MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL,

TTL ARITHMETIC LOGIC UNITS/FUNCTION GENERATORS

MONOLITHIC SILICON

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, TTL arithmetic logic units/function generators. Three product assurance classes and a choice of case outline/lead material and finish 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:

Device type	Circuit
01	Arithmetic logic unit/function generator
02	Lookahead carry generator

1.2.2 Device class. 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:

Outline letter	MIL-M-38510, appendix C, case outline
E	D-2 (16-lead, 1/4" x 7/8", dual-in-line pack)
F	F-5 (16-lead, 1/4" x 3/8", flat pack)
J	D-3 (24-lead, 1/2" x 1-1/4", dual-in-line pack)
K	F-6 (24-lead, 3/8" x 5/8", flat pack)
L	F-7 (24-lead, 3/8" x 1/2", flat pack)
Z	F-8 (24-lead, 1/4" x 3/8", flat pack)

1.3 Absolute maximum ratings.

Supply voltage range	-0.5 Vdc to 7.0 Vdc
Input voltage range	-1.5 Vdc at -12 mA to 5.5 Vdc
Storage temperature range	-65°C to 150°C
Maximum power dissipation, P_D 1/	795 mWdc
Lead temperature (soldering 10 seconds)	300°C
Thermal resistance, junction to case	θ_{JC} = {0.04°C/mW for flat pack; 0.02°C/mW for dual-in-line pack}
Junction temperature	T_J = 175°C

1/ Shall withstand the added P_D due to short circuit test (e.g., I_{OS}).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Rome Air Development Center, RADC (RBRD), Griffiss AFB, NY 13441, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

1.4 Recommended operating conditions.

Supply voltage	4.5 Vdc minimum to 5.5 Vdc maximum
Minimum high-level input voltage	2.0 Vdc
Maximum low-level input voltage	0.8 Vdc
Normalized fanout (each output)	
Logical low level	10 maximum
Logical high level	20 maximum 1/
Ambient operating temperature range	-55°C to 125°C

2. APPLICABLE DOCUMENT.

2.1 Issues of documents. The following document, of the issue in effect on date of invitation for bids or request for proposal, forms a part of this specification to the extent specified herein.

SPECIFICATION

MILITARY

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

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

3. REQUIREMENTS.

3.1 Detail specifications. The individual item requirements shall be in accordance with MIL-M-38510, and as specified herein. In the event of conflict between MIL-M-38510 and this detail specification, this detail specification shall govern.

3.2 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-M-38510, and herein.

3.2.1 Terminal connections and logic diagrams. The terminal connections and logic diagrams shall be as specified on figures 1 and 2.

3.2.2 Truth tables and logic equations. The truth tables and logic equations shall be as specified on figure 3.

3.2.3 Schematic circuits. Schematic circuits shall be submitted to the preparing activity prior to inclusion of a manufacturers device in this specification and shall be submitted to the qualifying activity as a prerequisite for qualification. All manufacturers schematics shall be maintained and available upon request.

3.2.4 Case outlines. The case outlines 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 (See 6.5).

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

3.5 Rebonding. Rebonding shall be in accordance with MIL-M-38510.

1/ A fanout of 20 normalized loads is provided to facilitate connection of unused inputs to used inputs.

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions 1/	Device type	Limits		
				Min	Max	Units
High-level output voltage	V_{OH}	V_{CC} = 4.5 V; V_{IL} = 0.8 V; V_{IN} = 2.0 V; I_{OH} = -800 µA	01, 02	2.4		Volts
Low-level output voltage	V_{OL}	V_{CC} = 4.5 V; V_{IL} = 0.8 V; V_{IH} = 2.0 V; I_{OL} = 16 mA	01, 02		0.4	Volts
Input diode clamp	V_{IC}	V_{CC} = 5.5 V; I_{IN} = -12 mA T_A = 25°C	01, 02		-1.5	Volts
Low-level input current at M input	I_{IL1}	V_{CC} = 5.5 V; V_{IN} = 0.4 V 2/	01	-0.7	-1.6	mA
Low-level input current at $\overline{B}$ input	I_{IL2}	V_{CC} = 5.5 V; V_{IN} = 0.4 V 2/	01	-2.1	-4.8	mA
Low-level input current at S_0 or S_3 input	I_{IL3}	V_{CC} = 5.5 V; V_{IN} = 0.4 2/	01	-2.8	-6.4	mA
Low-level input current at S_1 or S_2	I_{IL4}	V_{CC} = 5.5 V; V_{IN} = 0.4 V; $\overline{A}_0$, $\overline{A}_1$, $\overline{A}_2$, $\overline{A}_3$ = 5.5 V 3/	01	-2.8	-6.4	mA
Low-level input current at C_n input	I_{IL5}	V_{CC} = 5.5 V; V_{IN} = 0.4 V 3/	01	-3.5	-8.0	mA
Low-level input current at $\overline{A}$ input	I_{IL6}	V_{CC} = 5.5 V; V_{IN} = 0.4 V 2/	01	-1.4	-3.2	mA
Low-level input current at $\overline{G}_1$ input	I_{IL7}	V_{CC} = 5.5 V; V_{IN} = 0.4 V, C_n = GND 2/	02	-5.6	-16.0	mA
Low-level input current at $\overline{P}_1$ input	I_{IL8}	V_{CC} = 5.5 V; V_{IN} = 0.4 V 2/	02	-2.8	-8.0	mA
Low-level input current at $\overline{G}_0$ input	I_{IL9}	V_{CC} = 5.5 V; V_{IN} = 0.4 V, C_n = GND 2/	02	-4.9	-14.0	mA
Low-level input current at $\overline{P}_0$ input	I_{IL10}	V_{CC} = 5.5 V; V_{IN} = 0.4 V 2/	02	-2.8	-8.0	mA
Low-level input current at $\overline{G}_3$ input	I_{IL11}	V_{CC} = 5.5 V; V_{IN} = 0.4 V 2/	02	-2.8	-8.0	mA
Low-level input current at $\overline{P}_3$ input	I_{IL12}	V_{CC} = 5.5 V; V_{IN} = 0.4 V 2/	02	-1.4	-4.0	mA
Low-level input current at C_n input	I_{IL13}	V_{CC} = 5.5 V; V_{IN} = 0.4 V 2/	02	-0.7	-2.0	mA
Low-level input current at $\overline{G}_2$ input	I_{IL14}	V_{CC} = 5.5 V; V_{IN} = 0.4 V, C_n = GND 2/	02	-4.9	-14.0	mA
Low-level input current at $\overline{P}_2$ input	I_{IL15}	V_{CC} = 5.5 V; V_{IN} = 0.4 V 2/	02	-2.1	-6.0	mA
High-level input current at M input	I_{IH1}	V_{CC} = 5.5 V; V_{IN} = 2.4 V 3/	01		40	µA
High-level input current at $\overline{A}$ or $\overline{B}$ input	I_{IH2}	V_{CC} = 5.5 V; V_{IN} = 2.4 V 3/	01		120	µA
High-level input current at S_0 or S_3 input	I_{IH3}	V_{CC} = 5.5 V; V_{IN} = 2.4 V 3/	01		160	µA
High-level input current at S_1 or S_2 input	I_{IH4}	V_{CC} = 5.5 V; V_{IN} = 2.4 V; $\overline{B}_0$, $\overline{B}_1$, $\overline{B}_2$, $\overline{B}_3$ = 5.5 V 3/	01		160	µA
High-level input current at C_n input	I_{IH5}	V_{CC} = 5.5 V; V_{IN} = 2.4 V 2/	01		200	µA
High-level input current at M input	I_{IH6}	V_{CC} = 5.5 V; V_{IN} = 5.5 V 3/	01		100	µA
High-level input current at $\overline{A}$ or $\overline{B}$ input	I_{IH7}	V_{CC} = 5.5 V; V_{IN} = 5.5 V 3/	01		300	µA
High-level input current at S_0 or S_3 input	I_{IH8}	V_{CC} = 5.5 V; V_{IN} = 5.5 V 3/	01		400	µA
High-level input current at S_1 or S_2 input	I_{IH9}	V_{CC} = 5.5 V; V_{IN} = 5.5 V; $\overline{B}_0$, $\overline{B}_1$, $\overline{B}_2$, $\overline{B}_3$ = 5.5 V 3/	01		400	µA

See footnotes at end of table I.

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions 1/	Device type	Limits		
				Min	Max	Units
High-level input current at C_n input	I_{IH10}	V_{CC} = 5.5 V; V_{IN} = 5.5 V 2/	01		500	µA
High-level input current at $\overline{G}$ input	I_{IH11}	V_{CC} = 5.5 V; V_{IN} = 2.4 V; C_n = 5.5 V 3/	02		400	µA
High-level input current at $\overline{P}_1$ input	I_{IH12}	V_{CC} = 5.5 V; V_{IN} = 2.4 V 3/	02		200	µA
High-level input current at $\overline{G}_0$ input	I_{IH13}	V_{CC} = 5.5 V; V_{IN} = 2.4 V; C_n = 5.5 V 3/	02		350	µA
High-level input current at $\overline{P}_0$ input	I_{IH14}	V_{CC} = 5.5 V; V_{IN} = 2.4 V 3/	02		200	µA
High-level input current at $\overline{G}_3$ input	I_{IH15}	V_{CC} = 5.5 V; V_{IN} = 2.4 V 3/	02		200	µA
High-level input current at $\overline{P}_3$ input	I_{IH16}	V_{CC} = 5.5 V; V_{IN} = 2.4 V 3/	02		100	µA
High-level input current at C_n input	I_{IH17}	V_{CC} = 5.5 V; V_{IN} = 2.4 V 3/	02		70	µA
High-level input current at $\overline{G}_2$ input	I_{IH18}	V_{CC} = 5.5 V; V_{IN} = 2.4 V; C_n = 5.5 V 3/	02		350	µA
High-level input current at $\overline{P}_2$ input	I_{IH19}	V_{CC} = 5.5 V; V_{IN} = 2.4 V 3/	02		150	µA
High-level input current at $\overline{G}_1$ input	I_{IH20}	V_{CC} = 5.5 V; V_{IN} = 5.5 V; C_n = 5.5 V 3/	02		800	µA
High-level input current at $\overline{P}_1$ input	I_{IH21}	V_{CC} = 5.5 V; V_{IN} = 5.5 V 3/	02		400	µA
High-level input current at $\overline{G}_0$ input	I_{IH22}	V_{CC} = 5.5 V; V_{IN} = 5.5 V; C_n = 5.5 V 3/	02		700	µA
High-level input current at $\overline{P}_o$ input	I_{IH23}	V_{CC} = 5.5 V; V_{IN} = 5.5 V 3/	02		400	µA
High-level input current at $\overline{G}_3$ input	I_{IH24}	V_{CC} = 5.5 V; V_{IN} = 5.5 V 3/	02		400	µA
High-level input current at $\overline{P}_3$ input	I_{IH25}	V_{CC} = 5.5 V; V_{IN} = 5.5 V 3/	02		200	µA
High-level input current at C_n input	I_{IH26}	V_{CC} = 5.5 V; V_{IN} = 5.5 V 3/	02		160	µA
High-level input current at $\overline{G}_2$ input	I_{IH27}	V_{CC} = 5.5 V; V_{IN} = 5.5 V; C_n = 5.5 V 3/	02		700	µA
High-level input current at $\overline{P}_2$ input	I_{IH28}	V_{CC} = 5.5 V; V_{IN} = 5.5 V 3/	02		300	µA
Short-circuit output current at $\overline{G}$ output	I_{OS1}	V_{CC} = 5.5 V; S_3, $\overline{A}_3$, $\overline{B}_3$ = 5.5 V 3/ 4/	01	-20	-55	mA
Short-circuit output current at C_{n+4} output	I_{OS2}	V_{CC} = 5.5 V 3/ 4/	01	-20	-55	mA
Short-circuit output current at $\overline{P}$, $\overline{F}_0$ thru $\overline{F}_3$ outputs	I_{OS3}	V_{CC} = 5.5 V 2/ 4/	01	-20	-55	mA
Short-circuit output current	I_{OS4}	V_{CC} = 5.5 V; V_{IL} = GND; V_{IN} = 5.5 V 4/	02	-40	-100	mA
Collector cutoff current at A = B output	I_{CEX}	V_{CC} = 4.5 V; $V_{(A=B)}$ = 5.5 V; all input = 2.0 V	01		250	µA
Low-level supply current	I_{CCL1}	V_{CC} = 5.5 V; V_{IL} = 0 V; V_{IH} = 5.5 V	01		127	mA
	I_{CCL2}	V_{CC} = 5.5 V; V_{IL} = 0 V; V_{IH} = 5.5 V	02		65	mA
High level supply current	I_{CCH1}	V_{CC} = 5.5 V; V_{IL} = 0 V; V_{IH} = 5.5 V	01		135	mA
	I_{CCH2}	V_{CC} = 5.5 V; V_{IL} = 0 V; V_{IH} = 5.5 V	02		55	mA

See footnotes at end of table I.

Test	Symbol	Conditions 1/	Device type	Limits		Unit
				Min	Max	
Propagation delay times, high-to-low level output: 5/						
$\overline{A}_i$ or $\overline{B}_i$ to any $\overline{F}$ sum mode	t_{PHL1}	V_{CC} = 5.0 V See figure 4 sum mode test table	01	7	46	ns
$\overline{A}_i$ or $\overline{B}_i$ to any $\overline{F}$ diff mode	t_{PHL2}	V_{CC} = 5.0 V See figure 4 diff mode test table	01	7	49	ns
$\overline{A}_i$ or $\overline{B}_i$ to $\overline{P}$ sum mode	t_{PHL3}	V_{CC} = 5.0 V See figure 4 sum mode test table	01	7	40	ns
$\overline{A}_i$ or $\overline{B}_i$ to $\overline{P}$ diff mode	t_{PHL4}	V_{CC} = 5.0 V See figure 4 diff mode test table	01	7	40	ns
$\overline{A}_i$ or $\overline{B}_i$ to $\overline{G}$ sum mode	t_{PHL5}	V_{CC} = 5.0 V See figure 4 sum mode test table	01	7	30	ns
$\overline{A}_i$ or $\overline{B}_i$ to $\overline{G}$ diff mode	t_{PHL6}	V_{CC} = 5.0 V See figure 4 diff mode test table	01	7	40	ns
C_n to any $\overline{F}$ sum mode	t_{PHL7}	V_{CC} = 5.0 V See figure 4 sum mode test table	01	7	25	ns
$\overline{A}_i$ or $\overline{B}_i$ to A = B diff mode	t_{PHL8}	V_{CC} = 5.0 V See figure 4 diff mode test table	01	7	76	ns
C_n to C_{n+4} sum mode	t_{PHL9}	V_{CC} = 5.0 V See figure 4 sum mode test table	01	7	30	ns
C_n to C_{n+4} diff mode	t_{PHL10}	V_{CC} = 5.0 V See figure 4 diff mode test table	01	7	30	ns
$\overline{A}_i$ or $\overline{B}_i$ to C_{n+4} sum mode	t_{PHL11}	V_{CC} = 5.0 V See figure 4 sum mode test table	01	7	41	ns
$\overline{A}_i$ or $\overline{B}_i$ to C_{n+4} diff mode	t_{PHL12}	V_{CC} = 5.0 V See figure 4 diff mode test table	01	7	50	ns
$\overline{A}_i$ or $\overline{B}_i$ to any $\overline{F}$ logic mode	t_{PHL13}	V_{CC} = 5.0 V See figure 4 logic mode test table	01	7	49	ns
Propagation delay times, low-to-high level output: 5/						
$\overline{A}_i$ or $\overline{B}_i$ to any $\overline{F}$ sum mode	t_{PLH1}	V_{CC} = 5.0 V See figure 4 sum mode test table	01	7	60	ns
$\overline{A}_i$ or $\overline{B}_i$ to any $\overline{F}$ diff mode	t_{PLH2}	V_{CC} = 5.0 V See figure 4 diff mode test table	01	7	69	ns
$\overline{A}_i$ or $\overline{B}_i$ to $\overline{P}$ sum mode	t_{PLH3}	V_{CC} = 5.0 V See figure 4 sum mode test table	01	7	27	ns
$\overline{A}_i$ or $\overline{B}_i$ to $\overline{P}$ diff mode	t_{PLH4}	V_{CC} = 5.0 V See figure 4 diff mode test table	01	7	40	ns
$\overline{A}_i$ or $\overline{B}_i$ to $\overline{G}$ sum mode	t_{PLH5}	V_{CC} = 5.0 V See figure 4 sum mode test table	01	7	27	ns
$\overline{A}_i$ or $\overline{B}_i$ to $\overline{G}$ diff mode	t_{PLH6}	V_{CC} = 5.0 V See figure 4 diff mode test table	01	7	40	ns
C_n to any $\overline{F}$ sum mode	t_{PLH7}	V_{CC} = 5.0 V See figure 4 sum mode test table	01	7	27	ns
$\overline{A}_i$ or $\overline{B}_i$ to A = B diff mode	t_{PLH8}	V_{CC} = 5.0 V See figure 4 diff mode test table	01	7	80	ns
C_n to C_{n+4} sum mode	t_{PLH9}	V_{CC} = 5.0 V See figure 4 sum mode test table	01	7	28	ns
C_n to C_{n+4} diff mode	t_{PLH10}	V_{CC} = 5.0 V See figure 4 diff mode test table	01	7	28	ns
$\overline{A}_i$ or $\overline{B}_i$ to C_{n+4} sum mode	t_{PLH11}	V_{CC} = 5.0 V See figure 4 sum mode test table	01	7	50	ns
$\overline{A}_i$ or $\overline{B}_i$ to C_{n+4} diff mode	t_{PLH12}	V_{CC} = 5.0 V See figure 4 diff mode test table	01	7	50	ns
$\overline{A}_i$ or $\overline{B}_i$ to any $\overline{F}$ logic mode	t_{PLH13}	V_{CC} = 5.0 V See figure 4 logic mode test table	01	7	69	ns

See footnotes at end of table I.

