| QUALIFICATION |
| REQUIREMENTS |
| REMOVED |

MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, TTL, DECODERS,
MONOLITHIC SILICON

INACTIVE FOR NEW DESIGN AFTER DATE OF THIS REVISION

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, decoder microcircuits. One product assurance class and a choice of case outlines and lead finishes are provided for each type and are reflected in the complete part number.

1.2 Part number. The complete part number shall be as specified in MIL-M-38510, with the exception that the "JAN" or "J" certification shall not be used.

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

Device type	Circuit
01	1 of 4 decoder
02	7 segment decoder/driver

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

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

Outline letter	Case outline (see MIL-M-38510, appendix C)
E	D-2 (16-pin, 1/4" x 7/8"), dual-in-line package
F	F-5 (16-pin, 1/4" x 3/8"), flat package

1.2.4 Absolute maximum ratings.

Supply voltage range	-0.5 V dc to +7.0 V dc
Input voltage range	-1.5 V dc at -12 mA to +5.5 V dc
Storage temperature range	-65°C to +150°C
Maximum power dissipation (P_D) 1/	
Device type 01	275 mWdc
Device type 02	400 mWdc
Lead temperature (soldering, 10 seconds)	+300°C
Thermal resistance, junction-to-case (θ_{JC}):	
Case E	50°C/W
Case F	70°C/W
Junction temperature (T_J)	+175°C

1/ Must withstand the added P_D due to short circuit test (e.g., I_{OS}) at one output for 5 seconds duration.

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 (RBE-2), 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.

1.2.5 Recommended operating conditions.

Supply voltage (V_{CC})	4.5 V dc minimum to 5.5 V dc maximum
Minimum high-level input voltage (V_{IH})	2.0 V dc
Maximum low-level input voltage (V_{IL})	0.8 V dc
Sink-current capability by device type	
01	16 mA
02, outputs a - g	20 mA
02, RBO node	2.4 mA
Case operating temperature range (T_C)	-55°C to +125°C

2. APPLICABLE DOCUMENTS

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

SPECIFICATION

MILITARY

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

STANDARD

MILITARY

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

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

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

3. REQUIREMENTS

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

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

3.2.1 Terminal connections. The terminal connections shall be as specified on figure 2.

3.2.2 Logic diagrams. The logic diagrams shall be as specified on figure 1.

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

3.2.4 Case outlines. The case outlines shall be as specified in MIL-M-38510 and in 1.2.3 herein.

3.3 Lead material and finish. The lead material and finish shall be in accordance with MIL-M-38510 and 6.5 herein.

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

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

TABLE I. Electrical performance characteristics.

Tests	Symbol	Conditions 1/	Device type	Limits		Unit
				Min	Max	
High-level output voltage	V_{OH}	V_{CC} = 4.5 V, I_{OH} = -0.8 mA V_{IN} = 0.8 V and 2.0 V	01	2.4		V
Low-level output voltage	V_{OL}	V_{CC} = 4.5 V, I_{OL} = 16 mA V_{IN} = 0.8 and 2.0 V	01		0.4	V
Low-level output voltage	V_{OL1}	V_{CC} = 4.5 V, I_{OL} = 2.4 mA 4/ V_{IN} = 0.8 and 2.0 V	02		0.4	V
Low-level output voltage	V_{OL2}	V_{CC} = 5.5 V, I_{OL} = 3.1 mA 4/ V_{IN} = 0.8 and 2.0 V	02		0.4	V
Low-level output voltage	V_{OL3}	V_{CC} = 4.5 V, I_{OL} = 20 mA $\overline{LT}$ = 0 V	02		0.4	V
High-level output voltage (RBO output only)	V_{OH}	V_{CC} = 4.5 V, I_{OH} = -70 µA V_{IN} = 0.8 V and 2.0 V	02	3.0		V
Input clamp voltage	V_{IC}	V_{CC} = 4.5 V, I_{IN} = -12 mA	01		-1.5	V
Low-level input current	I_{IL}	V_{CC} = 5.5 V, V_{IN} = 0.4 V	01	-0.7	-1.6	mA
Low-level input current (data inputs)	I_{IL1}	V_{CC} = 5.5 V, V_{IN} = 0.4 V	02	-0.5	-1.4	mA
Low-level input current ($\overline{LT}$ input)	I_{IL2}	V_{CC} = 5.5 V, V_{IN} = 0.4 V	02	-2.8	-6.4	mA
Low-level input current ($\overline{RBI}$ input)	I_{IL3}	V_{CC} = 5.5 V, V_{IN} = 0.4 V	02	-0.3	-0.75	mA
High-level input current	I_{IH1}	V_{CC} = 5.5 V, V_{IN} = 2.4 V 2/ (except $\overline{LT}$ input on 02)	01, 02	0	40	µA
High-level input current	I_{IH2}	V_{CC} = 5.5 V, V_{IN} = 5.5 V 2/ (except $\overline{LT}$ input on 02)	01, 02	0	100	µA
High-level input current	I_{IH3}	V_{CC} = 5.5 V, V_{IN} = 2.4 V 2/ (at $\overline{LT}$ only)	02	0	200	µA
High-level input current	I_{IH4}	V_{CC} = 5.5 V, V_{IN} = 5.5 V 2/ (at $\overline{LT}$ only)	02	0	500	µA

See footnotes at end of table.

TABLE I. Electrical performance characteristics - Continued.

Tests	Symbol	Conditions 1/	Device type	Limits		Unit
				Min	Max	
Short circuit output current	I_{OS}	V_{CC} = 5.5 V 2/ 3/	01	-20	-70	mA
Short circuit output current ($\overline{RBO}$ output only)	I_{OS}	V_{CC} = 4.5 V 4/	02	-0.64		mA
Short circuit output current ($\overline{RBO}$ output only)	I_{OS}	V_{CC} = 5.5 V 4/	02		-6.8	mA
Supply current	I_{CC}	V_{CC} = 5.5 V, V_{IN} = 0 V	01		50	mA
Supply current	I_{CC}	V_{CC} = 5.0 V	02		66	mA
Output latching voltage	B_{VO}	V_{CC} = 5.0 V, I_{OUT} = 10 mA	02	30		V
High-level input current	I_{IH2}	V_{CC} = 5.5 V 2/ (except $\overline{LT}$ input on 02)	01, 02	0	100	µA
High-level input current	I_{IH2}	V_{CC} = 5.5 V, V_{IN} = 5.5 V 2/ (at $\overline{LT}$ only)	02	0	500	µA
Propagation delay time from E to $\overline{0}$, $\overline{1}$, 2, 3	t_{PLH}	V_{CC} = 5.0 V RL = 390Ω ±5% CL = 50 pF minimum See figure 6	01	6	39	ns
	t_{PHL}		01	12	35	ns
Propagation delay time from A0 to $\overline{0}$, $\overline{2}$ A1 to $\overline{0}$, $\overline{1}$	t_{PLH}		01	6	39	ns
	t_{PHL}		01	6	35	ns
Propagation delay time from A0 to $\overline{1}$, $\overline{3}$ A1 to $\overline{2}$, $\overline{3}$	t_{PLH}		01	9	50	ns
	t_{PHL}		01	9	41	ns
Propagation delay time from A0, A1, A2, A3, $\overline{LT}$ to $\overline{a}$, $\overline{b}$, $\overline{c}$, $\overline{d}$, $\overline{e}$, $\overline{f}$, $\overline{g}$	t_{PLH}	V_{CC} = 5.0 V RL = 240Ω ±5% CL = 50 pF minimum RL = 2,000Ω ±5% See figure 7	02	30	1,100	ns
	t_{PHL}		02	50	1,200	ns
Propagation delay time from A0, A1, A2, A3 to $\overline{RBO}$	t_{PLH}		02	60	1,100	ns
	t_{PHL}		02	10	500	ns
Propagation delay time from $\overline{RBI}$ to $\overline{a}$, $\overline{b}$, $\overline{c}$, $\overline{d}$, $\overline{e}$, $\overline{f}$, $\overline{g}$	t_{PLH}		02	30	1,200	ns
	t_{PHL}		02	30	1,300	ns

See footnotes at end of table.

