15\%$
I_{OH1}	---	---	$\pm 15\%$
R_{ON1}	50 ohms	50 ohms	---
R_{ON2}	20 ohms	20 ohms	---
R_{ON3}	15 ohms	15 ohms	---

1/ Each of the above parameters shall be recorded before and after the required burn-in and life tests to determine deltas (Δ).

4.5.3 High voltage (V_{ZAP}) test or input protection circuits. All input terminals (up to a maximum of 4) of the DUT shall be subjected to a voltage pulse from a 100 pF source charged to 400 V. This destructive test shall be conducted as follows using the test circuit on figure 19.

- a. Measure I_{IL} and I_{IH} at the inputs selected, as stated above, at 25°C . The test limit for each input tested shall be $\pm 10 \text{ nA}$ at the specified V_{DD} . Measure I_{SS} on the DUT at 25°C . The test limit for this measurement shall be increased a maximum of 20 percent of the specified I_{SS} table III limit at the specified V_{DD} .



$V_{ZAP} = 400 \text{ V}$ charge on C1.

$1 \text{ M}\Omega \leq R1 \leq 50 \text{ M}\Omega$

$R2 = 1.5 \text{ k}\Omega$

$C1 = 100 \text{ pF}$

S1 = Hg-wetted "bounceless" relay

FIGURE 19. High Voltage (V_{ZAP}) test circuit.

- b. V_{ZAP} is applied to DUT in the following four modes (see table V) by changing C1 to V_{ZAP} with S1 in position 1 and then switching to position 2.

TABLE V. Modes for high voltage test.

Mode	+ Terminal	- Terminal
1	V_{DD}	Input
2	Input	V_{SS}
3	Input	Associated Output

- c. Within 24 hours repeat the I_{SS} , I_{IL} , and I_{IH} measurements on the same terminals as performed above. If a DUT exhibits leakage currents in excess of the specified limits after the V_{ZAP} test, it shall be classified as a failure.

4.5.4 Quiescent supply current (I_{SS} test). When performing quiescent supply current measurements (I_{SS}), the meter shall be placed so that all currents flow through the meter.

4.5.5 Radiation hardness assurance (RHA) testing. The RHA testing shall be performed in accordance with test procedures and sampling specified in table V of method 5005 of MIL-STD-883 and herein:

- Before irradiation, selected samples shall be assembled in qualified packages and pass the governing electrical parameters (group A subgroup 1 at 25°C) and also be subjected to the threshold-voltage test in table VIII in order to calculate the delta threshold (ΔV_T) after irradiation.
- The devices shall be subjected to a total radiation dose as specified in MIL-M-38510 for the radiation hardness assurance (RHA) level being tested, and meet the end point electrical parameters as defined in table VI at 25°C , after exposure. The start and completion of the end point electrical parameter measurements shall not exceed 2 hours following irradiation.
- Threshold-voltage test circuit conditions shall be as specified in table VIII and figure 20. In situ and remote testing, the tests shall be performed with the devices biased in accordance with table VII and bias may be interrupted for up to 1 minute to remove devices to the remote bias fixture.

- d. After irradiation, the devices shall pass the truth table test as specified in subgroup 7 in table III or if subgroup 7 is not required, then an equivalent truth table test shall be performed.

TABLE VI. Radiation hardening end-point electrical parameters at 25°C.

Parameter	All device types	V _{DD}
V _{TN}	0.3 V min	10 V
V _{TP}	2.8 V max	10 V
ΔV _T	1.4 V	10 V
I _{SS}	100 x max limit	18 V
t _{PLH}	1.35 x max limit	5 V
t _{PHL}	1.35 x max limit	5 V

TABLE VII. Bias during exposure to radiation.

Device type	Pin connections		
	V _{DD} = 10 V dc (through a 30- to 60-kΩ resistor)	V _{SS} = GND	V _{DD} = 10 V dc
01	2,3,4,5,6,7,8,9,10,11,13,14,15,16,17,18,19,20,21,22,23	12	24
02	2,3,4,5,6,7,8,9,10,11,13,14,15,16,19,20,21,22,23	12	24
03	1,2,3,5,6,10,11,13,14,15	8	16

Pins not designated are open or connected to 10 V dc through a 30- to 60-kilohm resistor.

4.6 Data reporting. When specified in the purchase order or contract, a copy of the following data, as applicable, shall be supplied.

- Attributes data for all screening tests (see 4.2) and variables data for all static burn-in, dynamic burn-in, and steady state life tests.
- A copy of each radiograph.
- The quality conformance inspection data (see 4.4).
- Parameter distribution data on parameters evaluated during burn-in (see 3.6).
- Final electrical parameters data (see 4.2c).