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions 1/	Device type	Limits		
				Min	Max	Units
Propagation delay times, high-to-low level output: 6/						
C_n to C_{n+X}, C_{n+Y}, C_{n+2}	t_{PHL1}	V_{CC} = 5.0 V; $\overline{P}_0$, $\overline{P}_1$, $\overline{P}_2$ = GND; $\overline{G}_0$, $\overline{G}_1$, $\overline{G}_2$ = 2.4 V	02	6	35	ns
$\overline{P}_0$, $\overline{P}_1$, or $\overline{P}_2$ to C_{n+X}, C_{n+Y}, C_{n+Z}	t_{PHL2}	P_i = GND; C_n, $\overline{G}_0$, $\overline{G}_1$, $\overline{G}_2$ = V_{CC} = 5.0 V	02	3	32	ns
$\overline{G}_0$, $\overline{G}_1$, or $\overline{G}_2$ to C_{n+Y}, C_{n+X}, C_{n+Z}	t_{PHL3}	$\overline{G}_i$ = 2.4 V; C_n, $\overline{P}_0$, $\overline{P}_1$, $\overline{P}_2$ = GND, V_{CC} = 5.0 V 7/	02	3	32	ns
$\overline{P}_1$, $\overline{P}_2$, or $\overline{P}_3$ to $\overline{G}$ or $\overline{P}$	t_{PHL4}	V_{CC} = 5.0 V; $\overline{P}_i$ = GND; C_n, $\overline{G}_0$, $\overline{G}_1$, $\overline{G}_2$, $\overline{G}_3$ = 2.4 V 7/	02	3	35	ns
$\overline{G}_0$, $\overline{G}_1$, $\overline{G}_2$, or $\overline{G}_3$ to $\overline{G}$	t_{PHL5}	V_{CC} = 5.0 V; G_i = 2.4 V; $\overline{P}_1$, $\overline{P}_2$, $\overline{P}_3$ = GND 7/	02	3	35	ns
$\overline{P}_0$, $\overline{P}_1$, $\overline{P}_2$, or $\overline{P}_3$ to $\overline{P}$	t_{PHL6}	$\overline{P}_i$ = GND 7/	02	3	35	ns
Propagation delay times, low-to-high level output: 6/						
C_n to C_{n+X}, C_{n+Y}, C_{n+Z}	t_{PLH1}	V_{CC} = 5.0 V; $\overline{P}_0$, $\overline{P}_1$, $\overline{P}_2$ = GND; $\overline{G}_0$, $\overline{G}_1$, $\overline{G}_2$ = 2.4 V	02	6	29	ns
$\overline{P}_0$, $\overline{P}_1$, or P_2 to C_{n+X}, C_{n+Y}, C_{n+Z}	t_{PLH2}	V_{CC} = 5.0 V; C_n, $\overline{G}_0$, $\overline{G}_1$, $\overline{G}2$, G = 2.4 V; P_i = GND 7/	02	3	25	ns
$\overline{G}_0$, $\overline{G}_1$, or $\overline{G}_2$ to C_{n+X}, C_{n+Y}, C_{n+Z}	t_{PLH3}	V_{CC} = 5.0 V; C_n, $\overline{P}_0$, $\overline{P}_1$, $\overline{P}_2$ = GND; $\overline{G}_i$ = 2.4 V 7/	02	3	25	ns
$\overline{P}_1$, $\overline{P}_2$, or $\overline{P}_3$ to $\overline{G}$ or $\overline{P}$	t_{PLH4}	V_{CC} = 5.0 V; C_n, $\overline{G}_0$, $\overline{G}_1$, $\overline{G}_2$, G_3 = 2.4 V; P_i = GND 7/	02	3	26	ns
$\overline{G}_0$, $\overline{G}_1$, $\overline{G}_2$, or $\overline{G}_3$ to $\overline{G}$	t_{PLH5}	V_{CC} = 5.0 V; $\overline{P}_1$, $\overline{P}_2$, $\overline{P}_3$ = GND; $\overline{G}_i$ = 2.4 V 7/	02	3	26	ns
$\overline{P}_0$, $\overline{P}_1$, $\overline{P}_2$, or $\overline{P}_3$ to $\overline{P}$	t_{PLH6}	V_{CC} = 5.0 V; $\overline{P}_i$ = GND 7/	02	3	26	ns

NOTES:
1/ Condition of inputs specified in table III.
2/ All unspecified inputs at 5.5 V.
3/ All unspecified inputs at 0 V.
4/ Not more than one output should be shorted at a time.
5/ In $\overline{A}_i$ and $\overline{B}_i$, i = 0, 1, 2, 3.
6/ In $\overline{G}_i$ and $\overline{P}_i$, i = 0, 1, 2, or 3.
7/ If not under test.

3.6 Electrical test requirements. Electrical test requirements shall be as specified in table III for the applicable device type and device class. The subgroups of table III which constitute the minimum electrical test requirements for screening, qualification, and quality conformance by device class are specified in table II. (subgroups 7 and 8 testing requires only a summary of attributes data.)

TABLE II. Electrical test requirements.

MIL-STD-883 test requirement	Subgroups (see table III)		
	Class S devices	Class B devices	Class C devices
Interim electrical parameters (Pre Burn-In) (method 5004)	1	1	None
Final electrical test parameters (method 5004)	1*, 2, 3, 7, 9, 10, 11	1*, 2, 3, 7, 9	1, 7
Group A test requirements (method 5005)	1, 2, 3, 7, 8, 9, 10, 11	1, 2, 3, 7, 9	1, 2, 3, 7, 9
Group C and D end point electrical parameters (method 5005)	1, 2, 3	1, 2, 3	1
Additional electrical subgroups for Group C periodic inspections	None	10, 11	10, 11

* PDA applies to subgroup 1 (see 4.3c).

3.7 Marking. Marking shall be in accordance with MIL-M-38510 and 1.2. At the option of the manufacturer, the country of origin may be omitted from the body of the microcircuit, but shall be retained on the initial container.

3.8 Microcircuit group assignment. The devices covered by this specification shall be in microcircuit group number 4 (see MIL-M-38510 Appendix E).

4. PRODUCT ASSURANCE PROVISIONS

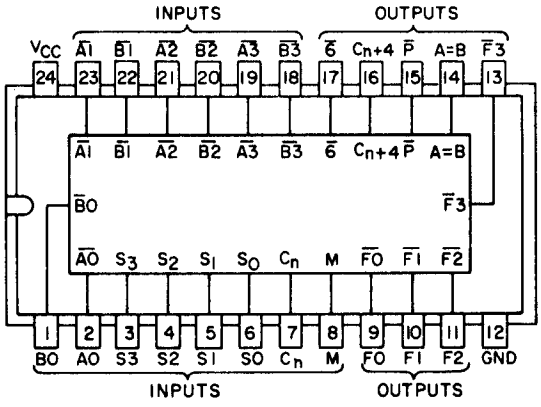
4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with MIL-M-38510 and Method 5005 of MIL-STD-883, except as modified herein.

4.2 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, and D inspections (see 4.4.1, 4.4.2, and 4.4.3).

Pin designations

Designation	Pin nos.	Function
$\overline{A}3, \overline{A}2, \overline{A}1, \overline{A}0$	19, 21, 23, 2	Word A inputs
$\overline{B}3, \overline{B}2, \overline{B}1, \overline{B}0$	18, 20, 22, 1	Word B inputs
S3, S2, S1, S0	3, 4, 5, 6	Function-select inputs
C_n	7	Inv. carry input
M	8	Mode control input
$\overline{F}3, \overline{F}2, \overline{F}1, \overline{F}0$	13, 11, 10, 9	Function outputs
A = B	14	Comparator output
$\overline{P}$	15	Carry propagate output
C_{n+4}	16	Inv. carry output
$\overline{G}$	17	Carry generate output
V_{CC}	24	Supply voltage
GND	12	Ground

Cases J, K, L and Z

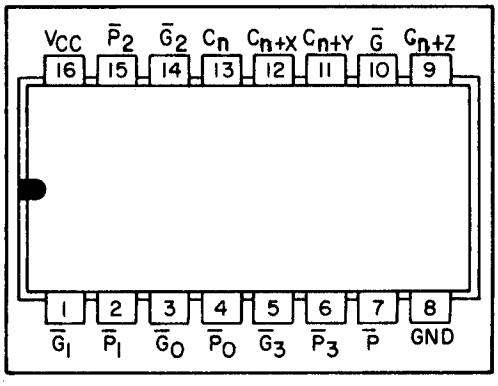


Device type 01

Pin designations

Designation	Pin nos.	Function
C_n	13	Carry input
$\overline{G}0, \overline{G}1, \overline{G}2, \overline{G}3$	3, 1, 14, 5	Carry generate input
$\overline{P}0, \overline{P}1, \overline{P}2, \overline{P}3$	4, 2, 15, 6	Carry propagate input
C_{n+x}, C_{n+y}, C_{n+z}	12, 11, 9	Carry output
$\overline{G}$	10	Carry generate output
$\overline{P}$	7	Carry propagate output

Cases E and F



Device type 02

FIGURE 1. Terminal connections and pin designations.

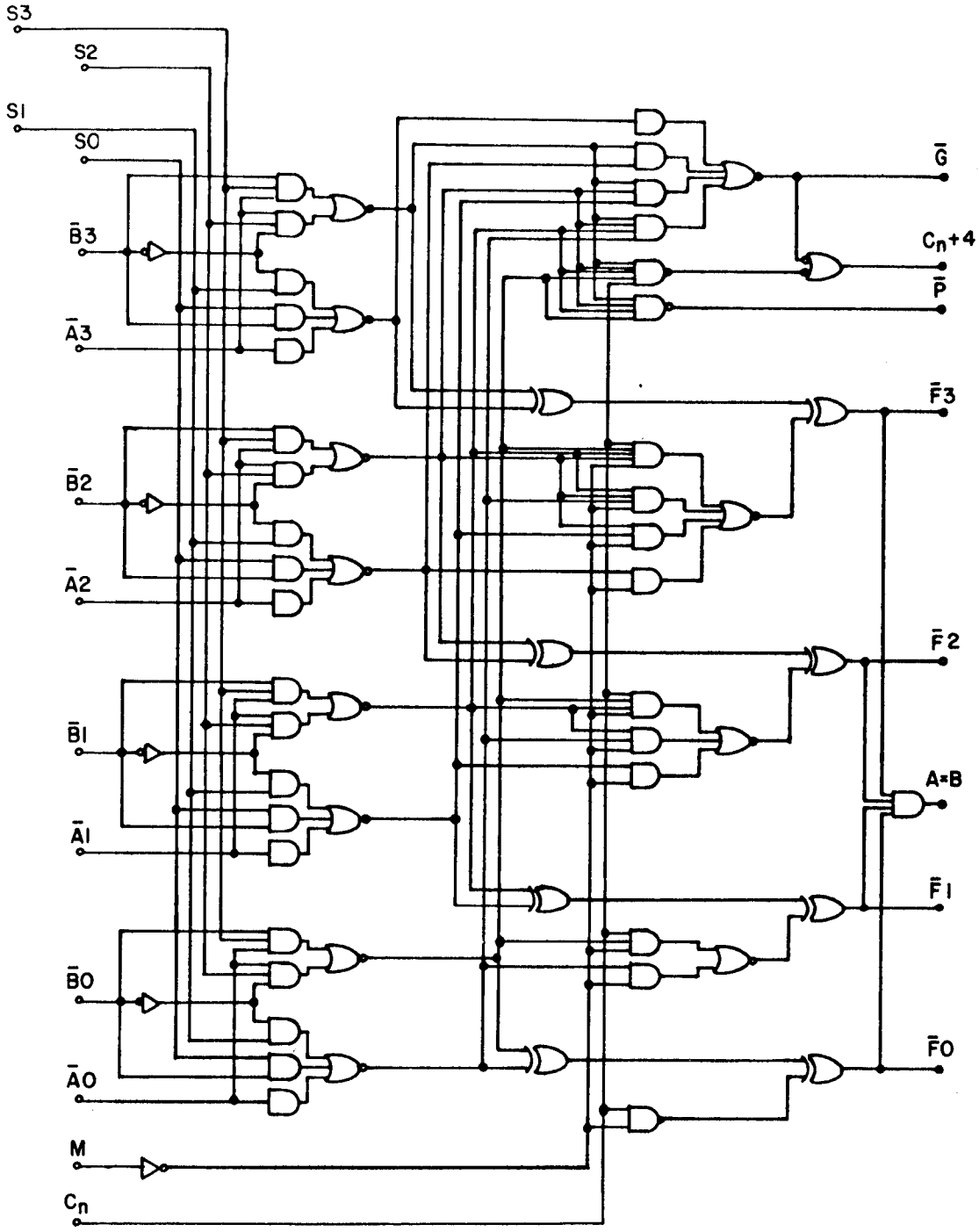
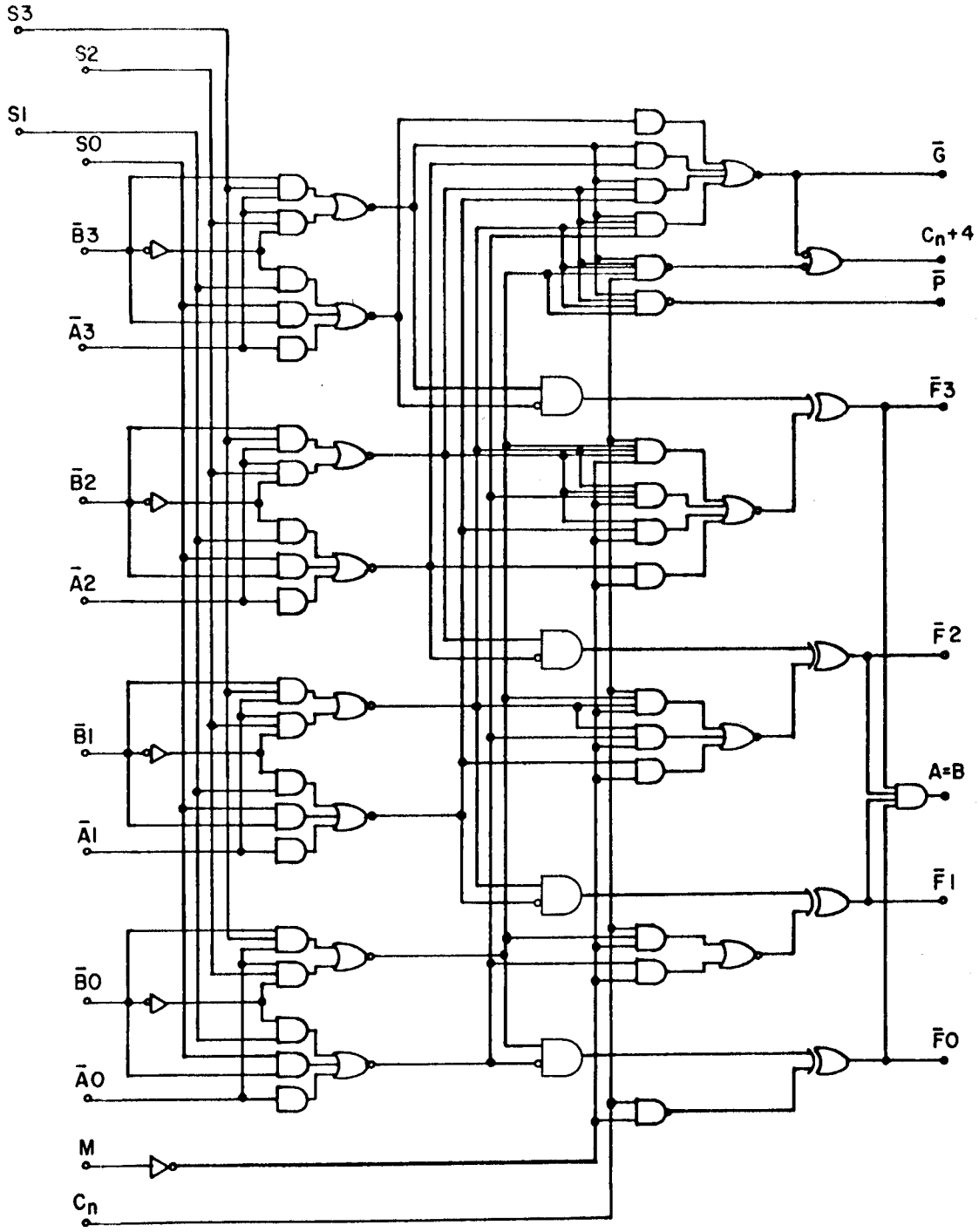
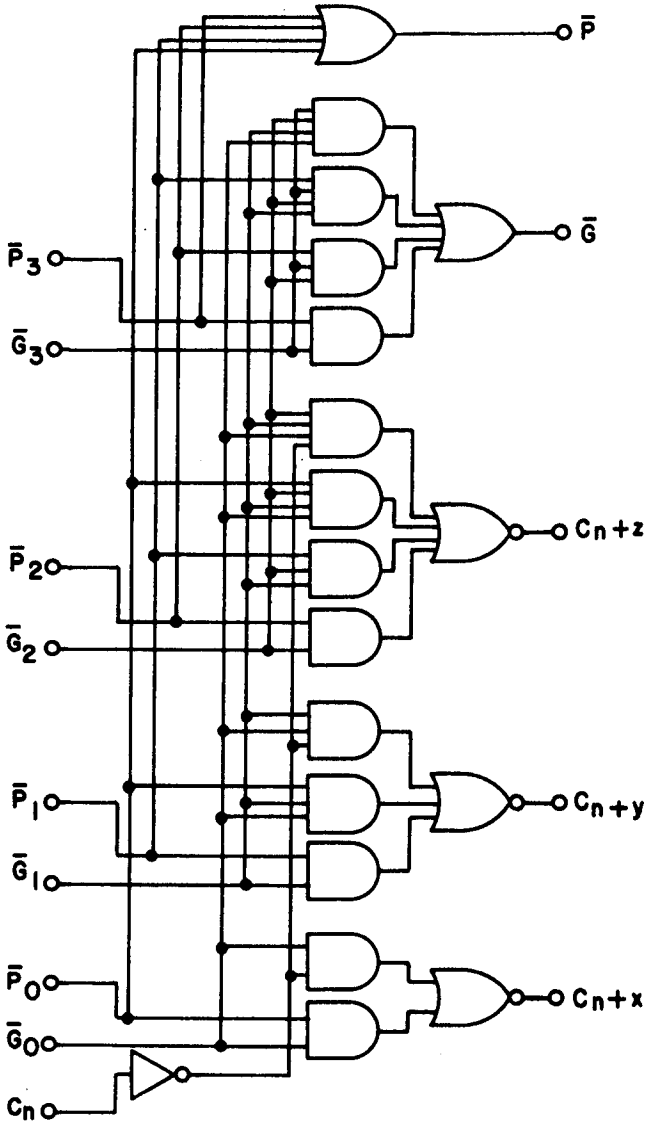


FIGURE 2. Logic diagram for device type 01 - Continued.



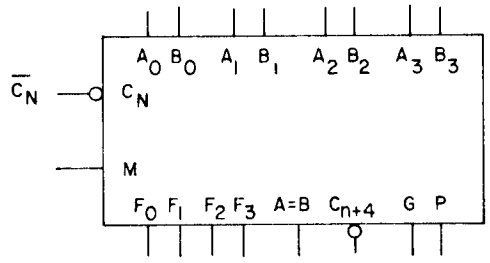
CIRCUITS B, C, D, E AND G

FIGURE 2. Logic diagram for device type 01. - Continued.



CIRCUITS A, B, C, AND D

FIGURE 2. Logic diagram for device type 02



	Selection $S_3S_2S_1S_0$	Active high data 3/		
		M = H Logic functions	M = L; Arithmetic operations	
			$C_n = 0$ $\overline{C_n} = 1 = H$	$C_n = 1$ $\overline{C_n} = 0 = L$
0	L L L L	$F = \overline{A}$	F = A	F = A plus 1
1	L L L H	$F = \overline{A + B}$	F = A + B	F = (A + B) plus 1
2	L L H L	$F = \overline{A}B$	$F = A + \overline{B}$	$F = (A + \overline{B})$ plus 1
3	L L H H	F = 0	F = minus 1 (2's compl)	F = zero
4	L H L L	$F = \overline{AB}$	$F = A$ plus $A\overline{B}$	$F = A$ plus $A\overline{B}$ plus 1
5	L H L H	$F = \overline{B}$	$F = (A + B)$ plus $A\overline{B}$	$F = (A + B)$ plus $A\overline{B}$ plus 1
2/ 6	L H H L	$F = A \oplus B$	F = A minus B minus 1	F = A minus B
7	L H H H	$F = A\overline{B}$	$F = A\overline{B}$ minus 1	$F = A\overline{B}$
8	H L L L	$F = \overline{A} + B$	F = A plus AB	F = A plus AB plus 1
9	H L L H	$F = \overline{A \oplus B}$	F = A plus B	F = A plus B plus 1
10	H L H L	F = B	$F = (A + \overline{B})$ plus AB	$F = (A + \overline{B})$ plus AB plus 1
11	H L H H	F = AB	F = AB minus 1	F = AB
12	H H L L	F = 1	F = A plus A 1/	F = A plus A plus 1
13	H H L H	$F = A + \overline{B}$	F = (A + B) plus A	F = (A + B) plus A plus 1
14	H H H L	F = A + B	$F = (A + \overline{B})$ plus A	$F = (A + \overline{B})$ plus A plus 1
15	H H H H	F = A	F = A minus 1	F = A

1/ Each bit is shifted to the next more significant position.