TABLE I. Electrical performance characteristics - Continued.

Tests	Symbol	Conditions 1/	Device type	Limits		Unit
				Min	Max	
Propagation delay time from $\overline{RBI}$ to $\overline{RBO}$	t_{PLH}	V_{CC} = 5.0 V RL = 240Ω ±5%	02	40	700	ns
	t_{PHL}	CL = 50 pF minimum RL = 2,000Ω ±5% See figure 7	02	10	400	ns
Propagation delay time from $\overline{LT}$ to $\overline{RBO}$	t_{PLH}		02	30	700	ns
	t_{PHL}		02	10	80	ns
Propagation delay time from $\overline{RBO}$ to $\overline{a}$, $\overline{b}$, $\overline{c}$, $\overline{d}$, $\overline{e}$, $\overline{f}$, $\overline{g}$	t_{PLH}		02	30	700	ns
	t_{PHL}		02	30	600	ns

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

2/ All unspecified inputs grounded.

3/ Not more than one output should be shorted at one time.

4/ $\overline{RBO}$ node only.

3.6 Marking. Marking shall be in accordance with MIL-M-38510 and 1.2 herein. The "JAN" or "J" certification mark shall not be used.

3.7 Manufacturer eligibility. To be eligible to supply microcircuits to this specification, a manufacturer shall have a manufacturer certification in accordance with MIL-M-38510 for at least one line; not necessarily the line producing the device type described herein.

TABLE II. Electrical test requirements.

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

*PDA applies to subgroup 1 (see 4.2c).

3.8 Certification. Certification in accordance with MIL-M-38510 is not required for this device.

4. QUALITY ASSURANCE PROVISIONS

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

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

a. Burn-in (method 1015 of MIL-STD-883).

(1) Test condition D or E, using the circuit shown on figure 4, or equivalent.

(2) T_A = +125°C minimum.

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. The percent defective allowable (PDA) for class B devices shall be 10 percent 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.

4.3 Qualification inspection. Qualification inspection is not required.

4.4 Quality conformance inspection. Quality conformance inspection shall be in accordance with MIL-M-38510, and as specified herein. Inspections to be performed shall be those specified in method 5005 of MIL-STD-883 and herein for groups A, B, C, and D inspections (see 4.4.1 through 4.4.4). Generic test data (see 6.6) may be used to satisfy the requirements for groups C and D inspections. Quality conformance inspection shall be completed on the specific devices covered by this specification before they are shipped.

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 herein.

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 herein.

b. Steady-state life test (method 1005 of MIL-STD-883) conditions:

(1) Test condition D or E, using the circuit shown on figure 4, or equivalent.

(2) T_A = +125°C minimum.

(3) Test duration: 1,000 hours, except as permitted by appendix B of MIL-M-38510.

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

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

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

5. PACKAGING

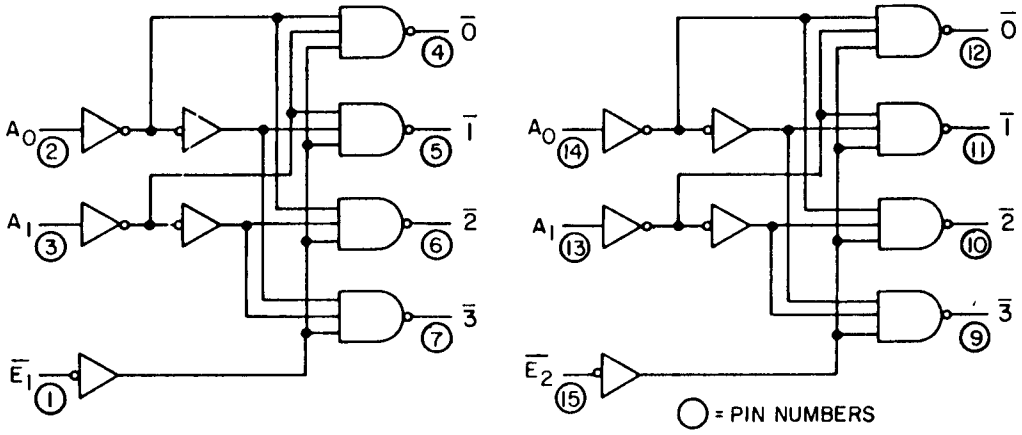
5.1 Packaging requirements. The requirements for packaging of microcircuits shall be as specified in MIL-M-38510.

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 logisitic support of existing equipment.

Device type 01



Device type 02

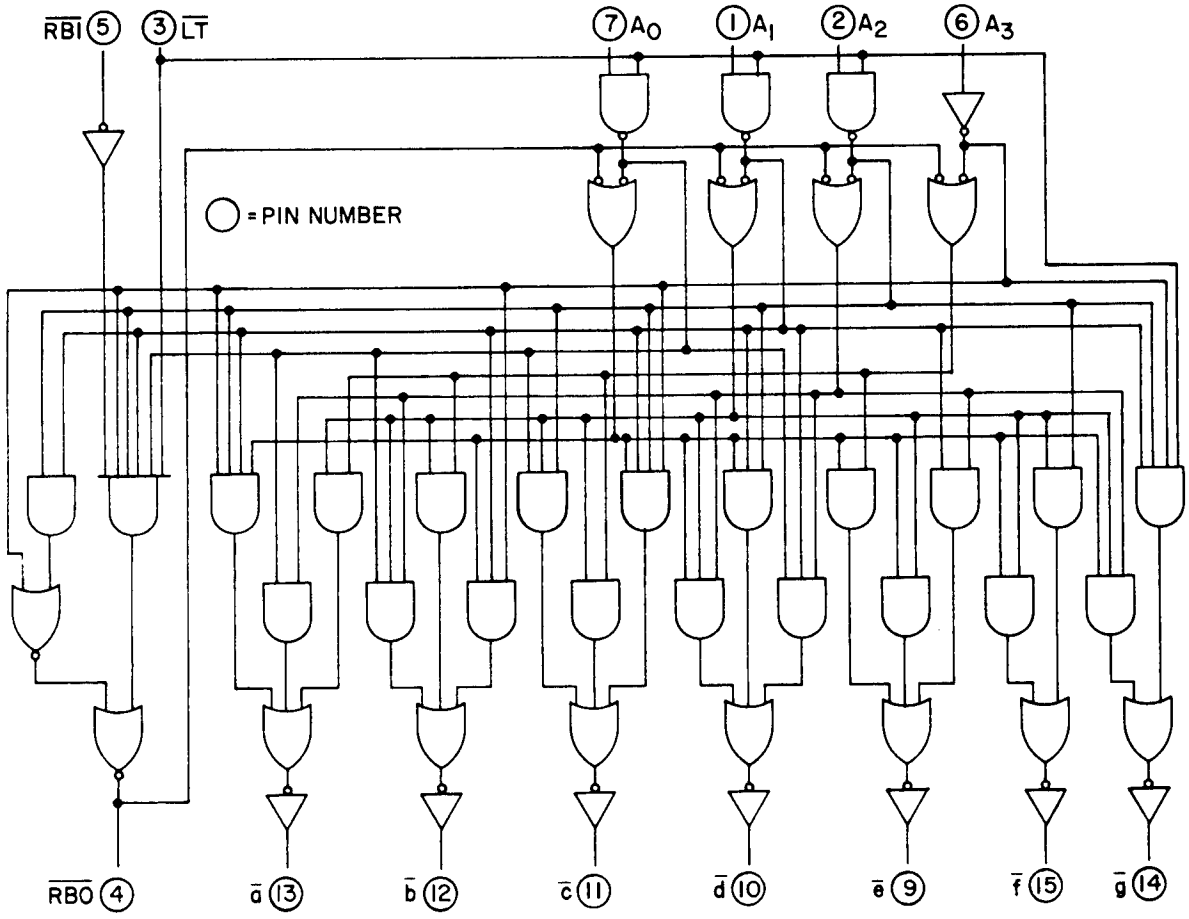
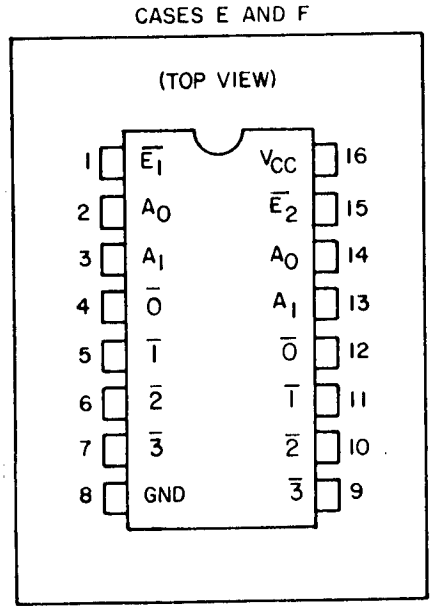