5. PACKAGING

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

6. NOTES

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

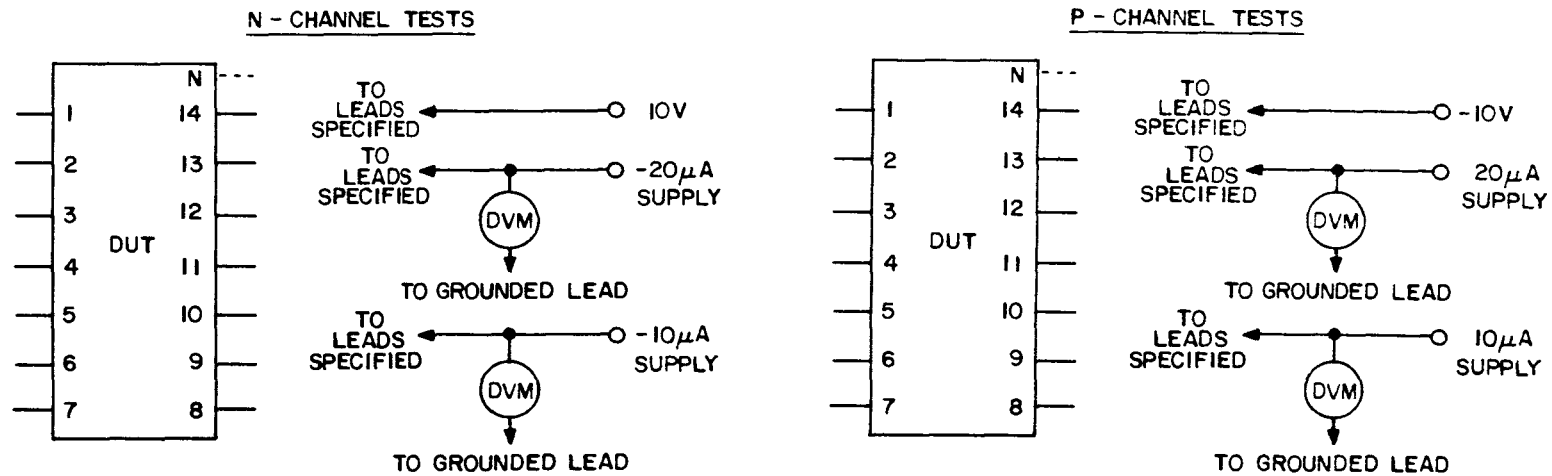


FIGURE 20. Threshold-voltage test circuit.

TABLE VIII. Threshold - voltage test circuit conditions.

Device type	GND	10V	V_{TN} measured at		GND	-10V	V_{TP} measured at	
			-20 μ A supply	-10 μ A supply			20 μ A supply	10 μ A supply
01	15	10,11,13,14,24		12	15	10,11,12,13,14		24
02	13	10,11,14,24		12	13	10,11,12,14		24
03	15	1,2,3,5,6,10,11,13,14,16		8	15	8		1,2,3,5,6,10,11,13,14,16

6.2 Ordering data. The acquisition document should specify the following:

- a. Complete part number (see 1.2).
- b. Requirements for delivery of one copy of the quality conformance inspection data pertinent to the device inspection lot to be supplied with each shipment by the device manufacturer, if applicable.
- c. Requirements for certificate of compliance, if applicable.
- d. Requirements for notification of change of product or process to the contracting activity in addition to notification to the qualifying activity, if applicable.
- e. Requirements for failure analysis (including required test condition of method 5003 of MIL-STD-883), corrective action and reporting of results, if applicable.
- f. Requirements for product assurance options.
- g. Requirements for special carriers, lead lengths, or lead forming, if applicable. These requirements shall not affect the part number. Unless otherwise specified, these requirements shall not apply to direct purchase by, or direct shipment to the Government.
- h. Requirements for "JAN" marking.
- i. Requirements for total dose radiation testing (see 3.6.1 and 4.5.5), if applicable.

6.3 Abbreviations, symbols, and definitions. The abbreviations, symbols, and definitions used herein are defined in MIL-M-38510, MIL-STD-1331, and as follows:

C _i	- - - - -	Input terminal-to-V _{SS} capacitance.
GND	- - - - -	Ground zero voltage potential.
I _{SS}	- - - - -	Quiescent supply current.
T _A	- - - - -	Free air temperature.
t _f	- - - - -	Fall time. Time duration during which the amplitude of the trailing edge of the input forcing condition or waveform is decreasing from 90 to 10 percent of the maximum amplitude.
t _r	- - - - -	Rise time. Time duration during which the amplitude of the leading edge of the input forcing condition or waveform is increasing from 10 to 90 percent of the maximum amplitude.
V _{DD}	- - - - -	Positive supply voltage.
V _{IC}	- - - - -	Input clamp voltage.
V _{SS}	- - - - -	Negative supply voltage.
V _{ZAP}	- - - - -	Input test voltage.

6.4 Logistic support. Lead materials and finishes (see 3.3) are interchangeable. Unless otherwise specified, microcircuits acquired for Government logistic support will be acquired to device class S for National Aeronautics and Space Administration or class B for Department of Defense (see 1.2.2), lead finish C (see 3.3). Longer length leads and lead forming shall not affect the part number.

6.5 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 shall 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-M-38510.

<u>Military device type</u>	<u>Generic-industry type</u>
01	4067B
02	4097B
03	40257B

6.6 Handling. MOS devices must be handled with certain precautions to avoid damage due to accumulation of static charge. Input protective devices have been designed in the chip to minimize the effect of this static build up. However, the following handling practices are recommended:

- a. Devices should be handled on benches with conductive and grounded surface.
- b. Ground test equipment and tools.
- c. Do not handle devices by the leads.
- d. Store devices in conductive foam or carriers.
- e. Avoid use of plastic, rubber, or silk in MOS areas.
- f. Maintain relative humidity above 50 percent, if practical.

6.7 Changes from previous issue. Asterisks are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the changes.

Custodians:

Army - ER
Navy - EC
Air Force - 17
NASA - NA

Preparing activity:

NASA - NA

(Project 5962-0639-9)

Review activities:

Army - MI
Air Force - 11, 19, 85, 99
DLA - ES

User activities:

Army - AR, SM
Navy - AS, CG, MC, OS, SH

Agent:

DLA - ES