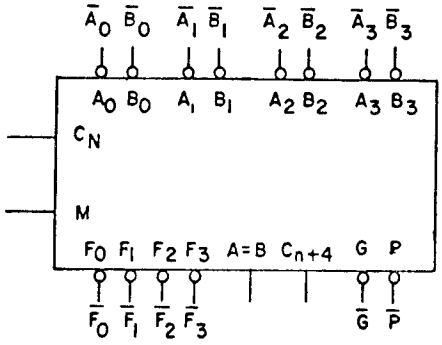
2/ This device (ALU) can be used as a comparator when placed in the subtract mode (i.e., $S_3S_2S_1S_0$ are at logical levels LHHL respectively) and the following expressions are valid:

Active high data

When C_n is high and C_{n+4} is high, then $A \leq B$
When C_n is low and C_{n+4} is high, then $A < B$
When C_n is high and C_{n+4} is low, then $A > B$
When C_n is low and C_{n+4} is low, then $A \geq B$

3/ The table shown applies for positive logic. If negative logic is used, active high data becomes active low data.

FIGURE 3. Truth tables and logic equations for device type 01.



	Selection $S_3S_2S_1S_0$	Active low data 3/		
		M = H Logic functions	M = L; Arithmetic operations	
			C_n = 0 = L	C_n = 1 = H
0	L L L L	F = $\overline{A}$	F = A minus 1	F = A
1	L L L H	F = $\overline{AB}$	F = AB minus 1	F = AB
2	L L H L	F = $\overline{A}$ + B	F = A$\overline{B}$ minus 1	F = A$\overline{B}$
3	L L H H	F = 1	F = minus 1 (2's compl)	F = zero
4	L H L L	F = $\overline{A + B}$	F = A plus (A + $\overline{B}$)	F = A plus (A + $\overline{B}$) plus 1
5	L H L H	F = $\overline{B}$	F = AB plus (A + $\overline{B}$)	F = AB plus (A + $\overline{B}$) plus 1
2/ 6	L H H L	F = $\overline{A \oplus B}$	F = A minus B minus 1	F = A minus B
7	L H H H	F = A + $\overline{B}$	F = A + $\overline{B}$	F = (A + $\overline{B}$) plus 1
8	H L L L	F = $\overline{A}$B	F = A plus (A + B)	F = A plus (A + B) plus 1
9	H L L H	F = A $\oplus$ B	F = A plus B	F = A plus B plus 1
10	H L H L	F = B	F = A$\overline{B}$ plus (A + B)	F = A$\overline{B}$ plus (A + B) plus 1
11	H L H H	F = A + B	F = A + B	F = (A + B) plus 1
12	H H L L	F = 0	F = A plus A 1/	F = A plus A plus 1
13	H H L H	F = A$\overline{B}$	F = AB plus A	F = AB plus A plus 1
14	H H H L	F = AB	F = A$\overline{B}$ plus A	F = A$\overline{B}$ plus A plus 1
15	H H H H	F = A	F = A	F = A plus 1

1/ Each bit is shifted to the next more significant position.

2/ This device (ALU) can be used as a comparator when placed in the subtract mode (i.e., $S_3S_2S_1S_0$ are at logical levels LHHL respectively) and the following expressions are valid:

Active low data

When C_n is low and C_{n+4} is low, then A $\leq$ B
When C_n is high and C_{n+4} is low, then A $<$ B
When C_n is low and C_{n+4} is high, then A $>$ B
When C_n is high and C_{n+4} is high, then A $\geq$ B

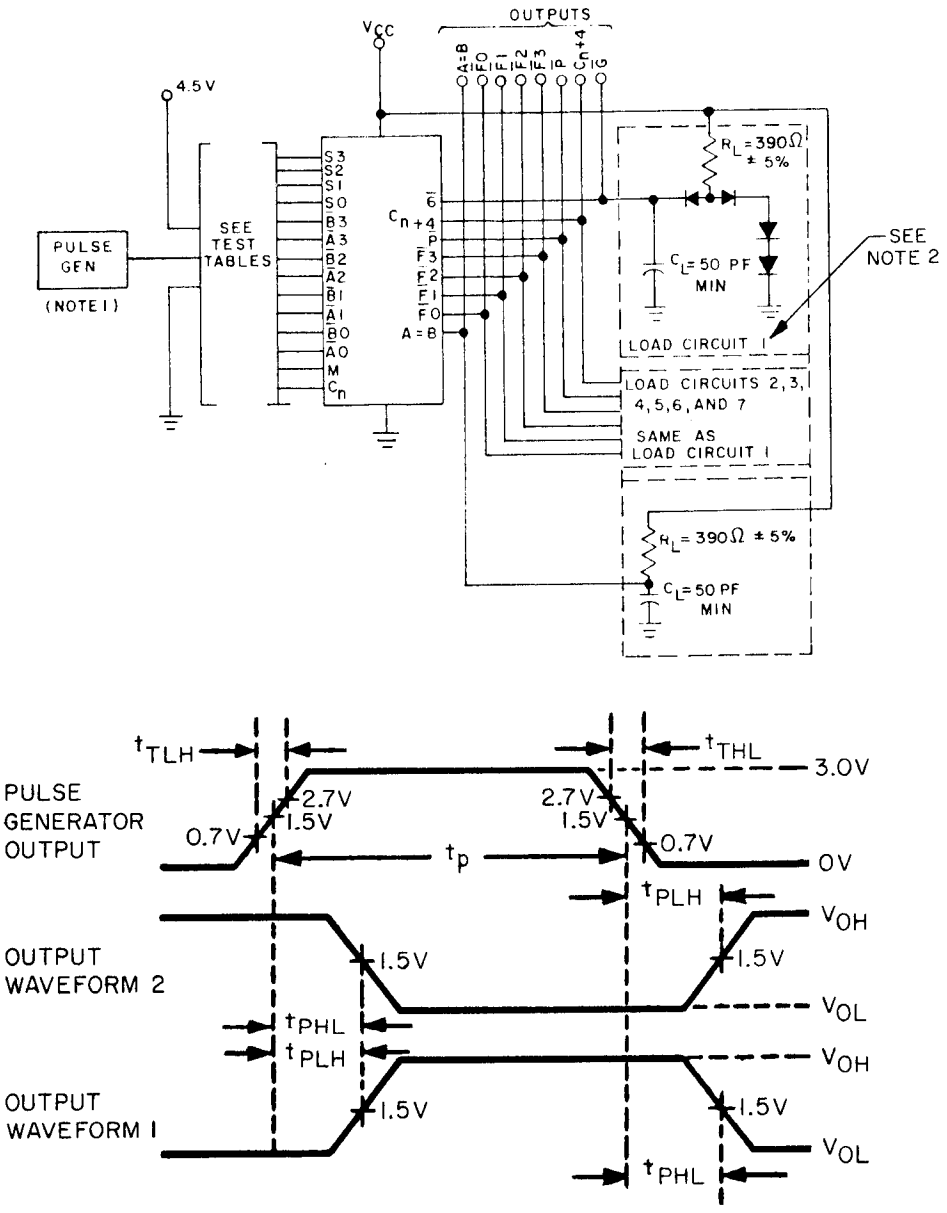
3/ The table shown applies for negative logic. If positive logic is used, active low data becomes active high data.

FIGURE 3. Truth tables and logic equations for device type 01 - Continued.

Inputs									Outputs				
C_n	$\overline{G}_0$	$\overline{P}_0$	$\overline{G}_1$	$\overline{P}_1$	$\overline{G}_2$	$\overline{P}_2$	$\overline{G}_3$	$\overline{P}_3$	C_{n+x}	C_{n+y}	C_{n+z}	$\overline{G}$	$\overline{P}$
X	H	H							L				
L	H	X							L				
X	L	X							H				
H	X	L							H				
X	X	X	H	H						L			
X	H	H	H	X						L			
L	H	X	H	X						L			
X	X	X	L	X						H			
X	L	X	X	L						H			
H	X	L	X	L						H			
X	X	X	X	X	H	H					L		
X	X	X	H	H	H	X					L		
X	H	H	H	X	H	X					L		
L	H	X	H	X	H	X					L		
X	X	X	X	X	L	X					H		
X	X	X	L	X	X	L					H		
X	L	X	X	L	X	L					H		
H	X	L	X	L	X	L					H		
	X		X	X	X	X	H	H				H	
	X		X	X	H	H	H	X				H	
	X		H	H	H	X	H	X				H	
	H		H	X	H	X	H	X				H	
	X		X	X	X	X	L	X				L	
	X		X	X	L	X	X	L				L	
	X		L	X	X	L	X	L				L	
	L		X	L	X	L	X	L				L	
		H		X		X		X					H
		X		H		X		X					H
		X		X		H		X					H
		X		X		X		H					H
		L		L		L		L					L

H = High voltage level
L = Low voltage level
X = Don't care

FIGURE 3. Truth tables and logic equations for device type 02 - Continued.



NOTES:
1. The pulse generator has the following characteristics: PRR = 1 MHz ±10%, $Z_{OUT} \approx 50$ ohms. Pulse width = 200 ns ±10%, $t_{TLH} = t_{THL} \leq 10$ ns.
2. Load circuits on a given output are only required where the specific test given in table III indicates "OUT" on that output. Load circuits may otherwise be omitted.
3. C_L includes probe and jig capacitance.
4. All diodes are 1N3064, or equivalent.

FIGURE 4. Waveforms for propagation delay time and test circuit for device type 01.

$\overline{SUM}$ MODE TEST TABLE

FUNCTION INPUTS: S0 = S3 = 4.5 V, S1 = S2 = M = 0V

TEST	INPUT UNDER TEST	OTHER INPUT SAME BIT		OTHER DATA INPUTS		OUTPUT UNDER TEST	OUTPUT WAVEFORM
		APPLY 4.5 V	APPLY GND	APPLY 4.5 V	APPLY GND		
t_{PLH1} / t_{PHL1}	$\overline{A}_i$ 1/	$\overline{B}_i$	None	Remaining $\overline{A}$ and $\overline{B}$	C_n	Any $\overline{F}_i$	1
t_{PLH1} / t_{PHL1}	$\overline{B}_i$	$\overline{A}_i$	None	Remaining $\overline{A}$ and $\overline{B}$	C_n	Any $\overline{F}_i$	1
t_{PLH3} / t_{PHL3}	$\overline{A}_i$	$\overline{B}_i$	None	None	Remaining $\overline{A}$ and $\overline{B}$, C_n	$\overline{P}$	1
t_{PLH3} / t_{PHL3}	$\overline{B}_i$	$\overline{A}_i$	None	None	Remaining $\overline{A}$ and $\overline{B}$, C_n	$\overline{P}$	1
t_{PLH5} / t_{PHL5}	$\overline{A}_i$	None	$\overline{B}_i$	Remaining $\overline{B}$	Remaining $\overline{A}$, C_n	$\overline{G}$	1
t_{PLH5} / t_{PHL5}	$\overline{B}_i$	None	$\overline{A}_i$	Remaining $\overline{B}$	Remaining $\overline{A}$, C_n	$\overline{G}$	1
t_{PLH7} / t_{PHL7}	C_n	None	None	All $\overline{A}$	All $\overline{B}$	Any $\overline{F}_i$	1
t_{PLH9} / t_{PHL9}	C_n	None	None	All $\overline{A}$	All $\overline{B}$	C_{n+4}	1
t_{PLH11} / t_{PHL11}	$\overline{A}_i$	None	$\overline{B}_i$	Remaining $\overline{B}$	Remaining $\overline{A}$ and C_n	C_{n+4}	2
t_{PLH11} / t_{PHL11}	$\overline{B}_i$	None	$\overline{A}_i$	Remaining $\overline{B}$	Remaining $\overline{A}$ and C_n	C_{n+4}	2

1/ In $\overline{A}_i$, $\overline{B}_i$ and $\overline{F}_i$, i = 0, 1, 2, or 3.

FIGURE 4. Waveforms for propagation delay time and test circuit for device type 01 - Continued.

$\overline{\text{DIFF}}$ MODE TEST TABLE

FUNCTION INPUTS: S1 = S2 = 4.5 V, S0 = S3 = M = 0 V

TEST	INPUT UNDER TEST	OTHER INPUT SAME BIT		OTHER DATA INPUTS		OUTPUT UNDER TEST	OUTPUT WAVEFORM
		APPLY 4.5 V	APPLY GND	APPLY 4.5 V	APPLY GND		
t_{PLH2} / t_{PHL2}	$\overline{A}_i$ 1/	None	$\overline{B}_i$	Remaining $\overline{A}$	Remaining $\overline{B}$, C_n	Any $\overline{F}_i$	1
t_{PLH2} / t_{PHL2}	$\overline{B}_i$	$\overline{A}_i$	None	Remaining $\overline{A}$	Remaining $\overline{B}$, C_n	Any $\overline{F}_i$	2
t_{PLH4} / t_{PHL4}	$\overline{A}_i$	None	$\overline{B}_i$	None	Remaining $\overline{A}$ and $\overline{B}$, C_n	$\overline{P}$	1
t_{PLH4} / t_{PHL4}	$\overline{B}_i$	$\overline{A}_i$	None	None	Remaining $\overline{A}$ and $\overline{B}$, C_n	$\overline{P}$	2
t_{PLH6} / t_{PHL6}	$\overline{A}_i$	$\overline{B}_i$	None	None	Remaining $\overline{A}$ and $\overline{B}$, C_n	$\overline{G}$	1
t_{PLH6} / t_{PHL6}	$\overline{B}_i$	None	$\overline{A}_i$	None	Remaining $\overline{A}$ and $\overline{B}$, C_n	$\overline{G}$	2
t_{PLH8} / t_{PHL8}	$\overline{A}_i$	None	$\overline{B}_i$	Remaining $\overline{A}$	Remaining $\overline{B}$, C_n	A = B	1
t_{PLH8} / t_{PHL8}	$\overline{B}_i$	$\overline{A}_i$	None	Remaining $\overline{A}$	Remaining $\overline{B}$, C_n	A = B	2
t_{PLH10} / t_{PHL10}	C_n	None	None	All $\overline{A}$ and $\overline{B}$	None	C_{n+4}	1
t_{PLH12} / t_{PHL12}	$\overline{A}_i$	$\overline{B}_i$	None	None	Remaining $\overline{A}$ and $\overline{B}$, C_n	C_{n+4}	2
t_{PLH12} / t_{PHL12}	$\overline{B}_i$	None	$\overline{A}_i$	None	Remaining $\overline{A}$ and $\overline{B}$, C_n	C_{n+4}	1

1/ In $\overline{A}_i$, $\overline{B}_i$ and $\overline{F}_i$, i = 0, 1, 2, or 3.

FIGURE 4. Waveforms for propagation delay time and test circuit for device type 01 - Continued.

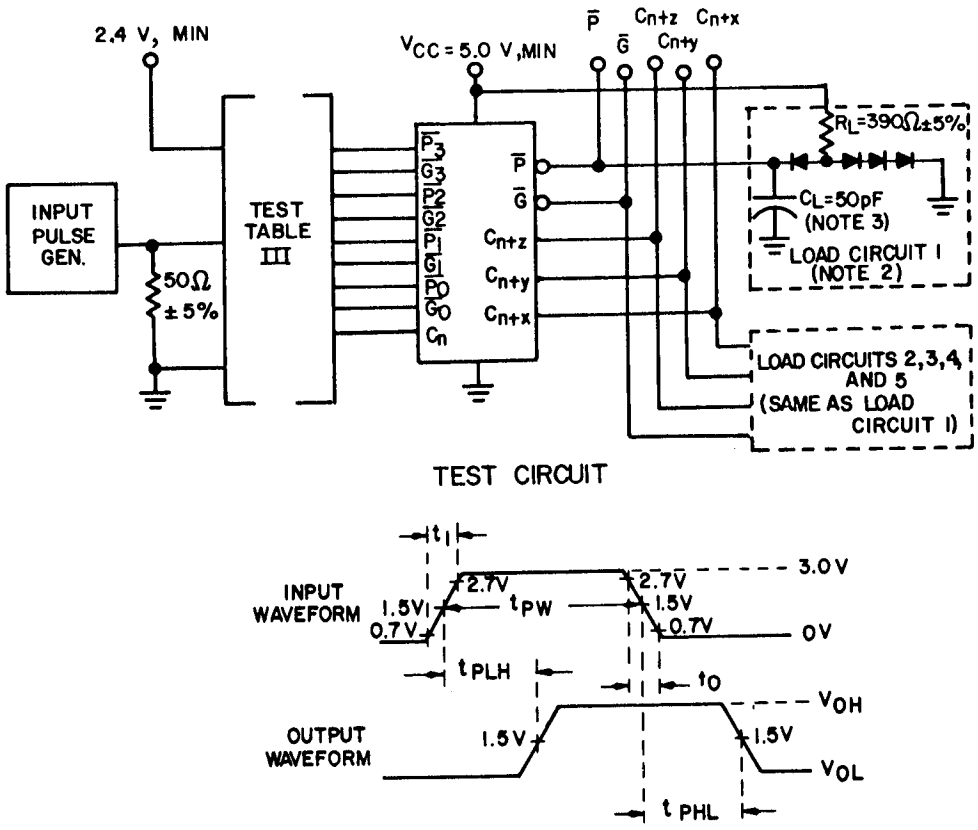
LOGIC MODE TEST TABLE

FUNCTION INPUTS: S1 = S2 = M = 4.5 V, S0 = S3 = 0 V

TEST	INPUT UNDER TEST	OTHER INPUT SAME BIT		OTHER DATA INPUTS		OUTPUT UNDER TEST	OUTPUT WAVEFORM
		APPLY 4.5 V	APPLY GND	APPLY 4.5 V	APPLY GND		
t_{PLH13} t_{PHL13}	$\overline{A}_i$ 1/	None	$\overline{B}_i$	None	Remaining $\overline{A}$ and $\overline{B}$, C_n	Any $\overline{F}_i$	1
t_{PLH13} t_{PHL13}	$\overline{B}_i$	None	$\overline{A}_i$	None	Remaining $\overline{A}$ and $\overline{B}$, C_n	Any $\overline{F}_i$	1

1/ In $\overline{A}_i$, $\overline{B}i$ and $\overline{F}_i$, i = 0, 1, 2, or 3.