FIGURE 1. Logic diagrams.

Device type 01



Device type 02

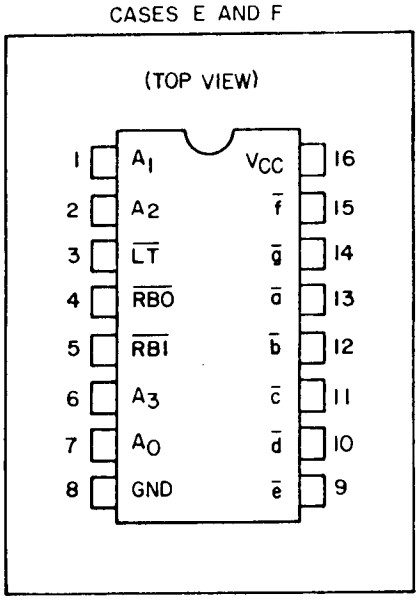


FIGURE 2. Terminal connections.

Device type 01

DECODER 1 & 2

$\overline{E}$	A_0	A_1	$\overline{0}$	$\overline{1}$	$\overline{2}$	$\overline{3}$
L	L	L	L	H	H	H
L	H	L	H	L	H	H
L	L	H	H	H	L	H
L	H	H	H	H	H	L
H	X	X	H	H	H	H

H = HIGH voltage level
L = LOW voltage level
X = Irrelevant

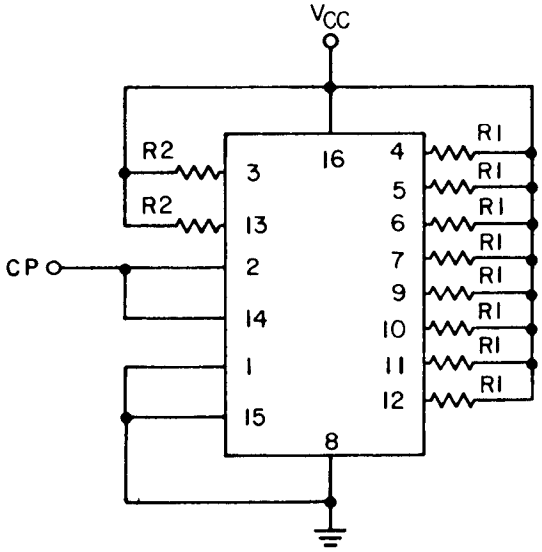
Device type 02

$\overline{LT}$	$\overline{RBI}$	A_0	A_1	A_2	A_3	$\overline{a}$	$\overline{b}$	$\overline{c}$	$\overline{d}$	$\overline{e}$	$\overline{f}$	$\overline{g}$	$\overline{RBO}$	DECIMAL OR FUNCTION
L	X	X	X	X	X	L	L	L	L	L	L	L	H	
H	L	L	L	L	L	H	H	H	H	H	H	H	L	0
H	H	L	L	L	L	L	L	L	L	L	L	H	H	0
|	X	H	L	L	L	H	H	H	H	L	L	H	H	1
|	|	L	H	L	L	L	L	H	L	L	H	L	H	2
|	|	H	H	L	L	L	L	L	L	H	H	L	H	3
|	|	L	L	H	L	H	L	L	H	H	L	L	H	4
|	|	H	L	H	L	L	H	L	L	H	L	L	H	5
|	|	L	H	H	L	H	H	L	L	L	L	L	H	6
|	|	H	H	H	L	L	L	L	H	H	H	H	H	7
|	|	L	L	L	H	L	L	L	L	L	L	L	H	8
|	|	H	L	L	H	L	L	L	H	H	L	L	H	9
|	|	L	H	L	H	H	H	H	H	H	H	H	L	10
|	|	H	H	L	H	H	H	H	H	H	H	H	L	11
|	|	L	L	H	H	H	H	H	H	H	H	H	L	12
|	|	H	L	H	H	H	H	H	H	H	H	H	L	13
|	|	L	H	H	H	H	H	H	H	H	H	H	L	14
H	X	H	H	H	H	H	H	H	H	H	H	H	L	15

H = HIGH voltage level
L = LOW voltage level
X = Irrelevant

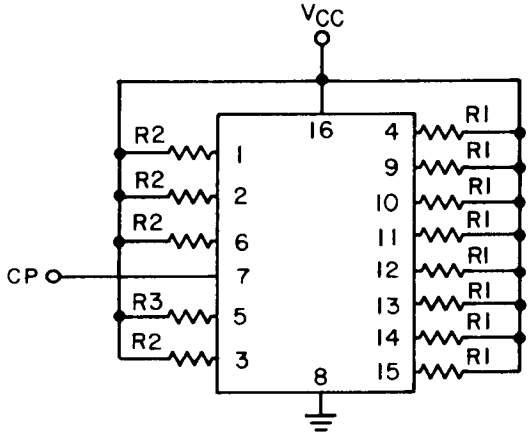
FIGURE 3. Truth tables.

Device type 01



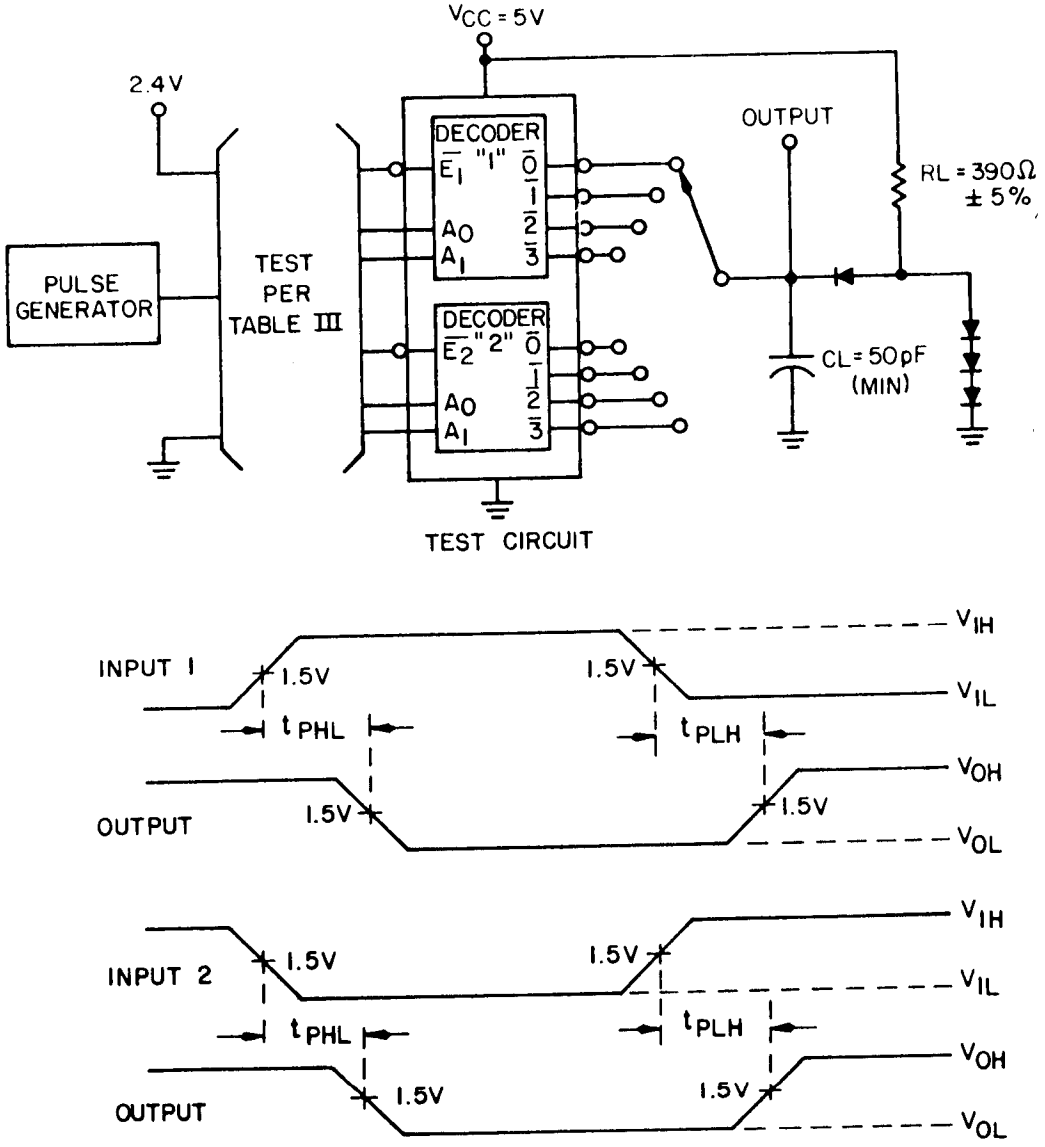
NOTES:
1. CP = 3 volts, frequency = 1 MHz, and 50% duty cycle.
2. VCC = 5.5 V.
3. R1 = 318Ω, R2 = 4 kΩ.

Device type 02



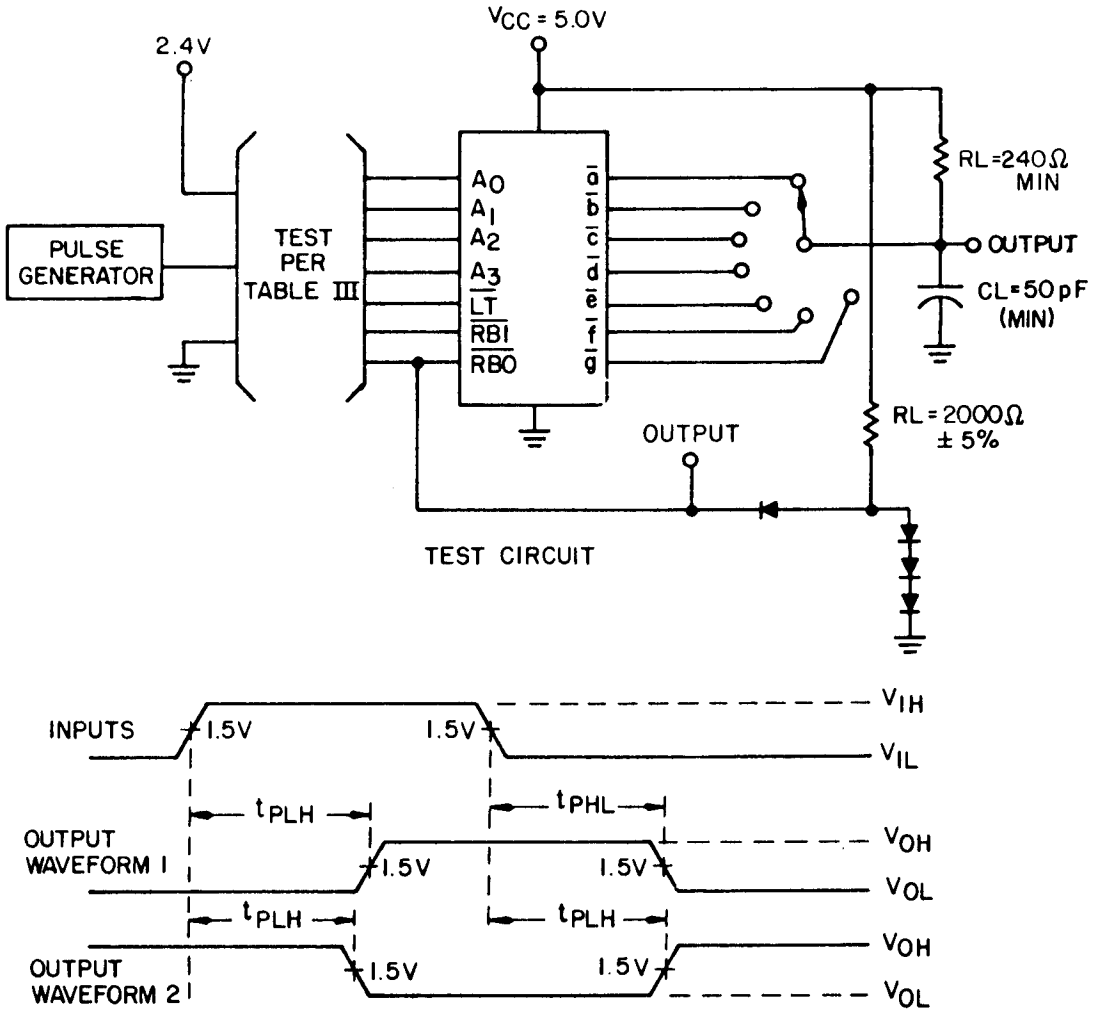
NOTES:
1. CP = 3 volts, frequency = 1 MHz, and 50% duty cycle.
2. VCC = 5.5 V.
3. R1 = 255Ω, R2 = 2.6 kΩ, R3 = 5.2 kΩ.

FIGURE 4. Burn-in and life test circuit.



NOTES:
1. The pulse generator has the following characteristics: V_{gen} = 3.0 V min. t_{TLH} (0.7 V to 2.7 V) and t_{THL} (2.7 V to 0.7 V) 10 ns, PRR = 1 MHz, and min. duty cycle 50%.
2. CL includes probe and jig capacitance.
3. All diodes are 1N3064 or equivalent.
4. Input 1 and input 2 are used to test each output with each A input. Input 2 is used to test each output with each E input.

FIGURE 5. Switching time for device type 01.



NOTES:
1. The pulse generator has the following characteristics: V_{gen} = 3.0 V min. t_{TLH} (0.7 V to 2.7 V) and t_{THL} (2.7 V to 0.7 V) 10 ns, PRR = 1 MHz, and min. duty cycle 50%.
2. C_L includes probe and jig capacitance.
3. Input - output waveform combination in accordance with the truth tables.
4. All diodes are 1N3064 or equivalent.

FIGURE 5. Switching time for device type 02.