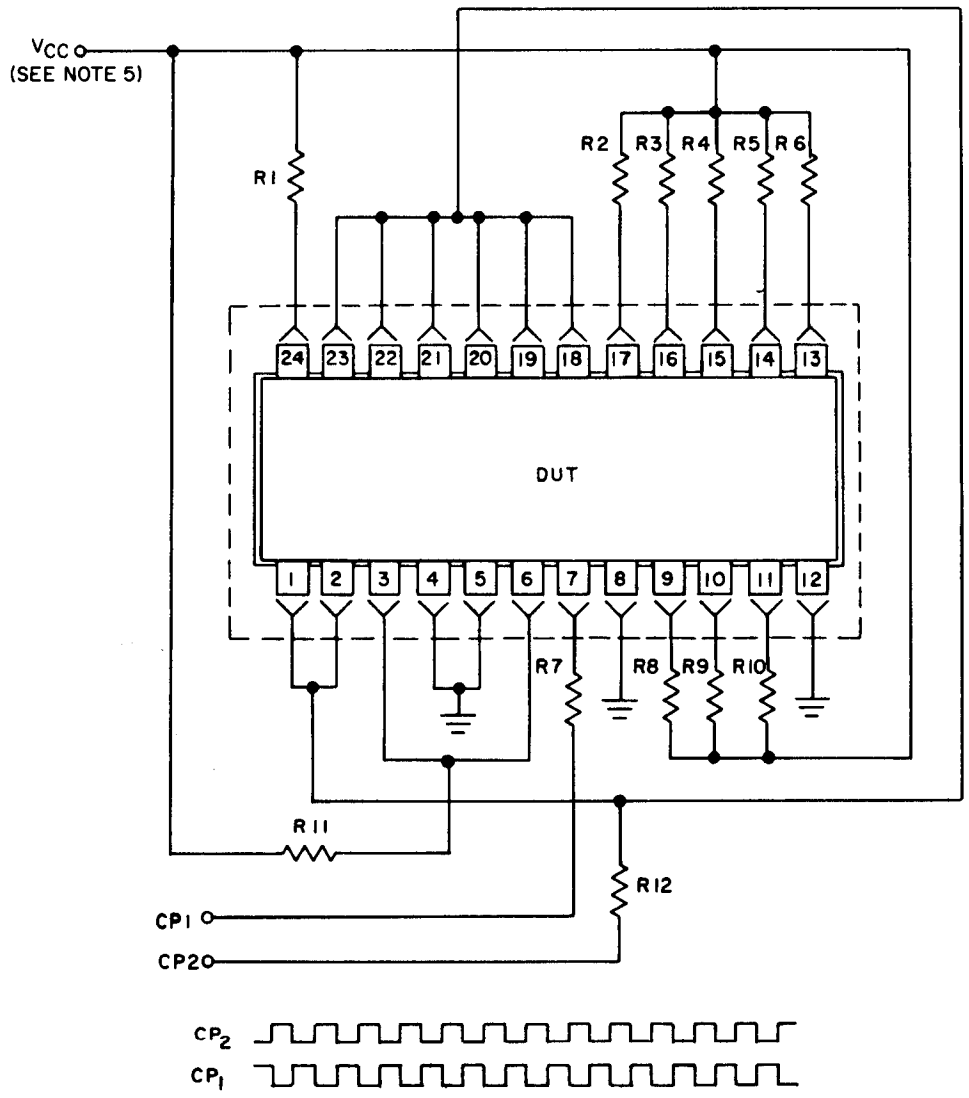
FIGURE 4. Waveforms for propagation delay time and test circuit for device type 01 - Continued.



TEST CIRCUIT

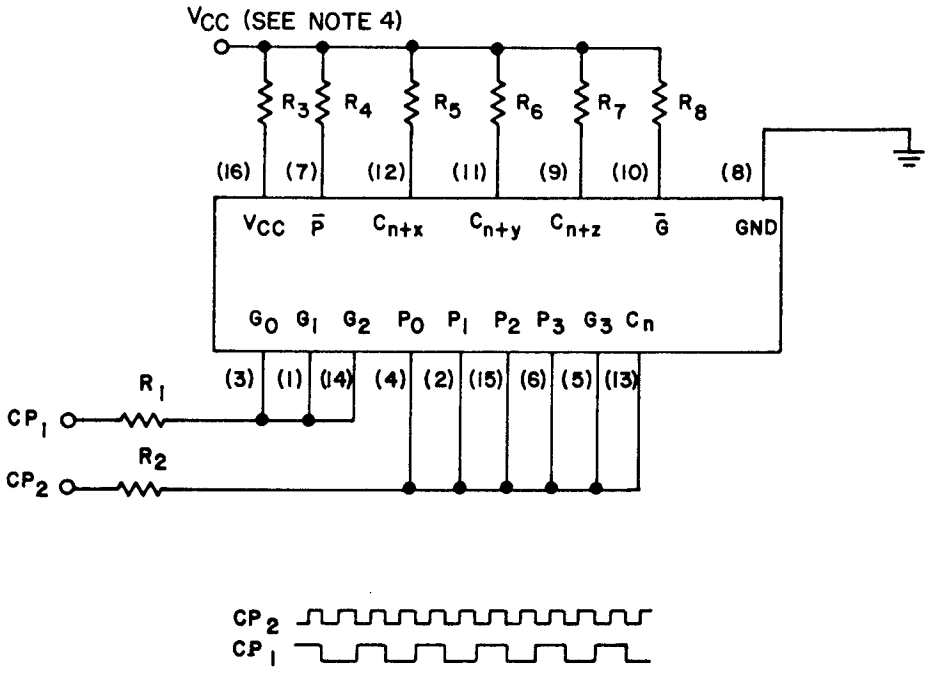
NOTES:
1. Input pulse charactersitics: t_{PW} = 200 ±10% ms, PRR = 1 MHz, $t_0 = t_1 \leq 10$ ns, $Z_{OUT} \approx 50$ ohms.
2. Load circuits on a given output are only required where the specific test given in table III indicates "OUT" on that output. Load circuits may otherwise be omitted.
3. C_L = 50 pF including stray wiring and scope probe.
4. All diodes, 1N3064 or equivalent.

FIGURE 4. Waveforms for propagation delay time and test circuit for device type 02.



NOTES:
1. R_1 = 5 ohms ±5%.
2. R_7 = 27 ohms ±5%.
3. R_2 thru R_6 = R_8 thru R_{11} = 220 ohms ±5%.
4. R_{12} = 82 ohms ±5%.
5. V_{CC} shall be high enough to insure 5 V minimum at device terminals.
6. CP_1 = 100 kHz ±10%, duty cycle = 50% ±10%, 3 V minimum at device terminals.
7. CP_2 = 100 kHz ±10%, duty cycle = 50% ±10%, 3 V minimum at device terminals.

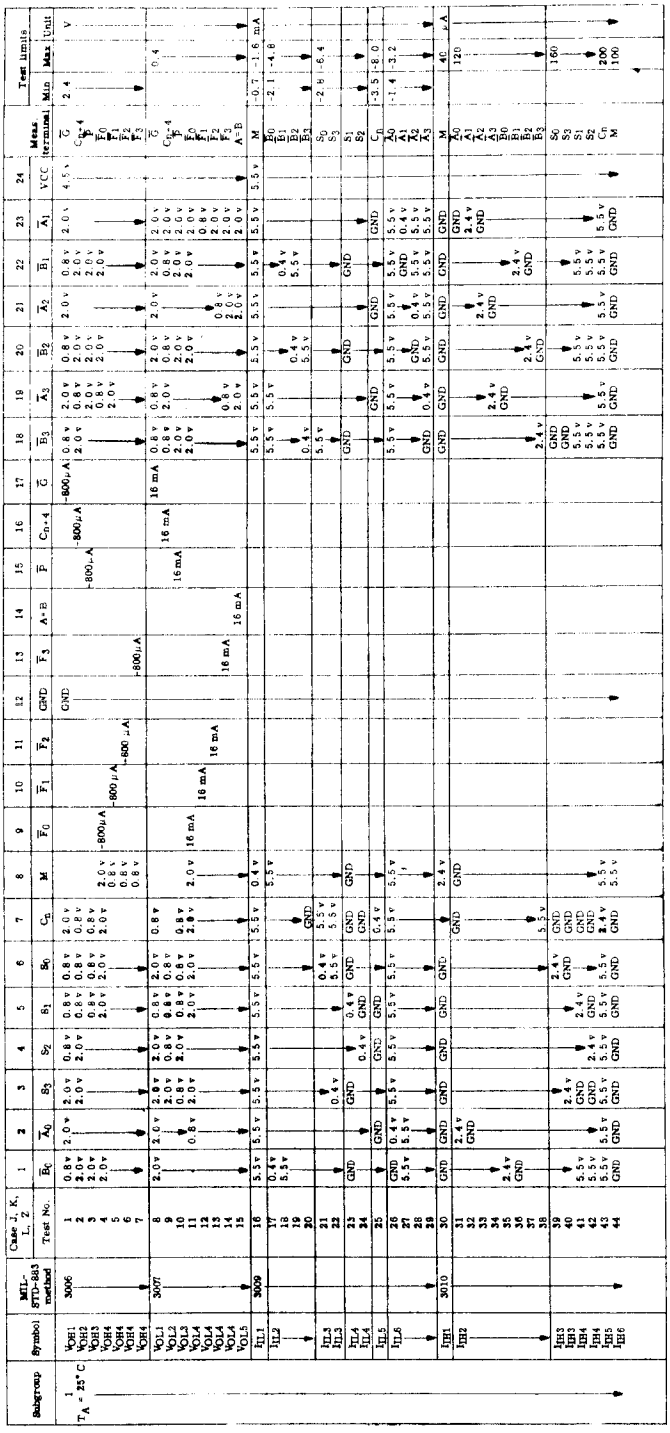
FIGURE 5. Test circuit for burn-in and life test for device type 01.



NOTES:
1. $R_1 = R_2 = 10\Omega \pm 5\%$.
2. $R_3 = 4.7\Omega \pm 5\%$.
3. R_4 thru $R_8 = 220\Omega \pm 5\%$.
4. V_{CC} shall be high enough to insure 5 V minimum at device terminals.
5. CP_1 100 kHz ±10%, duty cycle, 50% ±10%, 3 V minimum at device terminals.
6. CP_2 50 kHz ±10%, duty cycle, 50% ±10%, 3 V minimum at device terminals.

FIGURE 6. Test circuit for burn-in and life test for device type 02.

TABLE III. Group A inspection for device type 01. 1



See notes at end of table for device type 01.

TABLE III. Group A inspection for device type 01 1/ - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case J, K, L, Z Test No.	1 $\overline{B}_0$	2 $\overline{A}_0$	3 S_3	4 S_2	5 S_1	6 S_0	7 C_n	8 M	9 $\overline{F}_0$	10 $\overline{F}_1$	11 $\overline{F}_2$	12 GND	13 $\overline{F}_3$	14 A=B	15 $\overline{P}$	16 C_{n+4}	17 $\overline{G}$	18 $\overline{B}_3$	19 $\overline{A}_3$	20 $\overline{B}_2$	21 $\overline{A}_2$	22 $\overline{B}_1$	23 $\overline{A}_1$	24 VCC	Meas. terminal	Test limits Min	Test limits Max	Unit
1 T_A = 25°C	I_{IH7}	3010	45	GND	5.5 v	GND	GND	GND	GND	GND	GND				GND						GND	GND	GND	GND	GND	GND	5.5 v	$\overline{A}_0$		300	µA
			46		GND																			GND		5.5 v		$\overline{A}_1$			
			47																					5.5 v		GND		$\overline{A}_2$			
			48																			5.5 v		GND				$\overline{A}_3$			
			49	5.5 v																		GND						$\overline{B}_0$			
			50	GND																					5.5 v			$\overline{B}_1$			
			51																				5.5 v		GND			$\overline{B}_2$			
			52																		5.5 v		GND					$\overline{B}_3$			
	I_{IH8}		53						5.5 v												GND							S_0		400	
	I_{IH8}		54			5.5 v			GND												GND							S_3			
	I_{IH9}		55	5.5 v		GND		5.5 v													5.5 v		5.5 v		5.5 v			S_1			
	I_{IH9}		56			GND	5.5 v	GND																				S_2			
	I_{IH10}		57		5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v											5.5 v		5.5 v		5.5 v		C_n		500	
	I_{OS1}	3011	58	GND	GND	5.5 v	GND	GND	GND	GND	GND									GND	5.5 v	5.5 v	GND	GND	GND	GND		$\overline{G}$	-20	-55	mA
	I_{OS2}		59	GND	GND	GND	GND	GND	GND	GND	GND								GND		GND	GND	GND	GND	GND	GND		C_{n+4}			
	I_{OS3}		60	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v							GND			5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v		$\overline{P}$			
			61									GND																$\overline{F}_0$			
			62										GND															$\overline{F}_1$			
			63											GND														$\overline{F}_2$			
			64													GND												$\overline{F}_3$			
	I_{CCL1}	3005	65	GND						GND											GND	5.5 v	GND	5.5 v	GND	5.5 v		VCC		127	
	I_{CCH1}	3005	66	GND	GND					GND	5.5 v										GND	GND	GND	GND	GND	GND	5.5 v	VCC		135	
	V_{IC}		67	-12mA																							4.5 v	$\overline{B}_0$		-1.5	V
			68		-12 mA																							$\overline{A}_0$			
			69			-12 mA																						S_3			
			70				-12 mA																					S_2			
			71					-12 mA																				S_1			
			72						-12 mA																			S_0			
			73							-12 mA																		C_n			
			74								-12 mA																	M			
			75																		-12 mA							$\overline{B}_3$			
			76																			-12 mA						$\overline{A}_3$			
			77																				-12 mA					$\overline{B}_2$			
			78																					-12mA				$\overline{A}_2$			
			79																						-12 mA			$\overline{B}_1$			
			80																							-12mA		$\overline{A}_1$			
	I_{CEX}		81		2.0 v	2.0 v	2.0 v	2.0 v	2.0 v		2.0 v						5.5 v					2.0 v		2.0 v		2.0 v	4.5 v	A=B		250	µA
2	Same tests, terminal conditions and limits as for subgroup 1, except T_A = 125° C, and V_{IC} tests are omitted.																														
3	Same tests, terminal conditions and limits as for subgroup 1, except T_A = -55° C, and V_{IC} tests are omitted.																														
7 2/ 3/ T_A = 25°C			82	B	B	B	B	B	B	B	B	H 4/	L 4/	L 4/	GND	L 4/	L 4/	L 4/	H 4/	L 4/	B	B	B	B	B	B	4.5 v	All output	H or L as shown 4/		
			83	B	B	B	A		A	A	A		H	H		H	H	L	H	L	B	B	B			B					
			84	B	B	A	A		B	A	A		H	H		H	H	H	L	H	B	A	B			B					
			85	A	A	A	B		A	B	B		L	L		L	L	H			A	B	A	B		A					
			86	B	A	B	A	B		B		H	H	L				H			A		B	A	B	B					
			87	B	B	A	A	A		B		L	L	L				L	L	H	A		A	B	A	B					

See notes at end of table for device type 01.