TABLE III. Group A inspection for device type 01.
Terminal conditions (pins not designated may be high $\geq$ 2.0 V; or low $\leq$ 0.8 V; or open)

Subgroup	Symbol	MIL-STD-883 method	Case E, F Test No.	1 $\overline{E1}$	2 A0	3 A1	4 $\overline{0}$	5 $\overline{1}$	6 $\overline{2}$	7 $\overline{3}$	8 GND	9 $\overline{3}$	10 $\overline{2}$	11 $\overline{1}$	12 $\overline{0}$	13 A1	14 A0	15 $\overline{E2}$	16 V_{CC}	Meas. terminal	Test limits Min	Max	Unit
1 T_C = 25°C	V_{OH}	3007	1	2.0 V	GND	GND	-.8 mA	-.8 mA			GND								4.5 V	$\overline{0}$	2.4		V
			2		4.5 V	GND			-.8 mA											$\overline{1}$			
			3		GND	4.5 V				-.8 mA										$\overline{2}$			
			4		4.5 V	4.5 V														$\overline{3}$			
			5												-.8 mA	GND	GND	2.0 V		$\overline{0}$			
			6											-.8 mA		GND	4.5 V			$\overline{1}$			
			7										-.8 mA			4.5 V	GND			$\overline{2}$			
			8									-.8 mA				4.5 V	4.5 V			$\overline{3}$			
	V_{OL}	3006	9	0.8 V	0.8 V	0.8 V	16 mA	16 mA												$\overline{0}$		0.4	
			10	GND	2.0 V	GND			16 mA											$\overline{1}$			
			11	GND	GND	2.0 V				16 mA				16 mA						$\overline{2}$			
			12	GND	4.5 V	4.5 V									16 mA	0.8 V	0.8 V	0.8 V		$\overline{3}$			
			13													GND	2.0 V	GND		$\overline{0}$			
			14													2.0 V	GND	GND		$\overline{1}$			
			15										16 mA			4.5 V	4.5 V	GND		$\overline{2}$			
			16									16 mA								$\overline{3}$			
	V_{IC}		17	-12 mA																$\overline{E1}$		-1.5	
			18		-12 mA															A0			
			19			-12 mA														A1			
			20															-12 mA		$\overline{E2}$			
			21														-12 mA			A0			
			22													-12 mA				A1			
	I_{IH1}	3010	23	2.4 V															5.5 V	$\overline{E1}$	0	40	μA
			24		2.4 V															A0			
			25			2.4 V														A1			
			26															2.4 V		$\overline{E2}$			
			27														2.4 V			A0			
			28													2.4 V				A1			
	I_{IH2}		29	5.5 V																$\overline{E1}$		100	
			30		5.5 V															A0			
			31			5.5 V														A1			
			32															5.5 V		$\overline{E2}$			
			33														5.5 V			A0			
			34													5.5 V				A1			
	I_{IL}	3009	35	0.4 V																$\overline{E1}$	-0.7	-1.6	mA
			36		0.4 V															A0			
			37			0.4 V														A1			
			38															0.4 V		$\overline{E2}$			
			39														0.4 V			A0			
			40													0.4 V				A1			
	I_{OS}	3011	41	GND	4.5 V	GND	GND	GND												$\overline{0}$	-20	-70	
			42		GND				GND											$\overline{1}$			
			43		GND					GND										$\overline{2}$			
			44		4.5 V															$\overline{3}$			
			45																	$\overline{0}$			
			46											GND	GND	GND	4.5 V	GND		$\overline{1}$			
			47										GND							$\overline{2}$			
			48									GND								$\overline{3}$			
	I_{CC}	3005	49	GND	GND	GND											GND			V_{CC}		50	

See notes at end of device type 01.

TABLE III. Group A inspection for device type 01 - Continued.
Terminal conditions (pins not designated may be high $\geq$ 2.0 V; or low $\leq$ 0.8 V; or open)

Subgroup	Symbol	MIL-STD-883 method	Case E, F Test No.	1 $\overline{E1}$	2 A0	3 A1	4 $\overline{0}$	5 $\overline{1}$	6 $\overline{2}$	7 $\overline{3}$	8 GND	9 $\overline{3}$	10 $\overline{2}$	11 $\overline{1}$	12 $\overline{0}$	13 A1	14 A0	15 $\overline{E2}$	16 V_{CC}	Meas. terminal	Test limits Min	Max	Unit
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 T_C = 25°C	Truth table test		50	GND	GND	GND	L	H	H	H	GND	H	H	H	L	GND	GND	GND	5.0 V		See notes 1 and 2		
			51		5.0 V	GND	H	L	H	H		H	H	L	H	GND	5.0 V						
			52		GND	5.0 V		H	L	H		H	L	H		5.0 V	GND						
			53		5.0 V	5.0 V		H	H	L		L	H	H		5.0 V	5.0 V						
			54	5.0 V	X	X		H	H	H		H	H	H		X	X	5.0 V					
8	Truth table test		55 thru 59	Same tests as subgroup 7 except T_C = 125°C.																			
	Truth table test		60 thru 64	Same tests as subgroup 7 except T_C = -55°C.																			
9 T_C = 25°C	t_{PHL}	3003 (Fig 5)	65	IN	GND	GND	OUT				GND								5.0 V	$\overline{E1}$ - $\overline{0}$	6	28	ns
			66		5.0 V	GND		OUT												$\overline{E1}$ - $\overline{1}$			
			67		GND	5.0 V			OUT											$\overline{E1}$ - $\overline{2}$			
			68		5.0 V	5.0 V				OUT										$\overline{E1}$ - $\overline{3}$			
	t_{PLH}		69		GND	GND	OUT													$\overline{E1}$ - $\overline{0}$		25	
			70		5.0 V	GND		OUT												$\overline{E1}$ - $\overline{1}$			
			71		GND	5.0 V			OUT											$\overline{E1}$ - $\overline{2}$			
			72		5.0 V	5.0 V				OUT										$\overline{E1}$ - $\overline{3}$			
	t_{PHL}		73	GND	IN	GND		OUT												A0 - $\overline{1}$	9	33	
	t_{PHL}		74			5.0 V			OUT											A0 - $\overline{2}$	6	28	
	t_{PLH}		75			GND		OUT												A0 - $\overline{1}$	9	33	
	t_{PLH}		76			5.0 V			OUT											A0 - $\overline{2}$	6	25	
	t_{PHL}		77		GND	IN	OUT													A1 - $\overline{0}$	6	28	
	t_{PHL}		78		5.0 V					OUT										A1 - $\overline{3}$	9	33	
	t_{PLH}		79		GND		OUT													A1 - $\overline{0}$	6	25	
	t_{PLH}		80		5.0 V					OUT										A1 - $\overline{3}$	9	33	
	t_{PHL}		81												OUT	GND	GND	IN		$\overline{E2}$ - $\overline{0}$	6	28	
			82											OUT		GND	5.0 V			$\overline{E2}$ - $\overline{1}$			
			83										OUT			5.0 V	GND			$\overline{E2}$ - $\overline{2}$			
			84									OUT				5.0 V	5.0 V			$\overline{E2}$ - $\overline{3}$			
	t_{PLH}		85												OUT	GND	GND			$\overline{E2}$ - $\overline{0}$		25	
			86											OUT		GND	5.0 V			$\overline{E2}$ - $\overline{1}$			
			87										OUT			5.0 V	GND			$\overline{E2}$ - $\overline{2}$			
			88									OUT				5.0 V	5.0 V			$\overline{E2}$ - $\overline{3}$			
	t_{PHL}		89											OUT		GND	IN	GND		A0 - $\overline{1}$	9	33	
	t_{PHL}		90										OUT			5.0 V				A0 - $\overline{2}$	6	28	
	t_{PLH}		91											OUT		GND				A0 - $\overline{1}$	9	33	
	t_{PLH}		92										OUT			5.0 V				A0 - $\overline{2}$	6	25	
	t_{PHL}		93												OUT	IN	GND			A1 - $\overline{0}$	6	28	
	t_{PHL}		94									OUT					5.0 V			A1 - $\overline{3}$	9	33	
	t_{PLH}		95												OUT		GND			A1 - $\overline{0}$	6	25	
	t_{PLH}		96									OUT					5.0 V			A1 - $\overline{3}$	9	33	

See notes at end of device type 01.

TABLE III. Group A inspection for device type 01 - Continued.
Terminal conditions (pins not designated may be high $\geq$ 2.0 V; or low $\leq$ 0.8 V; or open)

Subgroup	Symbol	MIL-STD-883 method	Case E, F Test No.	1 $\overline{E1}$	2 A0	3 A1	4 $\overline{0}$	5 $\overline{1}$	6 $\overline{2}$	7 $\overline{3}$	8 GND	9 $\overline{3}$	10 $\overline{2}$	11 $\overline{1}$	12 $\overline{0}$	13 A1	14 A0	15 $\overline{E2}$	16 V_{CC}	Meas. terminal	Test limits Min	Max	Unit
10 T_C = 125°C	t_{PHL}	3003 (Fig 5)	97 98 99 100	IN	GND 5.0 V GND 5.0 V	GND GND 5.0 V 5.0 V	OUT	OUT	OUT	OUT	GND								5.0 V	$\overline{E1}$ - $\overline{0}$ $\overline{E1}$ - $\overline{1}$ $\overline{E1}$ - $\overline{2}$ $\overline{E1}$ - $\overline{3}$	12	35	ns
	t_{PLH}		101 102 103 104		GND 5.0 V GND 5.0 V	GND GND 5.0 V 5.0 V	OUT	OUT	OUT	OUT										$\overline{E1}$ - $\overline{0}$ $\overline{E1}$ - $\overline{1}$ $\overline{E1}$ - $\overline{2}$ $\overline{E1}$ - $\overline{3}$	6	39	
	t_{PHL} t_{PHL}		105 106	GND	IN	GND 5.0 V		OUT	OUT											A0 - $\overline{1}$ A0 - $\overline{2}$	9 6	41 35	
	t_{PLH} t_{PLH}		107 108			GND 5.0 V		OUT	OUT											A0 - $\overline{1}$ A0 - $\overline{2}$	9 6	50 39	
	t_{PHL} t_{PHL}		109 110		GND 5.0 V	IN	OUT			OUT										A1 - $\overline{0}$ A1 - $\overline{3}$	6 9	35 41	
	t_{PLH} t_{PLH}		111 112		GND 5.0 V		OUT			OUT										A1 - $\overline{0}$ A1 - $\overline{3}$	6 9	39 50	
	t_{PHL}		113 114 115 116									OUT	OUT	OUT	OUT	GND GND 5.0 V 5.0 V	GND 5.0 V GND 5.0 V	IN		$\overline{E2}$ - $\overline{0}$ $\overline{E2}$ - $\overline{1}$ $\overline{E2}$ - $\overline{2}$ $\overline{E2}$ - $\overline{3}$	12	35	
	t_{PLH}		117 118 119 120									OUT	OUT	OUT	OUT	GND GND 5.0 V 5.0 V	GND 5.0 V GND 5.0 V			$\overline{E2}$ - $\overline{0}$ $\overline{E2}$ - $\overline{1}$ $\overline{E2}$ - $\overline{2}$ $\overline{E2}$ - $\overline{3}$	6	39	
	t_{PHL} t_{PHL}		121 122										OUT	OUT		GND 5.0 V	IN	GND		A0 - $\overline{1}$ A0 - $\overline{2}$	9 6	41 35	
	t_{PLH} t_{PLH}		123 124										OUT	OUT		GND 5.0 V				A0 - $\overline{1}$ A0 - $\overline{2}$	9 6	50 39	
	t_{PHL} t_{PHL}		125 126									OUT			OUT	IN	GND 5.0 V			A1 - $\overline{0}$ A1 - $\overline{3}$	6 9	35 41	
	t_{PLH} t_{PLH}		127 128									OUT			OUT		GND 5.0 V			A1 - $\overline{0}$ A1 - $\overline{3}$	6 9	39 50	
11	Same tests, terminal conditions and limits as subgroup 10, except T_C = -55°C.																						

NOTES:
1. X = Input may be high or low.
2. Output voltages shall be either:
   (a) H = 2.4 volts minimum and L = 0.4 volts maximum when using a high speed checker double comparator, or
   (b) H $\geq$ 1.5 volts and L < 1.5 volts when using a high speed checker single comparator.

TABLE III. Group A inspection for device type 02.
Terminal conditions (pins not designated may be high $\geq$ 2.0 V; or low $\leq$ 0.8 V; or open)

Subgroup	Symbol	MIL-STD-883 method	Case E, F Test No.	1 A1	2 A2	3 $\overline{LT}$	4 $\overline{RBO}$	5 $\overline{RBI}$	6 A3	7 A0	8 GND	9 $\bar{e}$	10 $\bar{d}$	11 $\bar{c}$	12 $\bar{b}$	13 $\bar{a}$	14 $\bar{g}$	15 $\bar{f}$	16 V_{CC}	Meas. terminal	Test limits Min	Max	Unit
1 T_C = 25°C	V_{OH}	3007	1	0.8 V	0.8 V	2.0 V	-70 µA	2.0 V	0.8 V	0.8 V	GND								4.5 V	$\overline{RBO}$	3.0		V
	V_{OH}	3007	2	2.0 V	2.0 V	0.8 V	-70 µA	2.0 V	2.0 V	2.0 V									4.5 V	$\overline{RBO}$	3.0		
	V_{OL1}	3006	3	0.8 V	0.8 V	2.0 V	2.4 mA	0.8 V	0.8 V	0.8 V									4.5 V	$\overline{RBO}$		0.4	
	V_{OL2}	3006	4	0.8 V	0.8 V	2.0 V	3.1 mA	0.8 V	0.8 V	0.8 V									5.5 V	$\overline{RBO}$			
	V_{OL3}	3006	5			0.8 V						20 mA							4.5 V	$\bar{e}$			
			6										20 mA							$\bar{d}$			
			7											20 mA						$\bar{c}$			
			8												20 mA					$\bar{b}$			
			9													20 mA				$\bar{a}$			
			10														20 mA			$\bar{g}$			
			11															20 mA		$\bar{f}$			
	BVO		12	4.5 V	4.5 V	4.5 V			4.5 V	4.5 V		10 mA							5.0 V	$\bar{e}$	30		
			13										10 mA							$\bar{d}$			
			14											10 mA						$\bar{c}$			
			15												10 mA					$\bar{b}$			
			16													10 mA				$\bar{a}$			
			17														10 mA			$\bar{g}$			
			18															10 mA		$\bar{f}$			
	I_{IH1}	3010	19	2.4 V		GND													5.5 V	A1	0	40	µA
	I_{IH1}		20		2.4 V	GND														A2		40	
	I_{IH3}		21	GND	GND	2.4 V		5.5 V	GND	GND										$\overline{LT}$		200	
	I_{IH1}		22					2.4 V												$\overline{RBI}$		40	
			23			GND			2.4 V											A3		40	
			24							2.4 V										A0		40	
	I_{IH2}		25	5.5 V																A1		100	
	I_{IH2}		26		5.5 V															A2		100	
	I_{IH4}		27	GND	GND	5.5 V		5.5 V	GND	GND										$\overline{LT}$		500	
	I_{IH2}		28					5.5 V												$\overline{RBI}$		100	
			29			GND			5.5 V											A3		100	
			30			GND				5.5 V										A0		100	
	I_{IL1}	3009	31	0.4 V		4.5 V														A1	-0.5	-1.4	mA
			32		0.4 V															A2			
			33						0.4 V											A3			
			34							0.4 V										A0			
	I_{IL2}		35	4.5 V	4.5 V	0.4 V		GND	GND	4.5 V										$\overline{LT}$	-2.8	-6.4	
	I_{IL3}		36					0.4 V												$\overline{RBI}$	-0.3	-0.75	
	I_{OS}	3011	37	4.5 V	4.5 V	4.5 V	GND	4.5 V	GND	4.5 V									4.5 V	$\overline{RBO}$	-0.64		
	I_{OS}	3011	38	GND	GND	GND	GND	4.5 V	4.5 V	4.5 V									5.5 V	$\overline{RBO}$		-6.8	
	I_{CC}	3005	39																5.0 V	V_{CC}		66	
2	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = 125°C.																						
3	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = -55°C.																						