TABLE III. Group A inspection for device type 01 [1/] - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case J, K, L, Z	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Meas. terminal	Test limits		
			Test No.	$\overline{B}_0$	$\overline{A}_0$	S_3	S_2	S_1	S_0	C_n	M	$\overline{F}_0$	$\overline{F}_1$	$\overline{F}_2$	GND	$\overline{F}_3$	A=B	$\overline{P}$	C_{n+4}	$\overline{G}$	$\overline{B}_3$	$\overline{A}_3$	$\overline{B}_2$	$\overline{A}_2$	$\overline{B}_1$	$\overline{A}_1$	VCC		Min	Max	Unit
7 [2/3/] T_A = 25°C			88	A	B	A	A	B	A	A	B	H	H	L	GND	L	L	L	H	L	B	B	B	B	A	B	4.5 v	All output	H or L as shown [4]		
↓			89	B	B	A	B	B	B	A	A	H	H	H	↓	L	L	L	↓	↓	↓	A	B	B	B	B	↓	↓	↓	↓	
↓			90	↓	B	A	A	B	↓	A	B	L	L	↓	↓	H	L	H	↓	↓	↓	B	B	A	↓	A	↓	↓	↓	↓	
↓			91	↓	A	A	A	A	↓	B	B	H	H	↓	↓	H	H	H	↓	↓	B	B	A	B	↓	A	↓	↓	↓	↓	
↓			92	↓	B	B	A	B	B	A	A	H	H	H	↓	L	L	L	↓	↓	A	A	B	↓	B	B	↓	↓	↓	↓	
↓			93	↓	B	A	B	↓	A	B	B	H	H	L	↓	H	↓	L	↓	↓	A	B	↓	↓	A	B	↓	↓	↓	↓	
↓			94	↓	A	A	A	↓	A	A	↓	L	L	H	↓	L	↓	H	↓	↓	B	↓	↓	↓	A	B	↓	↓	↓	↓	
↓			95	↓	B	A	↓	↓	B	A	↓	L	L	↓	↓	L	L	H	↓	↓	A	↓	B	↓	B	A	↓	↓	↓	↓	
↓			96	↓	A	B	↓	↓	A	B	↓	H	H	↓	↓	H	H	H	↓	↓	A	B	A	B	B	B	↓	↓	↓	↓	
↓			97	↓	B	B	↓	↓	A	A	↓	L	H	H	↓	↓	L	L	↓	↓	A	A	A	A	A	A	↓	↓	↓	↓	
↓			98	↓	A	A	↓	B	A	A	↓	L	L	L	↓	↓	L	H	↓	↓	B	B	A	B	A	B	↓	↓	↓	↓	
↓			99	↓	A	B	↓	A	B	B	↓	H	H	H	↓	H	H	↓	H	L	B	↓	B	B	A	↓	↓	↓	↓	↓	
↓			100	↓	A	A	↓	A	A	B	↓	H	L	L	↓	L	L	↓	L	H	A	↓	A	B	B	↓	↓	↓	↓	↓	
↓			101	↓	B	B	↓	B	B	A	↓	L	↓	L	↓	H	↓	↓	H	L	B	↓	B	A	B	B	↓	↓	↓	↓	
↓			102	↓	B	A	A	B	A	↓	↓	L	↓	L	↓	H	↓	H	H	L	B	↓	A	B	A	A	↓	↓	↓	↓	
↓			103	↓	B	↓	B	B	↓	↓	↓	L	↓	H	↓	H	↓	L	H	L	A	↓	B	A	B	B	↓	↓	↓	↓	
↓			104	B	A	↓	A	A	↓	↓	↓	L	L	L	↓	L	L	H	L	H	↓	↓	A	B	A	↓	↓	↓	↓	↓	
↓			105	A	B	↓	B	B	↓	↓	↓	H	H	H	↓	H	H	L	H	↓	↓	↓	↓	B	A	↓	↓	↓	↓	↓	
↓			106	B	B	A	A	↓	A	↓	↓	L	L	L	↓	L	L	H	L	↓	↓	B	↓	A	B	B	↓	↓	↓	↓	
↓			107	A	A	B	A	↓	B	↓	B	H	H	H	↓	H	H	L	H	↓	↓	A	A	A	A	A	↓	↓	↓	↓	
↓			108	B	B	A	B	↓	B	↓	A	↓	↓	↓	↓	↓	H	H	L	↓	↓	A	B	B	B	B	↓	↓	↓	↓	
↓			109	B	A	B	↓	↓	A	A	B	↓	↓	↓	↓	↓	H	L	H	↓	↓	B	A	B	A	B	↓	↓	↓	↓	
↓			110	A	B	A	↓	B	B	B	A	H	↓	H	↓	↓	H	H	L	↓	↓	A	A	A	B	B	↓	↓	↓	↓	
↓			111	B	A	↓	B	A	A	A	A	L	H	L	↓	↓	L	↓	L	H	↓	A	A	B	A	A	↓	↓	↓	↓	
↓			112	B	A	↓	A	A	B	B	A	H	L	L	↓	H	↓	↓	H	L	A	B	B	B	B	B	↓	↓	↓	↓	
↓			113	A	B	A	A	A	B	A	B	L	L	L	↓	L	↓	H	L	H	B	B	↓	B	A	A	↓	↓	↓	↓	
↓			114	B	B	B	B	B	B	B	B	H	H	H	↓	L	↓	L	H	L	B	B	↓	A	B	A	↓	↓	↓	↓	
↓			115	B	A	A	A	A	A	B	A	H	L	H	↓	H	L	H	L	H	B	A	B	A	B	B	4.5 v	↓	↓	↓	
8 [2/3/]	Same tests, terminal conditions and limits as for subgroup 7, except T_A = 125°C and -55°C.																														
9 T_A = 25°C	t_{PHL1}	3003 (Fig 4)	116	4.5 v	IN	4.5 v	GND	GND	4.5 v	GND	GND	OUT			GND						4.5 v	4.5 v	4.5 v	4.5 v	4.5 v	4.5 v	5.0 v	$\overline{A}_0$ to $\overline{F}_0$	7	38	ns
↓	↓	↓	117	↓	4.5 v	↓	↓	↓	↓	↓	↓		OUT		↓						↓	↓	↓	4.5 v	↓	IN	↓	$\overline{A}_1$ to $\overline{F}_1$	↓	↓	↓
↓	↓	↓	118	↓	↓	↓	↓	↓	↓	↓	↓			OUT	↓						↓	↓	↓	IN	↓	4.5 v	↓	$\overline{A}_2$ to $\overline{F}_2$	↓	↓	↓
↓	↓	↓	119	↓	↓	↓	↓	↓	↓	↓	↓				↓	OUT					↓	IN	↓	4.5 v	↓	↓	↓	$\overline{A}_3$ to $\overline{F}_3$	↓	↓	↓
↓	↓	↓	120	IN	↓	↓	↓	↓	↓	↓	↓	OUT			↓						↓	4.5 v	↓	↓	↓	↓	↓	$\overline{B}_0$ to $\overline{F}_0$	↓	↓	↓
↓	↓	↓	121	4.5 v	↓	↓	↓	↓	↓	↓	↓		OUT		↓						↓	↓	↓	↓	IN	↓	↓	$\overline{B}_1$ to $\overline{F}_1$	↓	↓	↓
↓	↓	↓	122	↓	↓	↓	↓	↓	↓	↓	↓			OUT	↓						↓	↓	IN	↓	4.5 v	↓	↓	$\overline{B}_2$ to $\overline{F}_2$	↓	↓	↓
↓	↓	↓	123	↓	↓	↓	↓	↓	↓	↓	↓				↓	OUT					IN	↓	4.5 v	↓	4.5 v	↓	↓	$\overline{B}_3$ to $\overline{F}_3$	↓	↓	↓
↓	t_{PLH1}	↓	124	4.5 v	IN	4.5 v	GND	GND	4.5 v	GND	GND	OUT			↓						4.5 v	4.5 v	4.5 v	4.5 v	4.5 v	4.5 v	↓	$\overline{A}_0$ to $\overline{F}_0$	7	50	ns
↓	↓	↓	125	↓	4.5 v	↓	↓	↓	↓	↓	↓		OUT		↓						↓	↓	↓	4.5 v	↓	IN	↓	$\overline{A}_1$ to $\overline{F}_1$	↓	↓	↓
↓	↓	↓	126	↓	↓	↓	↓	↓	↓	↓	↓			OUT	↓						↓	↓	↓	IN	↓	4.5 v	↓	$\overline{A}_2$ to $\overline{F}_2$	↓	↓	↓
↓	↓	↓	127	↓	↓	↓	↓	↓	↓	↓	↓				↓	OUT					↓	IN	↓	4.5 v	↓	↓	↓	$\overline{A}_3$ to $\overline{F}_3$	↓	↓	↓
↓	↓	↓	128	IN	↓	↓	↓	↓	↓	↓	↓	OUT			↓						↓	4.5 v	↓	↓	↓	↓	↓	$\overline{B}_0$ to $\overline{F}_0$	↓	↓	↓
↓	↓	↓	129	4.5 v	↓	↓	↓	↓	↓	↓	↓		OUT		↓						↓	↓	↓	↓	IN	↓	↓	$\overline{B}_1$ to $\overline{F}_1$	↓	↓	↓
↓	↓	↓	130	↓	↓	↓	↓	↓	↓	↓	↓			OUT	↓						↓	↓	IN	↓	4.5 v	↓	↓	$\overline{B}_2$ to $\overline{F}_2$	↓	↓	↓
↓	↓	↓	131	↓	↓	↓	↓	↓	↓	↓	↓				↓	OUT					IN	↓	4.5 v	↓	4.5 v	↓	↓	$\overline{B}_3$ to $\overline{F}_3$	↓	↓	↓

See notes at end of table for device type 01.

TABLE III. Group A inspection for device type 01 [1/] - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case J, K, L, Z	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Meas. terminal	Test limits		
			Test No.	$\overline{B}_0$	$\overline{A}_0$	S_3	S_2	S_1	S_0	C_n	M	$\overline{F}_0$	$\overline{F}_1$	$\overline{F}_2$	GND	$\overline{F}_3$	A=B	$\overline{P}$	C_{n+4}	$\overline{G}$	$\overline{B}_3$	$\overline{A}_3$	$\overline{B}_2$	$\overline{A}_2$	$\overline{B}_1$	$\overline{A}_1$	VCC		Min	Max	Unit
9 T_A = 25°C	t_{PHL2}	3003 (Fig 4)	132 133 134 135 136 137 138 139	GND IN GND	IN 4.5 v	GND	4.5 v	4.5 v	GND	GND	GND	OUT OUT	OUT OUT	OUT OUT	GND	OUT OUT					GND IN	4.5 v IN 4.5 v	GND IN GND	4.5 v 4.5 v IN 4.5 v	GND IN GND	4.5 v IN 4.5 v	5.0 v	$\overline{A}_0$ to $\overline{F}_0$ $\overline{A}_1$ to $\overline{F}_1$ $\overline{A}_2$ to $\overline{F}_2$ $\overline{A}_3$ to $\overline{F}_3$ $\overline{B}_0$ to $\overline{F}_0$ $\overline{B}_1$ to $\overline{F}_1$ $\overline{B}_2$ to $\overline{F}_2$ $\overline{B}_3$ to $\overline{F}_3$	7	40	ns
	t_{PLH2}		140 141 142 143 144 145 146 147	GND IN GND	IN 4.5 v	GND	4.5 v	4.5 v	GND	GND	GND	OUT OUT	OUT OUT	OUT OUT		OUT OUT					GND IN	4.5 v IN 4.5 v	GND IN GND	4.5 v 4.5 v IN 4.5 v	GND IN GND	4.5 v IN 4.5 v		$\overline{A}_0$ to $\overline{F}_0$ $\overline{A}_1$ to $\overline{F}_1$ $\overline{A}_2$ to $\overline{F}_2$ $\overline{A}_3$ to $\overline{F}_3$ $\overline{B}_0$ to $\overline{F}_0$ $\overline{B}_1$ to $\overline{F}_1$ $\overline{B}_2$ to $\overline{F}_2$ $\overline{B}_3$ to $\overline{F}_3$	7	56	ns
	t_{PHL3}		148 149 150 151 152 153 154 155	4.5 v GND IN GND	IN GND 4.5 v GND	4.5 v 4.5 v	GND	GND	4.5 v	GND	GND								OUT			GND 4.5 v GND IN	GND IN GND 4.5 v	GND GND 4.5 v GND GND GND IN GND	GND GND IN GND GND GND 4.5 v GND	GND 4.5 v GND GND IN GND GND GND	GND IN GND GND 4.5 v GND GND GND		$\overline{A}_0$ to $\overline{P}$ $\overline{A}_1$ to $\overline{P}$ $\overline{A}_2$ to $\overline{P}$ $\overline{A}_3$ to $\overline{P}$ $\overline{B}_0$ to $\overline{P}$ $\overline{B}_1$ to $\overline{P}$ $\overline{B}_2$ to $\overline{P}$ $\overline{B}_3$ to $\overline{P}$	7	29	ns
	t_{PLH3}		156 157 158 159 160 161 162 163	4.5 v GND IN GND	IN GND 4.5 v GND	4.5 v	GND	GND	4.5 v	GND	GND								OUT			GND 4.5 v GND IN	GND IN GND 4.5 v	GND GND 4.5 v GND GND GND IN GND	GND GND IN GND GND GND 4.5 v GND	GND 4.5 v GND GND IN GND GND GND	GND IN GND GND 4.5 v GND GND GND		$\overline{A}_0$ to $\overline{P}$ $\overline{A}_1$ to $\overline{P}$ $\overline{A}_2$ to $\overline{P}$ $\overline{A}_3$ to $\overline{P}$ $\overline{B}_0$ to $\overline{P}$ $\overline{B}_1$ to $\overline{P}$ $\overline{B}_2$ to $\overline{P}$ $\overline{B}_3$ to $\overline{P}$	7	23	ns
	t_{PHL4}		164 165 166 167 168 169 170 171	GND IN GND	IN GND 4.5 v GND	GND	4.5 v	4.5 v	GND	GND	GND								OUT			GND IN GND	GND IN GND	GND IN GND	GND GND IN GND 4.5 v GND	GND IN GND GND	GND IN GND 4.5 v GND GND		$\overline{A}_0$ to $\overline{P}$ $\overline{A}_1$ to $\overline{P}$ $\overline{A}_2$ to $\overline{P}$ $\overline{A}_3$ to $\overline{P}$ $\overline{B}_0$ to $\overline{P}$ $\overline{B}_1$ to $\overline{P}$ $\overline{B}_2$ to $\overline{P}$ $\overline{B}_3$ to $\overline{P}$	7	30	ns
	t_{PLH4}		172 173 174 175 176 177 178 179	GND IN GND	IN GND 4.5 v GND	GND	4.5 v	4.5 v	GND	GND	GND								OUT			GND IN GND	GND IN GND	GND IN GND	GND GND IN GND 4.5 v GND	GND IN GND GND	GND IN GND 4.5 v GND GND		$\overline{A}_0$ to $\overline{P}$ $\overline{A}_1$ to $\overline{P}$ $\overline{A}_2$ to $\overline{P}$ $\overline{A}_3$ to $\overline{P}$ $\overline{B}_0$ to $\overline{P}$ $\overline{B}_1$ to $\overline{P}$ $\overline{B}_2$ to $\overline{P}$ $\overline{B}_3$ to $\overline{P}$	7	30	ns

See notes at end of table for device type 01.

TABLE III. Group A inspection for device type 01 1/ - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case J, K, L, Z	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Meas. terminal	Test limits		
			Test No.	$\overline{B}_0$	$\overline{A}_0$	S_3	S_2	S_1	S_0	C_n	M	$\overline{F}_0$	$\overline{F}_1$	$\overline{F}_2$	GND	$\overline{F}_3$	A=B	$\overline{P}$	C_{n+4}	$\overline{G}$	$\overline{B}_3$	$\overline{A}_3$	$\overline{B}_2$	$\overline{A}_2$	$\overline{B}_1$	$\overline{A}_1$	VCC		Min	Max	Unit
9 T_A = 25°C	$^tPHL5$	3003 (Fig 4)	180 181 182 183 184 185 186 187	GND 4.5 v ↓ IN 4.5 v ↓	IN GND ↓	4.5 v ↓	GND ↓	GND ↓	4.5 v ↓	GND ↓	GND ↓				GND ↓					OUT ↓	4.5 v ↓ GND 4.5 v ↓ IN	GND ↓ IN GND ↓	4.5 v 4.5 v GND 4.5 v ↓ IN 4.5 v	GND GND IN GND ↓	4.5 v GND 4.5 v ↓ IN 4.5 v 4.5 v	GND IN GND ↓	5.0 v ↓	$\overline{A}_0$ to $\overline{G}$ $\overline{A}_1$ to $\overline{G}$ $\overline{A}_2$ to $\overline{G}$ $\overline{A}_3$ to $\overline{G}$ $\overline{B}_0$ to $\overline{G}$ $\overline{B}_1$ to $\overline{G}$ $\overline{B}_2$ to $\overline{G}$ $\overline{B}_3$ to $\overline{G}$	7 ↓	25 ↓	ns ↓
	$^tPLH5$		188 189 190 191 192 193 194 195	GND 4.5 v ↓ IN 4.5 v ↓	IN GND ↓	4.5 v ↓	GND ↓	GND ↓	4.5 v ↓	GND ↓	GND ↓									OUT ↓	4.5 v ↓ GND 4.5 v ↓ IN	GND ↓ IN GND ↓	4.5 v 4.5 v GND 4.5 v ↓ IN 4.5 v	GND GND IN GND ↓	4.5 v GND 4.5 v ↓ IN 4.5 v 4.5 v	GND IN GND ↓		$\overline{A}_0$ to $\overline{G}$ $\overline{A}_1$ to $\overline{G}$ $\overline{A}_2$ to $\overline{G}$ $\overline{A}_3$ to $\overline{G}$ $\overline{B}_0$ to $\overline{G}$ $\overline{B}_1$ to $\overline{G}$ $\overline{B}_2$ to $\overline{G}$ $\overline{B}_3$ to $\overline{G}$	7 ↓	25 ↓	ns ↓
	$^tPHL6$		196 197 198 199 200 201 202 203	4.5 v GND ↓ IN GND ↓	IN GND ↓	GND ↓	4.5 v ↓	4.5 v ↓	GND ↓	GND ↓	GND ↓									OUT ↓	GND ↓ 4.5 v GND ↓ IN	GND ↓ IN GND ↓	GND GND 4.5 v GND ↓ IN GND	GND GND IN GND ↓	GND 4.5 v GND ↓ IN GND GND	GND IN GND ↓		$\overline{A}_0$ to $\overline{G}$ $\overline{A}_1$ to $\overline{G}$ $\overline{A}_2$ to $\overline{G}$ $\overline{A}_3$ to $\overline{G}$ $\overline{B}_0$ to $\overline{G}$ $\overline{B}_1$ to $\overline{G}$ $\overline{B}_2$ to $\overline{G}$ $\overline{B}_3$ to $\overline{G}$	7 ↓	30 ↓	ns ↓
	$^tPLH6$		204 205 206 207 208 209 210 211	4.5 v GND ↓ IN GND ↓	IN GND ↓	GND ↓	4.5 v ↓	4.5 v ↓	GND ↓	GND ↓	GND ↓									OUT ↓	GND ↓ 4.5 v GND ↓ IN	GND ↓ IN GND ↓	GND GND 4.5 v GND ↓ IN GND	GND GND IN GND ↓	GND 4.5 v GND ↓ IN GND GND	GND IN GND ↓		$\overline{A}_0$ to $\overline{G}$ $\overline{A}_1$ to $\overline{G}$ $\overline{A}_2$ to $\overline{G}$ $\overline{A}_3$ to $\overline{G}$ $\overline{B}_0$ to $\overline{G}$ $\overline{B}_1$ to $\overline{G}$ $\overline{B}_2$ to $\overline{G}$ $\overline{B}_3$ to $\overline{G}$	7 ↓	30 ↓	ns ↓
	$^tPHL7$ $^tPLH7$		212 213	GND GND	4.5 v 4.5 v	4.5 v 4.5 v	GND GND	GND GND	4.5 v 4.5 v	IN IN	GND GND	OUT OUT										GND GND	4.5 v 4.5 v	GND GND	4.5 v 4.5 v	GND GND	4.5 v 4.5 v			$\overline{C}_n$ to $\overline{F}_0$ $\overline{C}_n$ to $\overline{F}_0$	7 7	24 23	ns ns
	$^tPHL8$		214 215 216 217 218 219 220 221	GND ↓ IN GND ↓	IN 4.5 v ↓	GND ↓	4.5 v ↓	4.5 v ↓	GND ↓	GND ↓	GND ↓						OUT ↓					GND ↓ IN	4.5 v ↓ IN 4.5 v ↓	GND ↓ IN GND	4.5 v 4.5 v IN 4.5 v ↓	GND ↓ IN GND GND	4.5 v IN 4.5 v ↓			$\overline{A}_0$ to A=B $\overline{A}_1$ to A=B $\overline{A}_2$ to A=B $\overline{A}_3$ to A=B $\overline{B}_0$ to A=B $\overline{B}_1$ to A=B $\overline{B}_2$ to A=B $\overline{B}_3$ to A=B	7 ↓	54 ↓	ns ↓

See notes at end of table for device type 01.