See notes at end of device type 02.

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

Subgroup	Symbol	MIL-STD-883 method	Case E, F Test No.	1 A1	2 A2	3 $\overline{LT}$	4 $\overline{RBO}$	5 $\overline{RBI}$	6 A3	7 A0	8 GND	9 $\bar{e}$	10 $\bar{d}$	11 $\bar{c}$	12 b	13 $\bar{a}$	14 $\bar{g}$	15 f	16 V_{CC}	Meas. terminal	Test limits Min	Max	Unit
7 T_C = 25°C	Truth table test		40	X	X	GND	H	X	X	X	GND	L	L	L	L	L	L	L	5.0 V				
			41	GND	GND	5.0 V	L	GND	GND	GND		H	H	H	H	H	H	H					
			42	GND			H	5.0 V		GND		L	L	L	L	L	H	L					
			43	GND				X		5.0 V		L	H	H	H	H	H	L					
			44	5.0 V						GND		L	L	H	L	L	L	H					
			45	5.0 V						5.0 V		H	L	L	L	L		L					
			46	GND	5.0 V					GND		H	H		L	H		H					
			47	GND						5.0 V		H	L		H	L		L					
			48	5.0 V						GND		L	H		H	H		L					
			49	5.0 V						5.0 V		H	H		L	L	H	H		See notes 1 and 2			
			50	GND	GND				5.0 V	GND		L	L		L	L	L	L					
			51	GND						5.0 V		H	L		L	L	L	L					
			52	5.0 V			L			GND				H	H	H	H	H					
			53	5.0 V						5.0 V													
			54	GND	5.0 V					GND													
			55	GND						5.0 V													
			56	5.0 V						GND													
			57	5.0 V						5.0 V													
8	Truth table test		58 thru 75	Same tests as subgroup 7, except T_C = 125°C.																			
	Truth table test		76 thru 93	Same tests as subgroup 7, except T_C = -55°C.																			
9 T_C = 25°C	t_{PHL}	3003 (Fig 5)	94	GND	GND	5.0 V		5.0 V	GND	IN	GND					OUT			5.0 V	A0 - $\bar{a}$	50	700	ns
			95		5.0 V									OUT	OUT					A0 - b			
			96		GND															A0 - $\bar{c}$			
			97		GND								OUT							A0 - d			
			98		GND				5.0 V			OUT								A0 - $\bar{e}$			
			99	5.0 V	5.0 V				GND								OUT	OUT		A0 - f			
			100	5.0 V	5.0 V															A0 - $\bar{g}$			
			101	GND	GND		OUT	GND												A0 - $\overline{RBO}$	10	400	
	t_{PLH}		102		GND			5.0 V								OUT				A0 - $\bar{a}$	30	500	
			103		5.0 V									OUT	OUT					A0 - b			
			104		GND								OUT							A0 - $\bar{c}$			
			105		GND				5.0 V			OUT								A0 - d			
			106		GND				GND								OUT	OUT		A0 - $\bar{e}$			
			107	5.0 V	5.0 V															A0 - f			
			108	5.0 V	5.0 V															A0 - $\bar{g}$			
			109	GND	GND		OUT	GND												A0 - $\overline{RBO}$	60	700	
	t_{PHL}		110	IN	GND			5.0 V		5.0 V						OUT				A1 - $\bar{a}$	50		
			111		5.0 V					GND				OUT	OUT					A1 - b			
			112		GND					GND			OUT							A1 - $\bar{c}$			
			113		5.0 V					5.0 V		OUT								A1 - d			
			114		GND					5.0 V										A1 - $\bar{e}$			
			115		GND					GND								OUT		A1 - f			
			116		GND		OUT		5.0 V	GND										A1 - $\overline{RBO}$	10	400	

See notes at end of device type 02.

TABLE III. Group A inspection for device type 02 - Continued.
Terminal conditions (pins not designated may be high $\geq$ 2.0 V; or low $\leq$ 0.8 V; or open)

Subgroup	Symbol	MIL-STD-883 method	Case E, F Test No.	1 A1	2 A2	3 $\overline{LT}$	4 $\overline{RBO}$	5 $\overline{RBI}$	6 A3	7 A0	8 GND	9 $\bar{e}$	10 $\bar{d}$	11 $\bar{c}$	12 $\bar{b}$	13 $\bar{a}$	14 $\bar{g}$	15 $\bar{f}$	16 V_{CC}	Meas. terminal	Test limits Min	Max	Unit
9 T_C = 25°C	t_{PLH}	3003 (Fig 5)	117	IN	GND	5.0 V		5.0 V	GND	5.0 V	GND					OUT			5.0 V	A1 - $\bar{a}$	30	500	ns
			118		5.0 V					GND					OUT					A1 - $\bar{b}$			
			119		GND					GND				OUT						A1 - $\bar{c}$			
			120		5.0 V					5.0 V			OUT							A1 - $\bar{d}$			
			121		GND					5.0 V		OUT								A1 - $\bar{e}$			
			122		GND					GND								OUT		A1 - $\bar{f}$			
			123		GND		OUT		5.0 V	GND										A1 - $\overline{RBO}$	60	700	
	t_{PHL}		124	GND	IN				GND	GND						OUT				A2 - $\bar{a}$	50		
			125							5.0 V				OUT						A2 - $\bar{c}$			
			126							GND			OUT							A2 - $\bar{d}$			
			127							5.0 V		OUT								A2 - $\bar{e}$			
	t_{PLH}		128							GND						OUT				A2 - $\bar{a}$	30	500	
			129							5.0 V				OUT						A2 - $\bar{c}$			
			130							GND			OUT							A2 - $\bar{d}$			
			131							5.0 V		OUT								A2 - $\bar{e}$			
	t_{PHL}		132		GND				IN	5.0 V					OUT					A3 - $\bar{b}$	50	700	
	t_{PHL}		133	5.0 V	5.0 V		OUT			GND										A3 - $\overline{RBO}$	10	400	
	t_{PLH}		134	GND	GND					5.0 V					OUT					A3 - $\bar{b}$	30	500	
	t_{PLH}		135	5.0 V	5.0 V		OUT			GND										A3 - $\overline{RBO}$	60	700	
	t_{PHL}		136	GND	GND			IN	GND							OUT				$\overline{RBI}$ - $\bar{a}$	30	750	
	t_{PHL}		137				OUT													$\overline{RBI}$-$\overline{RBO}$	10	175	
	t_{PLH}		138													OUT				$\overline{RBI}$ - $\bar{a}$	30	500	
	t_{PLH}		139				OUT													$\overline{RBI}$-$\overline{RBO}$	40	450	
	t_{PHL}		140			IN		GND							OUT					$\overline{LT}$ - $\bar{b}$	50	700	
	t_{PHL}		141														OUT			$\overline{LT}$ - $\bar{g}$	50	700	
	t_{PHL}		142				OUT													$\overline{LT}$ -$\overline{RBO}$	10	350	
	t_{PLH}		143												OUT					$\overline{LT}$ - $\bar{b}$	30	500	
	t_{PLH}		144														OUT			$\overline{LT}$ - $\bar{g}$		500	
	t_{PLH}		145				OUT													$\overline{LT}$ -$\overline{RBO}$		350	
	t_{PHL}		146			5.0 V	IN	5.0 V						OUT						$\overline{RBO}$ - $\bar{c}$		400	
	t_{PLH}		147			5.0 V	IN	5.0 V						OUT						$\overline{RBO}$ - $\bar{c}$		300	
10 T_C = 125°C	t_{PHL}	3003 (Fig 5)	148		GND	5.0 V		5.0 V	GND	IN	GND					OUT			5.0 V	A0 - $\bar{a}$	50	1,200	
			149		5.0 V										OUT					A0 - $\bar{b}$			
			150		GND									OUT						A0 - $\bar{c}$			
			151		GND								OUT							A0 - $\bar{d}$			
			152		GND				5.0 V			OUT								A0 - $\bar{e}$			
			153	5.0 V	5.0 V				GND									OUT		A0 - $\bar{f}$			
			154	5.0 V	5.0 V												OUT			A0 - $\bar{g}$			
			155	GND	GND		OUT	GND												A0 - $\overline{RBO}$	10	500	
	t_{PLH}		156		GND			5.0 V								OUT				A0 - $\bar{a}$	30	1,100	
			157		5.0 V										OUT					A0 - $\bar{b}$			
			158		GND									OUT						A0 - $\bar{c}$			
			159		GND								OUT							A0 - $\bar{d}$			
			160		GND				5.0 V			OUT								A0 - $\bar{e}$			
			161	5.0 V	5.0 V				GND									OUT		A0 - $\bar{f}$			
			162	5.0 V	5.0 V				GND								OUT			A0 - $\bar{g}$			
			163	GND	GND		OUT	GND	GND											A0 - $\overline{RBO}$	60	1,100	