TABLE III. Group A inspection for device type 01 1/ - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case J, K, L, Z	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Meas. terminal	Test limits		
			Test No.	$\overline{B}_0$	$\overline{A}_0$	S_3	S_2	S_1	S_0	C_n	M	$\overline{F}_0$	$\overline{F}_1$	$\overline{F}_2$	GND	$\overline{F}_3$	A=B	$\overline{P}$	C_{n+4}	$\overline{G}$	$\overline{B}_3$	$\overline{A}_3$	$\overline{B}_2$	$\overline{A}_2$	$\overline{B}_1$	$\overline{A}_1$	VCC		Min	Max	Unit
9 T_A = 25°C	t_{PLH8}	3003 (Fig 4)	222 223 224 225 226 227 228 229	GND ↓ IN GND	IN 4.5 v	GND	4.5 v	4.5 v	GND	GND	GND				GND		OUT				GND ↓ IN	4.5 v ↓ IN 4.5 v	GND ↓ IN GND	4.5 v 4.5 v IN 4.5 v	GND ↓ IN GND GND	4.5 v IN 4.5 v	5.0 v	$\overline{A}_0$ to A=B $\overline{A}_1$ to A=B $\overline{A}_2$ to A=B $\overline{A}_3$ to A=B $\overline{B}_0$ to A=B $\overline{B}_1$ to A=B $\overline{B}_2$ to A=B $\overline{B}_3$ to A=B	7	58	ns
	t_{PHL9} t_{PLH9}		230 231	GND GND	4.5 v 4.5 v	4.5 v 4.5 v	GND GND	GND GND	4.5 v 4.5 v	IN IN	GND GND								OUT		GND GND	4.5 v 4.5 v	GND GND	4.5 v 4.5 v	GND GND	4.5 v 4.5 v		C_n to C_{n+4} C_n to C_{n+4}	7 7	23 22	ns ns
	t_{PHL10} t_{PLH10}		232 233	4.5 v 4.5 v	4.5 v 4.5 v	GND GND	4.5 v 4.5 v	4.5 v 4.5 v	GND GND	IN IN	GND GND											4.5 v 4.5 v	4.5 v 4.5 v	4.5 v 4.5 v	4.5 v 4.5 v	4.5 v 4.5 v	4.5 v 4.5 v		C_n to C_{n+4} C_n to C_{n+4}	7 7	23 22	ns ns
	t_{PHL11}		234 235 236 237 238 239 240 241	GND 4.5 v ↓ IN 4.5 v	IN GND	4.5 v	GND	GND	4.5 v	GND	GND										4.5 v ↓ GND 4.5 v ↓ IN	GND ↓ IN GND	4.5 v 4.5 v GND 4.5 v ↓ IN 4.5 v	GND GND IN GND	4.5 v GND 4.5 v ↓ IN 4.5 v	GND IN GND		$\overline{A}_0$ to C_{n+4} $\overline{A}_1$ to C_{n+4} $\overline{A}_2$ to C_{n+4} $\overline{A}_3$ to C_{n+4} $\overline{B}_0$ to C_{n+4} $\overline{B}_1$ to C_{n+4} $\overline{B}_2$ to C_{n+4} $\overline{B}_3$ to C_{n+4}	7	34	ns
	t_{PLH11}		242 243 244 245 246 247 248 249	GND 4.5 v ↓ IN 4.5 v	IN GND	4.5 v	GND	GND	4.5 v	GND	GND										4.5 v ↓ GND 4.5 v ↓ IN	GND ↓ IN GND	4.5 v 4.5 v GND 4.5 v ↓ IN 4.5 v	GND GND IN GND	4.5 v GND 4.5 v ↓ IN 4.5 v	GND IN GND		$\overline{A}_0$ to C_{n+4} $\overline{A}_1$ to C_{n+4} $\overline{A}_2$ to C_{n+4} $\overline{A}_3$ to C_{n+4} $\overline{B}_0$ to C_{n+4} $\overline{B}_1$ to C_{n+4} $\overline{B}_2$ to C_{n+4} $\overline{B}_3$ to C_{n+4}	7	40	ns
	t_{PHL12}		250 251 252 253 254 255 256 257	4.5 v GND ↓ IN GND	IN GND	GND	4.5 v	4.5 v	GND	GND	GND										GND ↓ 4.5 v GND ↓ IN	GND ↓ IN GND	GND GND 4.5 v GND ↓ IN GND	GND GND IN GND	GND 4.5 v GND ↓ IN GND GND	GND IN GND		$\overline{A}_0$ to C_{n+4} $\overline{A}_1$ to C_{n+4} $\overline{A}_2$ to C_{n+4} $\overline{A}_3$ to C_{n+4} $\overline{B}_0$ to C_{n+4} $\overline{B}_1$ to C_{n+4} $\overline{B}_2$ to C_{n+4} $\overline{B}_3$ to C_{n+4}	7	40	ns
	t_{PLH12}		258 259 260 261 262 263 264 265	4.5 v GND ↓ IN GND	IN GND	GND	4.5 v	4.5 v	GND	GND	GND										GND ↓ 4.5 v GND ↓ IN	GND ↓ IN GND	GND GND 4.5 v GND ↓ IN GND	GND GND IN GND	GND 4.5 v GND ↓ IN GND GND	GND IN GND		$\overline{A}_0$ to C_{n+4} $\overline{A}_1$ to C_{n+4} $\overline{A}_2$ to C_{n+4} $\overline{A}_3$ to C_{n+4} $\overline{B}_0$ to C_{n+4} $\overline{B}_1$ to C_{n+4} $\overline{B}_2$ to C_{n+4} $\overline{B}_3$ to C_{n+4}	7	40	ns

See notes at end of table for device type 01.

TABLE III. Group A inspection for device type 01 1/ - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case J, K, L, Z	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Meas. terminal	Test limits		
			Test No.	$\overline{B}_0$	$\overline{A}_0$	S_3	S_2	S_1	S_0	C_n	M	$\overline{F}_0$	$\overline{F}_1$	$\overline{F}_2$	GND	$\overline{F}_3$	A=B	$\overline{P}$	C_{n+4}	$\overline{G}$	$\overline{B}_3$	$\overline{A}_3$	$\overline{B}_2$	$\overline{A}_2$	$\overline{B}_1$	$\overline{A}_1$	VCC		Min	Max	Unit
9 T_A = 25°C	t_{PHL13}	3003 (Fig 4)	266 267 268 269 270 271 272 273	GND IN GND	IN GND	GND	4.5 v	4.5 v	GND	GND	4.5 v	OUT OUT	OUT OUT	OUT OUT	GND	OUT OUT					GND IN	GND IN GND	GND IN GND	GND GND IN GND	GND IN GND GND	GND IN GND	5.0 v	$\overline{A}_0$ to $\overline{F}_0$ $\overline{A}_1$ to $\overline{F}_1$ $\overline{A}_2$ to $\overline{F}_2$ $\overline{A}_3$ to $\overline{F}_3$ $\overline{B}_0$ to $\overline{F}_0$ $\overline{B}_1$ to $\overline{F}_1$ $\overline{B}_2$ to $\overline{F}_2$ $\overline{B}_3$ to $\overline{F}_3$	7	36	ns
	t_{PLH13}		274 275 276 277 278 279 280 281	GND IN GND	IN GND			4.5 v	GND	GND	4.5 v	OUT OUT	OUT OUT	OUT OUT		OUT OUT					GND IN	GND IN GND	GND IN GND	GND GND IN GND	GND IN GND GND	GND IN GND		$\overline{A}_0$ to $\overline{F}_0$ $\overline{A}_1$ to $\overline{F}_1$ $\overline{A}_2$ to $\overline{F}_2$ $\overline{A}_3$ to $\overline{F}_3$ $\overline{B}_0$ to $\overline{F}_0$ $\overline{B}_1$ to $\overline{F}_1$ $\overline{B}_2$ to $\overline{F}_2$ $\overline{B}_3$ to $\overline{F}_3$	7	50	ns
10 T_A=125° C	t_{PHL1}		282 283 284 285 286 287 288 289	4.5 v IN 4.5 v	IN 4.5 v	4.5 v	GND	GND	4.5 v	GND	GND	OUT OUT	OUT OUT	OUT OUT		OUT OUT					4.5 v IN	4.5 v IN 4.5 v	4.5 v IN 4.5 v	4.5 v 4.5 v IN 4.5 v	4.5 v IN 4.5 v 4.5 v	4.5 v IN 4.5 v		$\overline{A}_0$ to $\overline{F}_0$ $\overline{A}_1$ to $\overline{F}_1$ $\overline{A}_2$ to $\overline{F}_2$ $\overline{A}_3$ to $\overline{F}_3$ $\overline{B}_0$ to $\overline{F}_0$ $\overline{B}_1$ to $\overline{F}_1$ $\overline{B}_2$ to $\overline{F}_2$ $\overline{B}_3$ to $\overline{F}_3$	7	46	ns
	t_{PHL1}		290 291 292 293 294 295 296 297	4.5 v IN 4.5 v	IN 4.5 v	4.5 v	GND	GND	4.5 v	GND	GND	OUT OUT	OUT OUT	OUT OUT		OUT OUT					4.5 v IN	4.5 v IN 4.5 v	4.5 v IN 4.5 v	4.5 v 4.5 v IN 4.5 v	4.5 v IN 4.5 v 4.5 v	4.5 v IN 4.5 v		$\overline{A}_0$ to $\overline{F}_0$ $\overline{A}_1$ to $\overline{F}_1$ $\overline{A}_2$ to $\overline{F}_2$ $\overline{A}_3$ to $\overline{F}_3$ $\overline{B}_0$ to $\overline{F}_0$ $\overline{B}_1$ to $\overline{F}_1$ $\overline{B}_2$ to $\overline{F}_2$ $\overline{B}_3$ to $\overline{F}_3$	7	60	ns
	t_{PHL2}		298 299 300 301 302 303 304 305	GND IN GND	IN 4.5 v	GND	4.5 v	4.5 v	GND	GND	GND	OUT OUT	OUT OUT	OUT OUT		OUT OUT					GND IN	4.5 v IN 4.5 v	GND IN GND	4.5 v 4.5 v IN 4.5 v	GND IN GND GND	4.5 v IN 4.5 v		$\overline{A}_0$ to $\overline{F}_0$ $\overline{A}_1$ to $\overline{F}_1$ $\overline{A}_2$ to $\overline{F}_2$ $\overline{A}_3$ to $\overline{F}_3$ $\overline{B}_0$ to $\overline{F}_0$ $\overline{B}_1$ to $\overline{F}_1$ $\overline{B}_2$ to $\overline{F}_2$ $\overline{B}_3$ to $\overline{F}_3$	7	49	ns
	t_{PLH2}		306 307 308 309 310 311 312 313	GND IN GND	IN 4.5 v	GND	4.5 v	4.5 v	GND	GND	GND	OUT OUT	OUT OUT	OUT OUT		OUT OUT					GND IN	4.5 v IN 4.5 v	GND IN GND	4.5 v 4.5 v IN 4.5 v	GND IN GND GND	4.5 v IN 4.5 v		$\overline{A}_0$ to $\overline{F}_0$ $\overline{A}_1$ to $\overline{F}_1$ $\overline{A}_2$ to $\overline{F}_2$ $\overline{A}_3$ to $\overline{F}_3$ $\overline{B}_0$ to $\overline{F}_0$ $\overline{B}_1$ to $\overline{F}_1$ $\overline{B}_2$ to $\overline{F}_2$ $\overline{B}_3$ to $\overline{F}_3$	7	69	ns

See notes at end of table for device type 01.

TABLE III. Group A inspection for device type 01 1/ - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case J, K, L, Z Test No.	1 $\overline{B}_0$	2 $\overline{A}_0$	3 S_3	4 S_2	5 S_1	6 S_0	7 C_n	8 M	9 $\overline{F}_0$	10 $\overline{F}_1$	11 $\overline{F}_2$	12 GND	13 $\overline{F}_3$	14 A=B	15 $\overline{P}$	16 C_{n+4}	17 $\overline{G}$	18 $\overline{B}_3$	19 $\overline{A}_3$	20 $\overline{B}_2$	21 $\overline{A}_2$	22 $\overline{B}_1$	23 $\overline{A}_1$	24 VCC	Meas. terminal	Test limits Min	Max	Unit
10 T_A=125°C	t_{PHL3}	3003 (Fig 4)	314	4.5 v	IN	4.5 v	GND	GND	4.5 v	GND	GND				GND			OUT			GND	GND	GND	GND	GND	GND	5.0 v	$\overline{A}_0$ to $\overline{P}$	7	40	ns
			315	GND	GND																		GND	4.5 v	4.5 v	IN		$\overline{A}_1$ to $\overline{P}$			
			316																		4.5 v	IN	4.5 v	IN	GND	GND		$\overline{A}_2$ to $\overline{P}$			
			317																		GND	GND	GND	GND	GND	GND		$\overline{A}_3$ to $\overline{P}$			
			318	IN	4.5 v	4.5 v															GND	GND	GND	GND	IN	4.5 v		$\overline{B}_0$ to $\overline{P}$			
			319	GND	GND																IN	IN	IN	4.5 v	GND	GND		$\overline{B}_1$ to $\overline{P}$			
			320																				GND	GND	GND	GND		$\overline{B}_2$ to $\overline{P}$			
			321																									$\overline{B}_3$ to $\overline{P}$			
*	t_{PLH3}		322	4.5 v	IN	4.5 v	GND	GND	4.5 v	GND	GND							OUT			GND	GND	GND	GND	GND	GND		$\overline{A}_0$ to $\overline{P}$	7	27	ns
			323	GND	GND																		GND	GND	4.5 v	IN		$\overline{A}_1$ to $\overline{P}$			
			324																		4.5 v	GND	4.5 v	IN	GND	GND		$\overline{A}_2$ to $\overline{P}$			
			325																		GND	IN	GND	GND	GND	GND		$\overline{A}_3$ to $\overline{P}$			
			326	IN	4.5 v																GND	GND	GND	GND	IN	4.5 v		$\overline{B}_0$ to $\overline{P}$			
			327	GND	GND																IN	IN	IN	4.5 v	GND	GND		$\overline{B}_1$ to $\overline{P}$			
			328																				GND	GND	GND	GND		$\overline{B}_2$ to $\overline{P}$			
			329																									$\overline{B}_3$ to $\overline{P}$			
	t_{PHL4}		330	GND	IN	GND	4.5 v	4.5 v	GND	GND	GND							OUT			GND	GND	GND	GND	GND	GND		$\overline{A}_0$ to $\overline{P}$	7	40	ns
			331		GND																			GND		IN		$\overline{A}_1$ to $\overline{P}$			
			332																			GND				GND		$\overline{A}_2$ to $\overline{P}$			
			333																					GND				$\overline{A}_3$ to $\overline{P}$			
			334	IN	4.5 v																	GND			IN	GND		$\overline{B}_0$ to $\overline{P}$			
			335	GND	GND																			4.5 v			4.5 v		$\overline{B}_1$ to $\overline{P}$			
			336																					GND			GND		$\overline{B}_2$ to $\overline{P}$			
			337																										$\overline{B}_3$ to $\overline{P}$			
	t_{PLH4}		338	GND	IN	GND	4.5 v	4.5 v	GND	GND	GND							OUT			GND	GND	GND	GND	GND	GND		$\overline{A}_0$ to $\overline{P}$	7	36	ns
			339		GND																			GND		IN		$\overline{A}_1$ to $\overline{P}$			
			340																			GND				GND		$\overline{A}_2$ to $\overline{P}$			
			341																					GND				$\overline{A}_3$ to $\overline{P}$			
			342	IN	4.5 v																	GND			IN	GND		$\overline{B}_0$ to $\overline{P}$			
			343	GND	GND																			4.5 v			4.5 v		$\overline{B}_1$ to $\overline{P}$			
			344																					GND			GND		$\overline{B}_2$ to $\overline{P}$			
			345																										$\overline{B}_3$ to $\overline{P}$			
	t_{PHL5}		346	GND	IN	4.5 v	GND	GND	4.5 v	GND	GND									OUT	4.5 v	GND	4.5 v	GND	4.5 v	GND		$\overline{A}_0$ to $\overline{G}$	7	30	ns
			347	4.5 v	GND																		4.5 v	GND	GND	IN		$\overline{A}_1$ to $\overline{G}$			
			348																		4.5 v	IN	4.5 v	IN	GND	GND		$\overline{A}_2$ to $\overline{G}$			
			349																		GND	GND	GND	GND	4.5 v	GND		$\overline{A}_3$ to $\overline{G}$			
			350	IN																	4.5 v	GND				IN		$\overline{B}_0$ to $\overline{G}$			
			351	4.5 v																	IN	IN				4.5 v		$\overline{B}_1$ to $\overline{G}$			
			352																									$\overline{B}_2$ to $\overline{G}$			
			353																									$\overline{B}_3$ to $\overline{G}$			
	t_{PLH5}		354	GND	IN	4.5 v	GND	GND	4.5 v	GND	GND									OUT	4.5 v	GND	4.5 v	GND	4.5 v	GND		$\overline{A}_0$ to $\overline{G}$	7	30	ns
			355	4.5 v	GND																		4.5 v	GND	GND	IN		$\overline{A}_1$ to $\overline{G}$			
			356																		4.5 v	IN	4.5 v	IN	GND	GND		$\overline{A}_2$ to $\overline{G}$			
			357																		GND	GND	GND	GND	4.5 v	GND		$\overline{A}_3$ to $\overline{G}$			
			358	IN																	4.5 v	GND				IN		$\overline{B}_0$ to $\overline{G}$			
			359	4.5 v																	IN	IN				4.5 v		$\overline{B}_1$ to $\overline{G}$			
			360																									$\overline{B}_2$ to $\overline{G}$			
			361																									$\overline{B}_3$ to $\overline{G}$			

See notes at end of table for device type 01.

TABLE III. Group A inspection for device type 01 [1/] - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case J, K, L, Z Test No.	1 $\overline{B}_0$	2 $\overline{A}_0$	3 S_3	4 S_2	5 S_1	6 S_0	7 C_n	8 M	9 $\overline{F}_0$	10 $\overline{F}_1$	11 $\overline{F}_2$	12 GND	13 $\overline{F}_3$	14 A=B	15 $\overline{P}$	16 C_{n+4}	17 $\overline{G}$	18 $\overline{B}_3$	19 $\overline{A}_3$	20 $\overline{B}_2$	21 $\overline{A}_2$	22 $\overline{B}_1$	23 $\overline{A}_1$	24 VCC	Meas. terminal	Test limits Min	Max	Unit
10 T_A=125°C	t_{PHL6}	3003 (Fig 4)	362	4.5 v	IN	GND	4.5 v	4.5 v	GND	GND	GND				GND					OUT	GND	GND	GND	GND	GND	GND	GND	5.0 v	$\overline{A}_0$ to $\overline{G}$	7	40	ns
			363	GND	GND																4.5 v		GND	4.5 v	4.5 v	IN			$\overline{A}_1$ to $\overline{G}$			
			364																		GND		4.5 v	IN	GND				$\overline{A}_2$ to $\overline{G}$			
			365																		IN		GND	GND					$\overline{A}_3$ to $\overline{G}$			
			366																				IN						$\overline{B}_0$ to $\overline{G}$			
			367																				GND						$\overline{B}_1$ to $\overline{G}$			
			368																										$\overline{B}_2$ to $\overline{G}$			
			369	IN																									$\overline{B}_3$ to $\overline{G}$			
	t_{PLH6}		370	4.5 v	IN	GND	4.5 v	4.5 v	GND	GND	GND				GND					OUT	GND	GND	GND	GND	GND	GND	GND		$\overline{A}_0$ to $\overline{G}$	7	40	ns
			371	GND	GND																4.5 v		GND	4.5 v	4.5 v	IN			$\overline{A}_1$ to $\overline{G}$			
			372																		GND		4.5 v	IN	GND				$\overline{A}_2$ to $\overline{G}$			
			373																		IN		GND	GND					$\overline{A}_3$ to $\overline{G}$			
			374																				IN						$\overline{B}_0$ to $\overline{G}$			
			375																				GND						$\overline{B}_1$ to $\overline{G}$			
			376																										$\overline{B}_2$ to $\overline{G}$			
			377	IN																									$\overline{B}_3$ to $\overline{G}$			
	t_{PHL7}		378	GND	4.5 v	4.5 v	GND	GND	4.5 v	IN	GND	OUT									GND	4.5 v	GND	4.5 v	GND	4.5 v			C_n to $\overline{F}_0$	7	25	ns
	t_{PLH7}		379	GND	4.5 v	4.5 v	GND	GND	4.5 v	IN	GND	OUT									GND	4.5 v	GND	4.5 v	GND	4.5 v			C_n to $\overline{F}_0$	7	27	ns
	t_{PHL8}		380	GND	IN	GND	4.5 v	4.5 v	GND	GND	GND						OUT				GND	4.5 v	GND	4.5 v	GND	4.5 v			$\overline{A}_0$ to A=B	7	76	ns
			381		4.5 v																	IN		4.5 v		IN			$\overline{A}_1$ to A=B			
			382																			4.5 v		IN		4.5 v			$\overline{A}_2$ to A=B			
			383																					4.5 v					$\overline{A}_3$ to A=B			
			384																							IN			$\overline{B}_0$ to A=B			
			385																							4.5 v			$\overline{B}_1$ to A=B			
			386																										$\overline{B}_2$ to A=B			
			387	IN																	IN		IN		IN				$\overline{B}_3$ to A=B			
	t_{PLH8}		388	GND	IN	GND	4.5 v	4.5 v	GND	GND	GND										GND	4.5 v	GND	4.5 v	GND	4.5 v			$\overline{A}_0$ to A=B	7	80	ns
			389		4.5 v																	IN		4.5 v		IN			$\overline{A}_1$ to A=B			
			390																			4.5 v		IN		4.5 v			$\overline{A}_2$ to A=B			
			391																					4.5 v					$\overline{A}_3$ to A=B			
			392																							IN			$\overline{B}_0$ to A=B			
			393																							4.5 v			$\overline{B}_1$ to A=B			
			394																										$\overline{B}_2$ to A=B			
			395	IN																	IN		IN		IN				$\overline{B}_3$ to A=B			
	t_{PHL9}		396	GND	4.5 v	4.5 v	GND	GND	4.5 v	IN	GND								OUT		GND	4.5 v	GND	4.5 v	GND	4.5 v			C_n to C_{n+4}	7	30	ns
	t_{PLH9}		397	GND	4.5 v	4.5 v	GND	GND	4.5 v	IN	GND										GND	4.5 v	GND	4.5 v	GND	4.5 v			C_n to C_{n+4}	7	28	ns
	t_{PHL10}		398	4.5 v	4.5 v	GND	4.5 v	4.5 v	GND	IN	GND										4.5 v	4.5 v	4.5 v	4.5 v	4.5 v	4.5 v			C_n to C_{n+4}	7	30	ns
	t_{PLH10}		399	4.5 v	4.5 v	GND	4.5 v	4.5 v	GND	IN	GND										4.5 v	4.5 v	4.5 v	4.5 v	4.5 v	4.5 v			C_n to C_{n+4}	7	28	ns
	t_{PHL11}		400	GND	IN	4.5 v	GND	GND	4.5 v	GND	GND										4.5 v	GND	4.5 v	GND	4.5 v	GND			$\overline{A}_0$ to C_{n+4}	7	41	ns
			401	4.5 v	GND																								$\overline{A}_1$ to C_{n+4}			
			402																		GND		4.5 v	GND	4.5 v	IN			$\overline{A}_2$ to C_{n+4}			
			403																		4.5 v		GND	IN	GND				$\overline{A}_3$ to C_{n+4}			
			404																							IN			$\overline{B}_0$ to C_{n+4}			
			405																							4.5 v			$\overline{B}_1$ to C_{n+4}			
			406																										$\overline{B}_2$ to C_{n+4}			
			407	IN																	IN		IN		IN				$\overline{B}_3$ to C_{n+4}			

See notes at end of table for device type 01.

TABLE III. Group A inspection for device type 01 1/ - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case J, K, L, Z	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Meas. terminal	Test limits		
			Test No.	$\overline{B}_0$	$\overline{A}_0$	S_3	S_2	S_1	S_0	C_n	M	$\overline{F}_0$	$\overline{F}_1$	$\overline{F}_2$	GND	$\overline{F}_3$	A=B	$\overline{P}$	C_{n+4}	$\overline{G}$	$\overline{B}_3$	$\overline{A}_3$	$\overline{B}_2$	$\overline{A}_2$	$\overline{B}_1$	$\overline{A}_1$	VCC		Min	Max	Unit
10 T_A=125°C	t_{PLH11}	3003 (Fig 4)	408 409 410 411 412 413 414 415	GND 4.5 v ↓ IN 4.5 v ↓	IN GND ↓	4.5 v ↓	GND ↓	GND ↓	4.5 v ↓	GND ↓	GND ↓				GND ↓				OUT ↓		4.5 v ↓ GND 4.5 v ↓ IN	GND ↓ IN GND ↓	4.5 v 4.5 v GND 4.5 v ↓ IN 4.5 v	GND GND IN GND ↓	4.5 v GND 4.5 v ↓ IN 4.5 v 4.5 v	GND IN GND ↓	5.0 v ↓	$\overline{A}_0$ to C_{n+4} $\overline{A}_1$ to C_{n+4} $\overline{A}_2$ to C_{n+4} $\overline{A}_3$ to C_{n+4} $\overline{B}_0$ to C_{n+4} $\overline{B}_1$ to C_{n+4} $\overline{B}_2$ to C_{n+4} $\overline{B}_3$ to C_{n+4}	7 ↓	50 ↓	ns ↓
	t_{PHL12}		416 417 418 419 420 421 422 423	4.5 v GND ↓ IN GND ↓	IN GND ↓	GND ↓	4.5 v ↓	4.5 v ↓	GND ↓	GND ↓	GND ↓								OUT ↓		GND ↓ 4.5 v GND ↓ IN	GND ↓ IN GND ↓	GND GND 4.5 v GND ↓ IN GND	GND GND IN GND ↓	GND 4.5 v GND ↓ IN GND GND	GND IN GND ↓		$\overline{A}_0$ to C_{n+4} $\overline{A}_1$ to C_{n+4} $\overline{A}_2$ to C_{n+4} $\overline{A}_3$ to C_{n+4} $\overline{B}_0$ to C_{n+4} $\overline{B}_1$ to C_{n+4} $\overline{B}_2$ to C_{n+4} $\overline{B}_3$ to C_{n+4}	7 ↓	50 ↓	ns ↓
	t_{PLH12}		424 425 426 427 428 429 430 431	4.5 v GND ↓ IN GND ↓	IN GND ↓	GND ↓	4.5 v ↓	4.5 v ↓	GND ↓	GND ↓	GND ↓								OUT ↓		GND ↓ 4.5 v GND ↓ IN	GND ↓ IN GND ↓	GND GND 4.5 v GND ↓ IN GND	GND GND IN GND ↓	GND 4.5 v GND ↓ IN GND GND	GND IN GND ↓		$\overline{A}_0$ to C_{n+4} $\overline{A}_1$ to C_{n+4} $\overline{A}_2$ to C_{n+4} $\overline{A}_3$ to C_{n+4} $\overline{B}_0$ to C_{n+4} $\overline{B}_1$ to C_{n+4} $\overline{B}_2$ to C_{n+4} $\overline{B}_3$ to C_{n+4}	7 ↓	50 ↓	ns ↓
	t_{PHL13}		432 433 434 435 436 437 438 439	GND ↓ IN GND ↓	IN GND ↓	GND ↓	4.5 v ↓	4.5 v ↓	GND ↓	GND ↓	4.5 v ↓	OUT ↓ OUT	OUT ↓ OUT	OUT ↓ OUT	GND ↓	OUT ↓ OUT						GND ↓ IN	GND ↓ IN GND ↓	GND ↓ IN GND	GND GND IN GND ↓	GND ↓ IN GND GND	GND IN GND ↓		$\overline{A}_0$ to $\overline{F}_0$ $\overline{A}_1$ to $\overline{F}_1$ $\overline{A}_2$ to $\overline{F}_2$ $\overline{A}_3$ to $\overline{F}_3$ $\overline{B}_0$ to $\overline{F}_0$ $\overline{B}_1$ to $\overline{F}_1$ $\overline{B}_2$ to $\overline{F}_2$ $\overline{B}_3$ to $\overline{F}_3$	7 ↓	49 ↓	ns ↓
	t_{PLH13}		440 441 442 443 444 445 446 447	GND ↓ IN GND ↓	IN GND ↓			4.5 v ↓	GND ↓	GND ↓	4.5 v ↓	OUT ↓ OUT	OUT ↓ OUT	OUT ↓ OUT	↓	OUT ↓ OUT						GND ↓ IN	GND ↓ IN GND ↓	GND ↓ IN GND	GND GND IN GND ↓	GND ↓ IN GND GND	GND IN GND ↓		$\overline{A}_0$ to $\overline{F}_0$ $\overline{A}_1$ to $\overline{F}_1$ $\overline{A}_2$ to $\overline{F}_2$ $\overline{A}_3$ to $\overline{F}_3$ $\overline{B}_0$ to $\overline{F}_0$ $\overline{B}_1$ to $\overline{F}_1$ $\overline{B}_2$ to $\overline{F}_2$ $\overline{B}_3$ to $\overline{F}_3$	7 ↓	69 ↓	ns ↓
11	Same tests, terminal conditions and limits as subgroup 10, except T_A = -55° C.																														

1/ Terminal conditions (Pins not designated may be H $\geq$ 2.0 V, or L $\leq$ 0.8 V, or open).
2/ Tests shall be performed in sequence.
3/ Input voltages shown are: A = 2.0 volts minimum and B = 0.8 volts maximum.
4/ Output voltages shall be either: (a) H = 2.4 v, minimum and L = 0.4 v, maximum when using a high speed checker double comparator; or (b) H $\geq$ 1.5 v and L < 1.5 v when using a high speed checker single comparator.

TABLE III. Group A inspection for device type 02. 1/

Subgroup	Symbol	MIL-STD-883 method	Case E, F Test No.	1 $\overline{G}_1$	2 $\overline{P}_1$	3 $\overline{G}_0$	4 $\overline{P}_0$	5 $\overline{G}_3$	6 $\overline{P}_3$	7 $\overline{P}$	8 GND	9 C_{n+Z}	10 $\overline{G}$	11 C_{n+Y}	12 C_{n+X}	13 C_n	14 $\overline{G}_2$	15 $\overline{P}_2$	16 V_{CC}	Meas. terminal	Test limits Min	Max	Unit
1 T_A = 25°C	V_{OH}	3006	1		0.8 V		2.0 V		0.8 V	-0.8 mA	GND						0.8 V	4.5 V	$\overline{P}$	2.4		V
			2	2.0 V	2.0 V	2.0 V	2.0 V					-0.8 mA				0.8 V	0.8 V	2.0 V		C_{n+Z}			
			3	0.8 V	0.8 V	0.8 V		2.0 V	2.0 V				-0.8 mA				0.8 V	0.8 V		$\overline{G}$			
			4	0.8 V	2.0 V	2.0 V	2.0 V							-0.8 mA		0.8 V				C_{n+Y}			
			5			0.8 V	2.0 V								-0.8 mA	0.8 V				C_{n+X}			
	V_{OL}	3007	6		0.8 V		0.8 V		0.8 V	16 mA								0.8 V		$\overline{P}$		0.4	
			7	0.8 V	0.8 V	0.8 V	0.8 V					16 mA				2.0 V	2.0 V	2.0 V		C_{n+Z}			
			8	2.0 V	2.0 V	2.0 V		0.8 V	2.0 V				16 mA				2.0 V	2.0 V		$\overline{G}$			
			9	2.0 V	2.0 V	0.8 V								16 mA		2.0 V				C_{n+Y}			
			10			2.0 V	2.0 V								16 mA	2.0 V				C_{n+X}			
	V_{IC}		11	-12 mA																$\overline{G}_1$		-1.5	
			12		-12 mA															$\overline{P}_1$			
			13			-12 mA														$\overline{G}_0$			
			14				-12 mA													$\overline{P}_0$			
			15					-12 mA												$\overline{G}_3$			
			16						-12 mA											$\overline{P}_3$			
			17													-12 mA				C_n			
			18														-12 mA			$\overline{G}_2$			
			19															-12 mA		$\overline{P}_2$			
	I_{IL7}	3009	20 CKT A	0.4 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V							GND	5.5 V	5.5 V	5.5 V	$\overline{G}_1$	-5.6	-12.8	mA
	I_{IL7}		20 CKT B, C	0.4 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V							GND	5.5 V	5.5 V		$\overline{G}_1$	-8.0	-16.0	
	I_{IL8}		21 CKT A	5.5 V	0.4 V	5.5 V	5.5 V									5.5 V				$\overline{P}_1$	-2.8	-6.4	
	I_{IL8}		21 CKT B, C	5.5 V	0.4 V	5.5 V	5.5 V									5.5 V				$\overline{P}_1$	-4.0	-8.0	
	I_{IL9}		22 CKT A		5.5 V	0.4 V										GND				$\overline{G}_0$	-4.9	-11.2	
	I_{IL9}		22 CKT B, C			0.4 V										GND				$\overline{G}_0$	-7.0	-14.0	
	I_{IL10}		23 CKT A			5.5 V	0.4 V									5.5 V				$\overline{P}_0$	-2.8	-6.4	
	I_{IL10}		23 CKT B, C				0.4 V									5.5 V				$\overline{P}_0$	-4.0	-8.0	
	I_{IL11}		24 CKT A				5.5 V	0.4 V												$\overline{G}_3$	-2.8	-6.4	
	I_{IL11}		24 CKT B, C					0.4 V												$\overline{G}_3$	-4.0	-8.0	
	I_{IL12}		25 CKT A					5.5 V	0.4 V											$\overline{P}_3$	-1.4	-3.2	
	I_{IL12}		25 CKT B, C						0.4 V											$\overline{P}_3$	-2.0	-4.0	
	I_{IL13}		26 CKT A						5.5 V							0.4 V				C_n	-0.7	-1.6	
	I_{IL13}		26 CKT B, C													0.4 V				C_n	-1.0	-2.4	
	I_{IL14}		27 CKT A													GND	0.4 V			$\overline{G}_2$	-4.9	-11.2	
	I_{IL14}		27 CKT B, C													GND	0.4 V			$\overline{G}_2$	-7.0	-14.0	
	I_{IL15}		28 CKT A													5.5 V	5.5 V	0.4 V		$\overline{P}_2$	-2.1	-4.8	
	I_{IL15}		28 CKT B, C													5.5 V	5.5 V	0.4 V		$\overline{P}_2$	-3.0	-6.0	
	I_{IH11}	3010	29 CKT A	2.4 V	GND	GND	GND	GND	GND		GND					5.5 V	GND	GND	5.5 V	$\overline{G}_1$		320	μA
	I_{IH11}	3010	29 CKT B, C	2.4 V	GND	GND	GND	GND	GND		GND					5.5 V	GND	GND	5.5 V	$\overline{G}_1$		400	μA

See notes at end of device type 02.

TABLE III. Group A inspection for device type 02 1/ - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case E, F Test No.	1 $\overline{G}_1$	2 $\overline{P}_1$	3 $\overline{G}_0$	4 $\overline{P}_0$	5 $\overline{G}_3$	6 $\overline{P}_3$	7 $\overline{P}$	8 GND	9 C_{n+Z}	10 $\overline{G}$	11 C_{n+Y}	12 C_{n+X}	13 C_n	14 $\overline{G}_2$	15 $\overline{P}_2$	16 V_{CC}	Meas. terminal	Test limits Min	Max	Unit
1 T_A = 25 °C	I_{IH12}	3010	30 CKT A	GND	2.4 V	GND	GND	GND	GND		GND					GND	GND	GND	5.5 V	$\overline{P}_1$		160	µA
	I_{IH12}		30 CKT B, C		2.4 V	GND										GND				$\overline{P}_1$		200	
	I_{IH13}		31 CKT A		GND	2.4 V										5.5 V				$\overline{G}_0$		280	
	I_{IH13}		31 CKT B, C			2.4 V										5.5 V				$\overline{G}_0$		350	
	I_{IH14}		32 CKT A			GND	2.4 V									GND				$\overline{P}_0$		160	
	I_{IH14}		32 CKT B, C				2.4 V													$\overline{P}_0$		200	
	I_{IH15}		33 CKT A				GND	2.4 V												$\overline{G}_3$		160	
	I_{IH15}		33 CKT B, C					2.4 V												$\overline{G}_3$		200	
	I_{IH16}		34 CKT A					GND	2.4 V											$\overline{P}_3$		80	
	I_{IH16}		34 CKT B, C						2.4 V											$\overline{P}_3$		100	
	I_{IH17}		35 CKT A						GND							2.4 V				C_n		40	
	I_{IH17}		35 CKT B, C													2.4 V				C_n		70	
	I_{IH18}		36 CKT A													5.5 V	2.4 V			$\overline{G}_2$		280	
	I_{IH18}		36 CKT B, C													5.5 V	2.4 V			$\overline{G}_2$		350	
	I_{IH19}		37 CKT A													GND	GND	2.4 V		$\overline{P}_2$		120	
	I_{IH19}		37 CKT B, C													GND	GND	2.4 V		$\overline{P}_2$		150	
	I_{IH20}		38	5.5 V		GND	GND	GND	GND							5.5 V	GND	GND		$\overline{G}_1$		800	
	I_{IH21}		39	GND	5.5 V	GND										GND				$\overline{P}_1$		400	
	I_{IH22}		40		GND	5.5 V										5.5 V				$\overline{G}_0$		700	
	I_{IH23}		41			GND	5.5 V									GND				$\overline{P}_0$		400	
	I_{IH24}		42				GND	5.5 V												$\overline{G}_3$		400	
	I_{IH25}		43					GND	5.5 V											$\overline{P}_3$		200	
	I_{IH26}		44						GND							5.5 V				C_n		160	
	I_{IH27}		45													5.5 V	5.5 V			$\overline{G}_2$		700	
	I_{IH28}		46													GND	GND	5.5 V		P_2		300	
	I_{OS4}	3011	47		5.5 V		5.5 V		5.5 V	GND								5.5 V		$\overline{P}$	-40	-100	mA
			48	GND	GND	GND	GND					GND				5.5 V	GND	GND		C_{n+Z}			
			49	5.5 V	5.5 V	5.5 V		5.5 V	5.5 V				GND				5.5 V	5.5 V		$\overline{G}$			
			50	GND	GND	GND	GND							GND		5.5 V				C_{n+Y}			
			51			GND	GND								GND	5.5 V				C_{n+X}			
	I_{CCL2}	3005	52	5.5 V	GND	5.5 V	GND	GND	GND							GND	5.5 V	GND		V_{CC}		65	
	I_{CCH2}	3005	53 CKT A	GND	GND	5.5 V	GND	5.5 V	5.5 V							GND	GND	GND		V_{CC}		35	
	I_{CCH2}	3005	53 CKT B, C	GND	GND	GND	GND	5.5 V	5.5 V							GND	GND	GND		V_{CC}		55	
2	Same tests, terminal conditions and limits as for subgroup 1, except T_A = 125 ° and V_{IC} tests are omitted.																						
3	Same tests, terminal conditions and limits as for subgroup 1, except T_A = -55 ° and V_{IC} tests are omitted.																						

See notes at end of device type 02.