See notes at end of device type 02.

TABLE III. Group A inspection for device type 02 - Continued.
Terminal conditions (pins not designated may be high $\geq$ 2.0 V; or low $\leq$ 0.8 V; or open)

Subgroup	Symbol	MIL-STD-883 method	Case E, F Test No.	1 A1	2 A2	3 $\overline{LT}$	4 $\overline{RBO}$	5 $\overline{RBI}$	6 A3	7 A0	8 GND	9 $\overline{e}$	10 $\overline{d}$	11 $\overline{c}$	12 $\overline{b}$	13 $\overline{a}$	14 $\overline{g}$	15 $\overline{f}$	16 V_{CC}	Meas. terminal	Test limits Min	Max	Unit
10 T_C = 125°C	t_{PHL}	3003 (Fig 5)	164	IN	GND	5.0 V		5.0 V	GND	5.0 V	GND					OUT			5.0 V	A1 - $\overline{a}$	50	1,200	ns
			165		5.0 V					GND				OUT						A1 - $\overline{b}$			
			166		GND					GND										A1 - $\overline{c}$			
			167		5.0 V					5.0 V			OUT							A1 - $\overline{d}$			
			168		GND					5.0 V		OUT								A1 - $\overline{e}$			
			169							GND								OUT		A1 - $\overline{f}$			
			170				OUT		5.0 V	GND										A1 - $\overline{RBO}$	10	500	
	t_{PLH}		171						GND	5.0 V						OUT				A1 - $\overline{a}$	30	1,100	
			172		5.0 V					GND				OUT						A1 - $\overline{b}$			
			173		GND					GND										A1 - $\overline{c}$			
			174		5.0 V					5.0 V			OUT							A1 - $\overline{d}$			
			175		GND					5.0 V		OUT								A1 - $\overline{e}$			
			176		GND					GND								OUT		A1 - $\overline{f}$			
			177		GND		OUT		5.0 V	GND										A1 - $\overline{RBO}$	60	1,100	
	t_{PHL}		178	GND	IN				GND	GND						OUT				A2 - $\overline{a}$	50	1,200	
			179							5.0 V										A2 - $\overline{c}$			
			180							GND			OUT							A2 - $\overline{d}$			
			181							5.0 V		OUT								A2 - $\overline{e}$			
	t_{PLH}		182							GND						OUT				A2 - $\overline{a}$	30	1,100	
			183							5.0 V										A2 - $\overline{c}$			
			184							GND			OUT							A2 - $\overline{d}$			
			185							5.0 V		OUT								A2 - $\overline{e}$			
	t_{PHL}		186		GND				IN	5.0 V					OUT					A3 - $\overline{b}$	50	1,200	
	t_{PHL}		187	5.0 V	5.0 V		OUT			GND										A3 - $\overline{RBO}$	10	500	
	t_{PLH}		188	GND	GND					5.0 V					OUT					A3 - $\overline{b}$	30	1,100	
	t_{PLH}		189	5.0 V	5.0 V		OUT			GND										A3 - $\overline{RBO}$	60	1,100	
	t_{PHL}		190	GND	GND			IN	GND							OUT				$\overline{RBI}$ - $\overline{a}$	30	1,300	
	t_{PHL}		191				OUT													$\overline{RBI}$-$\overline{RBO}$	10	400	
	t_{PLH}		192													OUT				$\overline{RBI}$ - a	30	1,200	
	t_{PLH}		193				OUT													$\overline{RBI}$-$\overline{RBO}$	40	700	
	t_{PHL}		194			IN		GND							OUT					$\overline{LT}$ - $\overline{b}$	50	1,200	
	t_{PHL}		195														OUT			$\overline{LT}$ - $\overline{g}$	50	1,200	
	t_{PHL}		196				OUT													$\overline{LT}$ - $\overline{RBO}$	10	80	
	t_{PLH}		197												OUT					$\overline{LT}$ - $\overline{b}$	30	1,100	
	t_{PLH}		198														OUT			$\overline{LT}$ - $\overline{g}$		1,100	
	t_{PLH}		199				OUT													$\overline{LT}$ - $\overline{RBO}$		700	
	t_{PHL}		200			5.0 V	IN	5.0 V						OUT						$\overline{RBO}$ - $\overline{c}$		600	
	t_{PLH}		201			5.0 V	IN	5.0 V						OUT						$\overline{RBO}$ - $\overline{c}$		700	
11	Same tests, terminal conditions and limits as subgroup 10, except T_C = -55°C.																						

NOTES:
1 X = Input may be high or low.
2 Output voltages shall be either:
(a) H = 2.4 volts minimum and L = 0.4 volts maximum when using a high speed checker double comparator, or
(b) H $\geq$ 1.5 volts and L < 1.5 volts when using a high speed checker single comparator.

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

a. Complete part number (see 1.2).

b. Requirements for delivery of one copy of the quality conformance inspection data pertinent to the device inspection lot to be supplied with each shipment by the device manufacturer, if applicable.

c. Requirements for certificate of compliance, if applicable.

d. Requirements for notification of change of product or process to the contracting activity, if applicable.

e. Requirements for packaging and packing.

f. Requirements for special carriers, lead lengths, or lead forming, if applicable. These requirements shall not affect the part number. Unless otherwise specified, these requirements shall not apply to direct purchase by or direct shipment to the Government.

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

GND	Electrical ground (common terminal).
I_{IN}	Current flowing into an input terminal.
T_C	Case temperature.
V_{IN}	Voltage level at an input terminal.

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

6.6 Generic test data. Generic test data may be used to satisfy the requirements of 4.4.3. Group C generic test data shall be on date codes no more than one year old and on a die in the same microcircuit group (see appendix E of MIL-M-38510) with the same material, design and process and from the same plant as the die represented. Group D (see 4.4.4) generic data shall be on date codes no more than one year old and on the same package type (see terms, definitions, and symbols of MIL-M-38510) and from the same plant as the package represented. The vendor is required to retain the generic data for a period of not less than 36 months from the date of shipment.

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

Military device type	Generic-industry type
01	9321
02	9317

6.8 Ordering guidance. Since the qualification and certification requirements have been removed from the specification, orders may be placed immediately.

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

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

Review activities:
Army - AR, MI
Navy - OS, SH
Air Force - 11, 19, 85, 99
DLA - ES

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

Agent:
DLA - ES

Preparing activity:
Air Force - 17

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