TABLE III. Group A inspection for device type 02 1/ - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case E, F Test No.	1 $\overline{G}_1$	2 $\overline{P}_1$	3 $\overline{G}_0$	4 $\overline{P}_0$	5 $\overline{G}_3$	6 $\overline{P}_3$	7 $\overline{P}$	8 GND	9 C_{n+Z}	10 $\overline{G}$	11 C_{n+Y}	12 C_{n+X}	13 C_n	14 $\overline{G}_2$	15 $\overline{P}_2$	16 V_{CC}	Meas. terminal	Test limits Min	Max	Unit
7 2/3/ T_A = 25 °C			54	B	B	B	B	B	B	L 4/	GND	H 4/	L 4/	H 4/	H 4/	B	B	B	4.5 V	All output	H or L as shown 4/		
			55	B	B	A	A	A	B	H		H	L	H	L	A	A						
			56	A	A	B	B	A	B			L	H	L	H	B							
			57	A	B	A		B	A			H	L	H	H	A							
			58	B	A			A	B				L	H	L	B							
			59	A	B				A				H	L	L	B	B						
			60	B		B	A		B			L	H	H	H	A	A	A					
			61	A		B						H	L	H	H	B	B	A					
			62			A						L	H	L	L	A	A	B					
			63			B						H	L	H	H	B	A	B					
			64			A	B					H		L	L	B	B	A					
			65		A	B	B	B				L			H	A	A	A					
			66		A	A	A	A				H	L		L	B	B	A					
			67		B	A	B	A		L		L	H		L	B	A	B					
8 2/3/	Same tests, terminal conditions and limits as for subgroup 7, except T_A = 125 and -55 °C.																						
9 T_A = 25 °C	t_{PLH1}	3003 (Fig 4)	68	4.5 V	GND	4.5 V	GND	4.5 V	4.5 V		GND				OUT	IN	4.5 V	GND	5.0 V	C_n to C_{n+X}	6	22	ns
	t_{PHL1}		69												OUT					C_n to C_{n+X}		24	
	t_{PLH1}		70											OUT						C_n to C_{n+Y}		22	
	t_{PHL1}		71											OUT						C_n to C_{n+Y}		24	
	t_{PLH1}		72									OUT								C_n to C_{n+Z}		22	
	t_{PHL1}		73									OUT								C_n to C_{n+Z}		24	
	t_{PLH2}		74				IN								OUT	4.5 V				$\overline{P}_0$ to C_{n+X}	3	16	
	t_{PHL2}		75				IN								OUT					$\overline{P}_0$ to C_{n+X}		21	
	t_{PLH2}		76				IN							OUT						$\overline{P}_0$ to C_{n+Y}		16	
	t_{PHL2}		77				IN							OUT						$\overline{P}_0$ to C_{n+Y}		21	
	t_{PLH2}		78				IN					OUT								$\overline{P}_0$ to C_{n+Z}		16	
	t_{PHL2}		79				IN					OUT								$\overline{P}_0$ to C_{n+Z}		21	
	t_{PLH2}		80		IN		GND							OUT						$\overline{P}_1$ to C_{n+Y}		16	

See notes at end of device type 02.

TABLE III. Group A inspection for device type 02 1/ - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits Min	Test limits Max	Unit
				$\overline{G}_1$	$\overline{P}_1$	$\overline{G}_0$	$\overline{P}_0$	$\overline{G}_3$	$\overline{P}_3$	$\overline{P}$	GND	C_{n+Z}	$\overline{G}$	C_{n+Y}	C_{n+X}	C_n	$\overline{G}_2$	$\overline{P}_2$	V_{CC}				
9 T_A = 25°C	t_{PHL2}	3003 (Fig 4)	81	4.5 V	IN	4.5 V	GND	4.5 V	4.5 V		GND			OUT		4.5 V	4.5 V	GND	5.0 V	$\overline{P}_1$ to C_{n+Y}	3	21	ns
	t_{PLH2}		82		IN							OUT								$\overline{P}_1$ to C_{n+Z}		16		
	t_{PHL2}		83		IN							OUT						IN		$\overline{P}_1$ to C_{n+Z}		21		
	t_{PLH2}		84		GND							OUT						IN		$\overline{P}_2$ to C_{n+Z}		16		
	t_{PHL2}		85									OUT						IN		$\overline{P}_2$ to C_{n+Z}		21		
	t_{PLH3}		86			IN									OUT	GND		GND		$\overline{G}_0$ to C_{n+X}		16		
	t_{PHL3}		87			IN									OUT					$\overline{G}_0$ to C_{n+X}		21		
	t_{PLH3}		88			IN								OUT						$\overline{G}_0$ to C_{n+Y}		16		
	t_{PHL3}		89			IN								OUT						$\overline{G}_0$ to C_{n+Y}		21		
	t_{PLH3}		90			IN						OUT								$\overline{G}_0$ to C_{n+2}		16		
	t_{PHL3}		91			IN						OUT								$\overline{G}_0$ to C_{n+2}		21		
	t_{PLH3}		92		$\overline{P}_1$	4.5 V								OUT						$\overline{G}_1$ to C_{n+Y}		16		
	t_{PHL3}		93		IN									OUT						$\overline{G}_1$ to C_{n+Y}		21		
	t_{PLH3}		94		IN							OUT								$\overline{G}_1$ to C_{n+Z}		16		
	t_{PHL3}		95		IN							OUT								$\overline{G}_1$ to C_{n+Z}		21		
	t_{PLH3}		96									OUT					IN			$\overline{G}_2$ to C_{n+Z}		16		
	t_{PHL3}		97									OUT					IN			$\overline{G}_2$ to C_{n+Z}		21		
	t_{PLH4}		98						GND				OUT			4.5 V	4.5 V			$\overline{P}_1$ to $\overline{G}$		21		
	t_{PHL4}		99		IN								OUT					IN		$\overline{P}_1$ to $\overline{G}$		25		
	t_{PLH4}		100		GND								OUT					IN		$\overline{P}_2$ to $\overline{G}$		21		
	t_{PHL4}		101						IN				OUT					IN		$\overline{P}_2$ to $\overline{G}$		25		
	t_{PLH4}		102						IN				OUT							$\overline{P}_3$ to $\overline{G}$		21		
	t_{PHL4}		103						GND				OUT					GND		$\overline{P}_3$ to $\overline{G}$		25		
	t_{PLH5}		104			IN							OUT							$\overline{G}_0$ to $\overline{G}$		21		
	t_{PHL5}		105			IN							OUT							$\overline{G}_0$ to $\overline{G}$		25		
	t_{PLH5}		106	IN		4.5 V							OUT							$\overline{G}_1$ to $\overline{G}$		21		

See notes at end of device type 02.

TABLE III. Group A inspection for device type 02 1/ - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits Min	Test limits Max	Test limits Unit
				$\overline{G}_1$	$\overline{P}_1$	$\overline{G}_0$	$\overline{P}_0$	$\overline{G}_3$	$\overline{P}_3$	$\overline{P}$	GND	C_{n+Z}	$\overline{G}$	C_{n+Y}	C_{n+X}	C_n	$\overline{G}_2$	$\overline{P}_2$	V_{CC}				
9 T_A = 25°C	t_{PHL5}	3003 (Fig 4)	107	IN	GND	4.5 V	GND	4.5 V	GND		GND		OUT			4.5 V	4.5 V	GND	5.0 V	$\overline{G}_1$ to $\overline{G}$	3	25	ns
	t_{PLH5}		108	4.5 V									OUT				IN			$\overline{G}_2$ to $\overline{G}$		21	
	t_{PHL5}		109					IN					OUT				IN			$\overline{G}_3$ to $\overline{G}$		25	
	t_{PLH5}		110					IN					OUT				4.5 V			$\overline{G}_3$ to $\overline{G}$		21	
	t_{PHL5}		111					IN					OUT							$\overline{G}_3$ to $\overline{G}$		25	
	t_{PLH6}		112				IN	4.5 V		OUT										$\overline{P}_0$ to $\overline{P}$		21	
	t_{PHL6}		113		IN		IN			OUT										$\overline{P}_0$ to $\overline{P}$		25	
	t_{PLH6}		114		IN		GND			OUT										$\overline{P}_1$ to $\overline{P}$		21	
	t_{PHL6}		115		IN					OUT										$\overline{P}_1$ to $\overline{P}$		25	
	t_{PLH6}		116		GND					OUT								IN		$\overline{P}_2$ to $\overline{P}$		21	
	t_{PHL6}		117						IN	OUT								IN		$\overline{P}_2$ to $\overline{P}$		25	
	t_{PLH6}		118						IN	OUT								GND		$\overline{P}_3$ to $\overline{P}$		21	
	t_{PHL6}		119						IN	OUT								GND		$\overline{P}_3$ to $\overline{P}$		25	
10 T_A = 125°C	t_{PLH1}		120						4.5 V						OUT	IN	4.5 V	GND		C_n to	6	29	
	t_{PHL1}		121												OUT					C_{n+X}		35	
	t_{PLH1}		122											OUT						C_n to		29	
	t_{PHL1}		123											OUT						C_{n+Y}		35	
	t_{PLH1}		124									OUT								C_n to		29	
	t_{PHL1}		125									OUT								C_{n+Z}		35	
	t_{PLH2}		126				IN								OUT	4.5 V				C_n to	3	25	
	t_{PHL2}		127				IN								OUT					$\overline{P}_0$ to		32	
	t_{PLH2}		128				IN							OUT						C_{n+X}		25	
	t_{PHL2}		129				IN							OUT						$\overline{P}_0$ to		32	
	t_{PLH2}		130				IN					OUT								C_{n+Y}		25	
	t_{PHL2}		131				IN					OUT								$\overline{P}_0$ to		32	
	t_{PLH2}		132		IN		GND							OUT						C_{n+Z}		25	
																				$\overline{P}_1$ to C_{n+Y}			

See notes at end of device type 02.

TABLE III. Group A inspection for device type 02 2/ - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
			Test No.	$\overline{G}_1$	$\overline{P}_1$	$\overline{G}_0$	$\overline{P}_0$	$\overline{G}_3$	$\overline{P}_3$	$\overline{P}$	GND	C_{n+Z}	$\overline{G}$	C_{n+Y}	C_{n+X}	C_n	$\overline{G}_2$	$\overline{P}_2$	V_{CC}		Min	Max	Unit
10 $T_A = 125°C$	t_{PHL2}	3003 (Fig 4)	133	4.5 V	IN	4.5 V	GND	4.5 V	4.5 V		GND			OUT		4.5 V	4.5 V	GND	5.0 V	$\overline{P}_1$ to C_{n+Y}	3	32	ns
	t_{PLH2}		134		IN							OUT								$\overline{P}_1$ to C_{n+Z}		25	
	t_{PHL2}		135		IN							OUT								$\overline{P}_1$ to C_{n+Z}		32	
	t_{PLH2}		136		GND							OUT						IN		$\overline{P}_2$ to C_{n+Z}		25	
	t_{PHL2}		137									OUT						IN		$\overline{P}_2$ to C_{n+Z}		32	
	t_{PLH3}		138			IN									OUT	GND		GND		$\overline{G}_0$ to C_{n+X}		25	
	t_{PHL3}		139			IN									OUT					$\overline{G}_0$ to C_{n+X}		32	
	t_{PLH3}		140			IN								OUT						$\overline{G}_0$ to C_{n+Y}		25	
	t_{PHL3}		141			IN								OUT						$\overline{G}_0$ to C_{n+Y}		32	
	t_{PLH3}		142			IN						OUT								$\overline{G}_0$ to C_{n+Z}		25	
	t_{PHL3}		143			IN						OUT								$\overline{G}_0$ to C_{n+Z}		32	
	t_{PLH3}		144	IN		4.5 V								OUT						$\overline{G}_1$ to C_{n+Y}		25	
	t_{PHL3}		145	IN										OUT						$\overline{G}_1$ to C_{n+Y}		32	
	t_{PLH3}		146	IN								OUT								$\overline{G}_1$ to C_{n+Z}		25	
	t_{PHL3}		147	IN								OUT								$\overline{G}_1$ to C_{n+Z}		32	
	t_{PLH3}		148	4.5 V								OUT				GND	IN	GND	5.0 V	$\overline{G}_2$ to C_{n+Z}		25	
	t_{PHL3}		149									OUT				GND	IN			$\overline{G}_2$ to C_{n+Z}		32	
	t_{PLH4}		150		IN	GND			GND				OUT			4.5 V	4.5 V			$\overline{P}_1$ to $\overline{G}$		26	
	t_{PHL4}		151		IN								OUT							$\overline{P}_1$ to $\overline{G}$		35	
	t_{PLH4}		152		GND								OUT					IN		$\overline{P}_2$ to $\overline{G}$		26	
	t_{PHL4}		153										OUT					IN		$\overline{P}_2$ to $\overline{G}$		35	
	t_{PLH4}		154						IN				OUT					GND		$\overline{P}_3$ to $\overline{G}$		26	
	t_{PHL4}		155						IN				OUT							$\overline{P}_3$ to $\overline{G}$		35	
	t_{PLH5}		156			IN			GND				OUT							$\overline{G}_0$ to $\overline{G}$		26	
	t_{PHL5}		157			IN							OUT							$\overline{G}_0$ to $\overline{G}$		35	
	t_{PLH5}		158	IN		4.5 V							OUT							$\overline{G}_1$ to $\overline{G}$		26	
	t_{PHL5}		159	IN									OUT							$\overline{G}_1$ to $\overline{G}$		35	
	t_{PLH5}		160	4.5 V									OUT				IN			$\overline{G}_2$ to $\overline{G}$		26	
	t_{PHL5}		161										OUT				IN			$\overline{G}_2$ to $\overline{G}$		35	
	t_{PLH5}		162					IN					OUT				4.5 V			$\overline{G}_3$ to $\overline{G}$		26	

See notes at end of device type 02.

TABLE III. Group A inspection for device type 02 [1/] - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
			Test No.	$\overline{G}_1$	$\overline{P}_1$	$\overline{G}_0$	$\overline{P}_0$	$\overline{G}_3$	$\overline{P}_3$	$\overline{P}$	GND	C_{n+Z}	$\overline{G}$	C_{n+Y}	C_{n+X}	C_n	$\overline{G}_2$	$\overline{P}_2$	V_{CC}		Min	Max	Unit
10 T_A = 125°C	t_{PHL5} t_{PLH6} t_{PHL6} t_{PLH6} t_{PHL6} t_{PLH6} t_{PHL6} t_{PLH6} t_{PHL6}	3003 (Fig 4)	163 164 165 166 167 168 169 170 171	4.5 V	GND IN IN GND	4.5 V	GND IN IN GND	IN 4.5 V	GND IN IN	OUT OUT OUT OUT OUT OUT OUT OUT	GND		OUT			4.5 V	4.5 V	GND IN IN GND	5.0 V	$\overline{G}_3$ to $\overline{G}$ $\overline{P}_0$ to $\overline{P}$ $\overline{P}_0$ to $\overline{P}$ $\overline{P}_1$ to $\overline{P}$ $\overline{P}_1$ to $\overline{P}$ $\overline{P}_2$ to $\overline{P}$ $\overline{P}_2$ to $\overline{P}$ $\overline{P}_3$ to $\overline{P}$ $\overline{P}_3$ to $\overline{P}$	3	35 26 35 26 35 26 35 26 35	ns
11	Same tests, terminal conditions and limits as subgroup 10, except T_A = -55°C.																						

NOTES:

1. Terminal conditions (Pins not designated may be H $\geq$ 2.0 V, or L $\leq$ 0.8 V, or open).
2. Tests shall be performed in sequence.
3. Input voltages shown are: A = 2.0 volts minimum and B = 0.8 volts maximum.
4. Output voltages shall be either: (a) H = 2.4 V, minimum and L = 0.4 V, maximum when using a high speed checker double comparator; or (b) H $\geq$1.5 V when using a high speed checker single comparator.

4.3 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. Burn-in test (Method 1015 of MIL-STD-883).
   1. Test condition D or E, using the circuit shown on figure 5, or equivalent.
b. Interim and final electrical test parameters shall be as specified in table II, except interim electrical parameters test prior to burn-in is optional at the discretion of the manufacturer.
c. Percent defective allowable (PDA) - The PDA for class A devices shall be as specified in MIL-M-38510. The PDA is specified as 10 percent for class B devices based on failures from group A, subgroup 1 test after cooldown as final electrical test in accordance with Method 5004 of MIL-STD-883, and with no intervening electrical measurements. If interim electrical parameter tests are performed prior to burn-in, failures resulting from pre burn-in screening may be excluded from the PDA. If interim electrical parameter tests prior to burn-in are omitted, then all screening failures shall be included in the PDA. The verified failures of group A, subgroup 1 after burn-in divided by the total number of devices submitted for burn-in in that lot shall be used to determine the percent defective for that lot, and the lot shall be accepted or rejected based on the PDA for the applicable device class.
d. Constant acceleration test (Method 2001 of MIL-STD-883) for case outline J shall be performed using test condition D or E.

4.4 Quality conformance inspection. Quality conformance inspection shall be in accordance with MIL-M-38510.

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

4.4.2 Group B inspection. Group B inspection shall be in accordance with table II of Method 5005 of MIL-STD-883.

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.
b. Subgroups 3 and 4 shall be added to the group C inspection requirements for class C devices and shall consist of the tests, conditions and limits specified for subgroups 10 and 11 of group A.
c. Operating life test (method 1005 of MIL-STD-883) conditions:
   1. Test condition D or E, using the circuit shown on figure 5 or equivalent.
   2. T_A = 125°C, minimum.
   3. Test duration: 1,000 hours, except as permitted by Appendix B of MIL-M-38510.
d. Constant acceleration test (Method 2001 of MIL-STD-883) for case outline J shall be performed using test condition D or E.

4.4.4 Group D inspection. Group D inspection shall be in accordance with table IV, Method 5005 of MIL-STD-883 and end point electrical parameters shall be as specified in table III.

4.5 Methods of examination and test. Methods of examination and test shall be as specified in the appropriate tables and as follows.

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

4.5.2 Life-test cooldown procedure. When devices are measured at 25°C following application of the operating life or burn-in test condition, they shall be cooled to room temperature prior to removal of the bias. Alternately, the bias may be removed during cooling if the case temperature is reduced to room temperature within 30 minutes after removal of the test condition.

4.6 Packaging inspection. The sampling and inspection of the preservation-packaging, packing and container marking shall be in accordance with the requirements of MIL-M-38510, except that the rough handling test shall not apply.

5. PACKAGING

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

6. NOTES

6.1 Notes. The notes specified in MIL-M-38510 are applicable to this specification.

6.2 Intended use. Microcircuits conforming to this specification are intended for use for Government microcircuit applications (original equipment) and logistic purposes.

6.3 Ordering data. Procurement documents 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. Requirement for certificate of compliance, if applicable.
d. Requirements for notification of change of product or process to procuring activity in addition to notification to qualifying activity, if applicable.
e. Requirements for packaging and packing.
f. Requirements for failure analysis (including required test condition of Method 5003), corrective action and reporting of results, if applicable.
g. Requirements for product assurance options.
h. Requirements for carriers, special lead lengths or lead forming, if applicable. These requirements shall not affect the part number. Unless otherwise specified, these requirements will not apply to direct purchase by or direct shipment to the Government.
i. Requirement for JAN marking.

6.4 Abbreviations, symbols, and definitions. The abbreviations, symbols, and definitions used herein are defined in MIL-STD-1313, MIL-STD-1331, and as follows:

GND	Electrical ground (common terminal)
V_{IN}	Voltage level at an input terminal
V_{IC}	Input clamp voltage
I_{IN}	Current flowing into an input terminal

6.5 Logistic support. Lead materials and finishes (see 3.3) are interchangeable. Unless otherwise specified, microcircuits procured for Government logistic support will be procured to device class "B" (see 1.2.2) and lead material and finish "C" (see 3.3). Longer lead lengths and lead forming shll not affect the part number.

6.6 Substitutability. Microcircuits covered by this specification will replace the following commercial device types:

Device type	Commercial type	Circuit	Company
01	54181	A	Texas Instruments, Inc.
01	7181	B	National Semiconductor, Corp.
01	54181	C	Motorola, Inc.
01	9341	D	Fairchild Semiconductor
01	54181	E	Advanced Micro Devices, Inc.
01	54181	F	Signetics Corp.
02	9342	A	Fairchild Semiconductor
02	54182	B	Texas Instruments, Inc.
02	54182	C	Motorola, Inc.
02	54182	D	Signetics Corp.

Custodians:
Army - EL
Navy - EC
Air Force - 17

Review activities:
Army - MI, AR
Air Force - 11, 85, 19, 99
NASA - NA
DLA - ES

User activities:
Army - SM
Navy - CG, MC, AS, OS, SH

Preparing activity:
Air Force - 17

Agent:
DLA - ES

(Project 5962-0253)